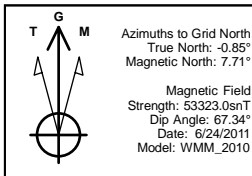




Company: Carrizo Oil & Gas
Site: Speaker
Well: 2-27-31-8-61
Project: Weld County, Colorado (NAD83)
Rig Name: Xtreme 19



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



US State Plane 1983
Colorado Northern Zone

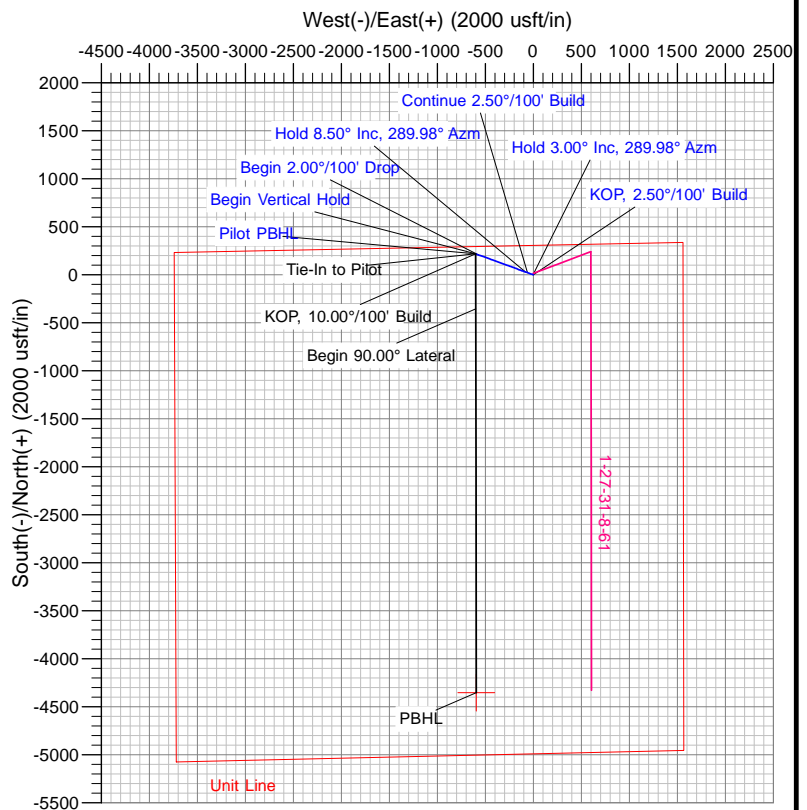
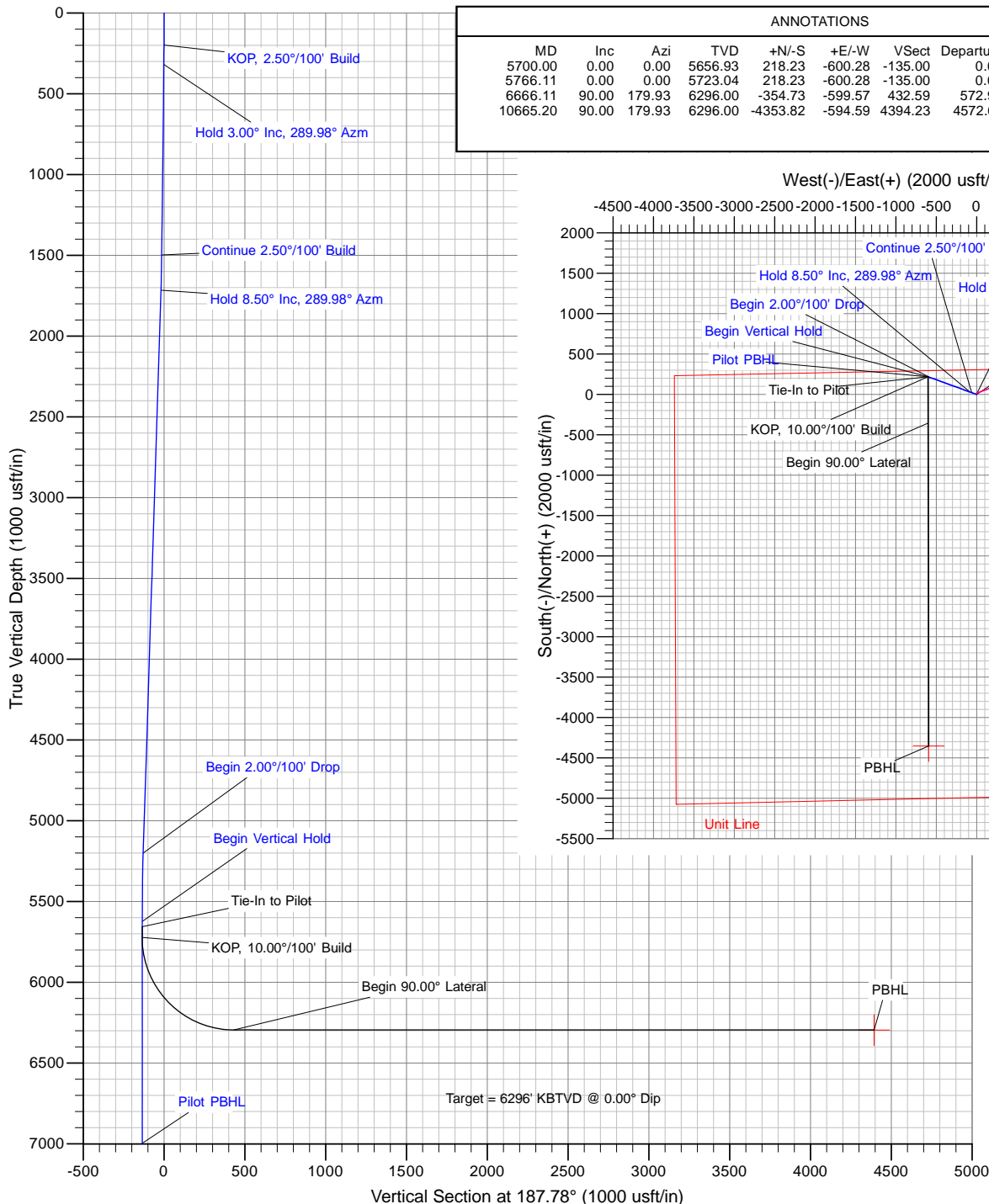
Created By: Vanessa Thom
Date: 13:54, June 30 2011
Plan: Design #5

PILOT ANNOTATIONS

MD	Inc	Azi	TVD	+N/-S	+E/-W	VSec	Departure	Annotation
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	KOP, 2.50°/100' Build
320.00	3.00	289.98	319.95	1.07	-2.95	3.14	3.14	Hold 3.00° Inc, 289.98° Azm
1500.00	3.00	289.98	1498.33	22.17	-60.99	64.90	64.90	Continue 2.50°/100' Build
1719.82	8.50	289.98	1716.96	29.69	-81.67	86.90	86.90	Hold 8.50° Inc, 289.98° Azm
5242.29	8.50	289.98	5200.78	207.49	-570.74	607.28	607.28	Begin 2.00°/100' Drop
5667.07	0.00	0.00	5624.00	218.23	-600.28	638.72	638.72	Begin Vertical Hold
7040.07	0.00	0.00	6997.00	218.23	-600.28	638.72	638.72	Pilot PBHL

ANNOTATIONS

MD	Inc	Azi	TVD	+N/-S	+E/-W	VSec	Departure	Annotation
5700.00	0.00	0.00	5656.93	218.23	-600.28	-135.00	0.00	Tie-In to Pilot
5766.11	0.00	0.00	5723.04	218.23	-600.28	-135.00	0.00	KOP, 10.00°/100' Build
6666.11	90.00	179.93	6296.00	-354.73	-599.57	432.59	572.96	Begin 90.00° Lateral
10665.20	90.00	179.93	6296.00	-4353.82	-594.59	4394.23	4572.05	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)

Speaker

2-27-31-8-61

Pilot

Plan: Design #2

Standard Planning Report

29 June, 2011

Database:	Southern Region	Local Co-ordinate Reference:	Well 2-27-31-8-61
Company:	Carrizo Oil & Gas	TVD Reference:	WELL @ 5007.00usft (Xtreme 19)
Project:	Weld County, Colorado (NAD83)	MD Reference:	WELL @ 5007.00usft (Xtreme 19)
Site:	Speaker	North Reference:	Grid
Well:	2-27-31-8-61	Survey Calculation Method:	Minimum Curvature
Wellbore:	Pilot		
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	2-27-31-8-61			
Well Position	+N/-S	1,478,408.70 usft	Northing:	1,478,408.70 usft
	+E/-W	3,364,087.49 usft	Easting:	3,364,087.49 usft
Position Uncertainty		0.00 usft	Wellhead Elevation:	
			Latitude:	40° 38' 21.2442 N
			Longitude:	104° 11' 16.999 W
			Ground Level:	4,992.00 usft

Wellbore	Pilot				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	WMM_2010	06/24/2011	8.56	67.34	53,323

Design	Design #2			
Audit Notes:				
Version:	Phase:	PROTOTYPE	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.00	0.00	0.00	289.98

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
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00	
320.00	3.00	289.98	319.95	1.07	-2.95	2.50	2.50	0.00	289.98	Vertical - Speaker 2-2
1,500.00	3.00	289.98	1,498.33	22.17	-60.99	0.00	0.00	0.00	0.00	
1,719.82	8.50	289.98	1,716.96	29.69	-81.67	2.50	2.50	0.00	0.00	
5,242.29	8.50	289.98	5,200.78	207.49	-570.74	0.00	0.00	0.00	0.00	
5,667.07	0.00	0.00	5,624.00	218.23	-600.28	2.00	-2.00	0.00	180.00	Vertical - Speaker 2-2
7,040.07	0.00	0.00	6,997.00	218.23	-600.28	0.00	0.00	0.00	0.00	

Database:	Southern Region	Local Co-ordinate Reference:	Well 2-27-31-8-61
Company:	Carrizo Oil & Gas	TVD Reference:	WELL @ 5007.00usft (Xtreme 19)
Project:	Weld County, Colorado (NAD83)	MD Reference:	WELL @ 5007.00usft (Xtreme 19)
Site:	Speaker	North Reference:	Grid
Well:	2-27-31-8-61	Survey Calculation Method:	Minimum Curvature
Wellbore:	Pilot		
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)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
KOP, 2.50°/100' Build									
300.00	2.50	289.98	299.97	0.75	-2.05	2.18	2.50	2.50	0.00
320.00	3.00	289.98	319.95	1.07	-2.95	3.14	2.50	2.50	0.00
Hold 3.00° Inc, 289.98° Azm									
400.00	3.00	289.98	399.84	2.50	-6.89	7.33	0.00	0.00	0.00
500.00	3.00	289.98	499.70	4.29	-11.81	12.56	0.00	0.00	0.00
600.00	3.00	289.98	599.56	6.08	-16.72	17.79	0.00	0.00	0.00
700.00	3.00	289.98	699.42	7.87	-21.64	23.03	0.00	0.00	0.00
800.00	3.00	289.98	799.29	9.66	-26.56	28.26	0.00	0.00	0.00
900.00	3.00	289.98	899.15	11.44	-31.48	33.50	0.00	0.00	0.00
1,000.00	3.00	289.98	999.01	13.23	-36.40	38.73	0.00	0.00	0.00
1,100.00	3.00	289.98	1,098.88	15.02	-41.32	43.96	0.00	0.00	0.00
1,200.00	3.00	289.98	1,198.74	16.81	-46.24	49.20	0.00	0.00	0.00
1,300.00	3.00	289.98	1,298.60	18.60	-51.15	54.43	0.00	0.00	0.00
1,400.00	3.00	289.98	1,398.47	20.39	-56.07	59.66	0.00	0.00	0.00
1,500.00	3.00	289.98	1,498.33	22.17	-60.99	64.90	0.00	0.00	0.00
Continue 2.50°/100' Build									
1,600.00	5.50	289.98	1,598.05	24.71	-67.96	72.31	2.50	2.50	0.00
1,700.00	8.00	289.98	1,697.34	28.72	-79.00	84.06	2.50	2.50	0.00
1,719.82	8.50	289.98	1,716.96	29.69	-81.67	86.90	2.50	2.50	0.00
Hold 8.50° Inc, 289.98° Azm									
1,800.00	8.50	289.98	1,796.26	33.74	-92.81	98.75	0.00	0.00	0.00
1,900.00	8.50	289.98	1,895.16	38.79	-106.69	113.52	0.00	0.00	0.00
2,000.00	8.50	289.98	1,994.06	43.83	-120.57	128.30	0.00	0.00	0.00
2,100.00	8.50	289.98	2,092.97	48.88	-134.46	143.07	0.00	0.00	0.00
2,200.00	8.50	289.98	2,191.87	53.93	-148.34	157.84	0.00	0.00	0.00
2,300.00	8.50	289.98	2,290.77	58.98	-162.23	172.61	0.00	0.00	0.00
2,400.00	8.50	289.98	2,389.68	64.02	-176.11	187.39	0.00	0.00	0.00
2,500.00	8.50	289.98	2,488.58	69.07	-189.99	202.16	0.00	0.00	0.00
2,600.00	8.50	289.98	2,587.48	74.12	-203.88	216.93	0.00	0.00	0.00
2,700.00	8.50	289.98	2,686.38	79.17	-217.76	231.71	0.00	0.00	0.00
2,800.00	8.50	289.98	2,785.29	84.21	-231.65	246.48	0.00	0.00	0.00
2,900.00	8.50	289.98	2,884.19	89.26	-245.53	261.25	0.00	0.00	0.00
3,000.00	8.50	289.98	2,983.09	94.31	-259.42	276.03	0.00	0.00	0.00
3,100.00	8.50	289.98	3,082.00	99.36	-273.30	290.80	0.00	0.00	0.00
3,200.00	8.50	289.98	3,180.90	104.40	-287.18	305.57	0.00	0.00	0.00
3,300.00	8.50	289.98	3,279.80	109.45	-301.07	320.35	0.00	0.00	0.00
3,400.00	8.50	289.98	3,378.70	114.50	-314.95	335.12	0.00	0.00	0.00
3,500.00	8.50	289.98	3,477.61	119.55	-328.84	349.89	0.00	0.00	0.00
3,600.00	8.50	289.98	3,576.51	124.59	-342.72	364.67	0.00	0.00	0.00
3,700.00	8.50	289.98	3,675.41	129.64	-356.60	379.44	0.00	0.00	0.00
3,800.00	8.50	289.98	3,774.31	134.69	-370.49	394.21	0.00	0.00	0.00
3,900.00	8.50	289.98	3,873.22	139.74	-384.37	408.99	0.00	0.00	0.00
4,000.00	8.50	289.98	3,972.12	144.78	-398.26	423.76	0.00	0.00	0.00
4,100.00	8.50	289.98	4,071.02	149.83	-412.14	438.53	0.00	0.00	0.00
4,200.00	8.50	289.98	4,169.93	154.88	-426.02	453.30	0.00	0.00	0.00
4,300.00	8.50	289.98	4,268.83	159.93	-439.91	468.08	0.00	0.00	0.00
4,400.00	8.50	289.98	4,367.73	164.98	-453.79	482.85	0.00	0.00	0.00
4,500.00	8.50	289.98	4,466.63	170.02	-467.68	497.62	0.00	0.00	0.00
4,600.00	8.50	289.98	4,565.54	175.07	-481.56	512.40	0.00	0.00	0.00
4,700.00	8.50	289.98	4,664.44	180.12	-495.45	527.17	0.00	0.00	0.00

Database:	Southern Region	Local Co-ordinate Reference:	Well 2-27-31-8-61
Company:	Carrizo Oil & Gas	TVD Reference:	WELL @ 5007.00usft (Xtreme 19)
Project:	Weld County, Colorado (NAD83)	MD Reference:	WELL @ 5007.00usft (Xtreme 19)
Site:	Speaker	North Reference:	Grid
Well:	2-27-31-8-61	Survey Calculation Method:	Minimum Curvature
Wellbore:	Pilot		
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)
4,800.00	8.50	289.98	4,763.34	185.17	-509.33	541.94	0.00	0.00	0.00
4,900.00	8.50	289.98	4,862.24	190.21	-523.21	556.72	0.00	0.00	0.00
5,000.00	8.50	289.98	4,961.15	195.26	-537.10	571.49	0.00	0.00	0.00
5,100.00	8.50	289.98	5,060.05	200.31	-550.98	586.26	0.00	0.00	0.00
5,200.00	8.50	289.98	5,158.95	205.36	-564.87	601.04	0.00	0.00	0.00
5,242.29	8.50	289.98	5,200.78	207.49	-570.74	607.28	0.00	0.00	0.00
Begin 2.00°/100' Drop									
5,300.00	7.34	289.98	5,257.94	210.21	-578.21	615.23	2.00	-2.00	0.00
5,400.00	5.34	289.98	5,357.32	213.98	-588.59	626.28	2.00	-2.00	0.00
5,500.00	3.34	289.98	5,457.03	216.57	-595.70	633.85	2.00	-2.00	0.00
5,600.00	1.34	289.98	5,556.94	217.96	-599.54	637.93	2.00	-2.00	0.00
5,667.07	0.00	0.00	5,624.00	218.23	-600.28	638.72	2.00	-2.00	0.00
Begin Vertical Hold									
5,700.00	0.00	0.00	5,656.93	218.23	-600.28	638.72	0.00	0.00	0.00
5,800.00	0.00	0.00	5,756.93	218.23	-600.28	638.72	0.00	0.00	0.00
5,900.00	0.00	0.00	5,856.93	218.23	-600.28	638.72	0.00	0.00	0.00
6,000.00	0.00	0.00	5,956.93	218.23	-600.28	638.72	0.00	0.00	0.00
6,100.00	0.00	0.00	6,056.93	218.23	-600.28	638.72	0.00	0.00	0.00
6,200.00	0.00	0.00	6,156.93	218.23	-600.28	638.72	0.00	0.00	0.00
6,300.00	0.00	0.00	6,256.93	218.23	-600.28	638.72	0.00	0.00	0.00
6,400.00	0.00	0.00	6,356.93	218.23	-600.28	638.72	0.00	0.00	0.00
6,500.00	0.00	0.00	6,456.93	218.23	-600.28	638.72	0.00	0.00	0.00
6,600.00	0.00	0.00	6,556.93	218.23	-600.28	638.72	0.00	0.00	0.00
6,700.00	0.00	0.00	6,656.93	218.23	-600.28	638.72	0.00	0.00	0.00
6,800.00	0.00	0.00	6,756.93	218.23	-600.28	638.72	0.00	0.00	0.00
6,900.00	0.00	0.00	6,856.93	218.23	-600.28	638.72	0.00	0.00	0.00
7,000.00	0.00	0.00	6,956.93	218.23	-600.28	638.72	0.00	0.00	0.00
7,040.07	0.00	0.00	6,997.00	218.23	-600.28	638.72	0.00	0.00	0.00
Pilot 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									
Vertical - Speaker 2-27- - plan hits target center - Point	0.00	0.00	5,624.00	218.23	-600.28	1,478,626.93	3,363,487.21	40° 38' 23.4881 N	104° 11' 24.742 W

Plan Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
200.00	200.00	0.00	0.00	KOP, 2.50°/100' Build
320.00	319.95	1.07	-2.95	Hold 3.00° Inc, 289.98° Azm
1,500.00	1,498.33	22.17	-60.99	Continue 2.50°/100' Build
1,719.82	1,716.96	29.69	-81.67	Hold 8.50° Inc, 289.98° Azm
5,242.29	5,200.78	207.49	-570.74	Begin 2.00°/100' Drop
5,667.07	5,624.00	218.23	-600.28	Begin Vertical Hold
7,040.07	6,997.00	218.23	-600.28	Pilot PBHL



Carrizo Oil & Gas

Weld County, Colorado (NAD83)

Speaker

2-27-31-8-61

Wellbore #1

Plan: Design #5

Standard Planning Report

29 June, 2011

Database:	Southern Region	Local Co-ordinate Reference:	Well 2-27-31-8-61
Company:	Carrizo Oil & Gas	TVD Reference:	WELL @ 5007.00usft (Xtreme 19)
Project:	Weld County, Colorado (NAD83)	MD Reference:	WELL @ 5007.00usft (Xtreme 19)
Site:	Speaker	North Reference:	Grid
Well:	2-27-31-8-61	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #5		

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	2-27-31-8-61			
Well Position	+N/-S	1,478,408.70 usft	Northing:	1,478,408.70 usft
	+E/-W	3,364,087.49 usft	Easting:	3,364,087.49 usft
Position Uncertainty		0.00 usft	Wellhead Elevation:	
			Latitude:	40° 38' 21.2442 N
			Longitude:	104° 11' 16.999 W
			Ground Level:	4,992.00 usft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	WMM_2010	06/24/2011	8.56	67.34	53,323

Design	Design #5			
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	187.78

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	5,656.93	218.23	-600.28	0.00	0.00	0.00	0.00	
5,766.11	0.00	0.00	5,723.04	218.23	-600.28	0.00	0.00	0.00	0.00	
6,666.11	90.00	179.93	6,296.00	-354.73	-599.57	10.00	10.00	0.00	179.93	
10,665.20	90.00	179.93	6,296.00	-4,353.82	-594.59	0.00	0.00	0.00	0.00	PBHL Speaker 2-27-3

Database:	Southern Region	Local Co-ordinate Reference:	Well 2-27-31-8-61
Company:	Carrizo Oil & Gas	TVD Reference:	WELL @ 5007.00usft (Xtreme 19)
Project:	Weld County, Colorado (NAD83)	MD Reference:	WELL @ 5007.00usft (Xtreme 19)
Site:	Speaker	North Reference:	Grid
Well:	2-27-31-8-61	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #5		

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	5,656.93	218.23	-600.28	-135.00	0.00	0.00	0.00	
Tie-In to Pilot										
5,766.11	0.00	0.00	5,723.04	218.23	-600.28	-135.00	0.00	0.00	0.00	
KOP, 10.00°/100' Build										
5,800.00	3.39	179.93	5,756.91	217.23	-600.28	-134.01	10.00	10.00	0.00	
5,850.00	8.39	179.93	5,806.63	212.10	-600.27	-128.92	10.00	10.00	0.00	
5,900.00	13.39	179.93	5,855.72	202.66	-600.26	-119.57	10.00	10.00	0.00	
5,950.00	18.39	179.93	5,903.79	188.97	-600.24	-106.01	10.00	10.00	0.00	
6,000.00	23.39	179.93	5,950.49	171.15	-600.22	-88.36	10.00	10.00	0.00	
6,050.00	28.39	179.93	5,995.46	149.33	-600.19	-66.74	10.00	10.00	0.00	
6,100.00	33.39	179.93	6,038.35	123.66	-600.16	-41.32	10.00	10.00	0.00	
6,150.00	38.39	179.93	6,078.85	94.36	-600.13	-12.29	10.00	10.00	0.00	
6,200.00	43.39	179.93	6,116.64	61.64	-600.09	20.12	10.00	10.00	0.00	
6,250.00	48.39	179.93	6,151.43	25.76	-600.04	55.67	10.00	10.00	0.00	
6,300.00	53.39	179.93	6,182.96	-13.03	-599.99	94.10	10.00	10.00	0.00	
6,350.00	58.39	179.93	6,210.99	-54.41	-599.94	135.09	10.00	10.00	0.00	
6,400.00	63.39	179.93	6,235.31	-98.08	-599.89	178.35	10.00	10.00	0.00	
6,450.00	68.39	179.93	6,255.73	-143.71	-599.83	223.55	10.00	10.00	0.00	
6,500.00	73.39	179.93	6,272.09	-190.94	-599.77	270.34	10.00	10.00	0.00	
6,550.00	78.39	179.93	6,284.28	-239.41	-599.71	318.36	10.00	10.00	0.00	
6,600.00	83.39	179.93	6,292.19	-288.77	-599.65	367.25	10.00	10.00	0.00	
6,650.00	88.39	179.93	6,295.77	-338.62	-599.59	416.64	10.00	10.00	0.00	
6,666.11	90.00	179.93	6,296.00	-354.73	-599.57	432.59	10.00	10.00	0.00	
Begin 90.00° Lateral										
6,700.00	90.00	179.93	6,296.00	-388.62	-599.52	466.17	0.00	0.00	0.00	
6,800.00	90.00	179.93	6,296.00	-488.62	-599.40	565.23	0.00	0.00	0.00	
6,900.00	90.00	179.93	6,296.00	-588.62	-599.28	664.29	0.00	0.00	0.00	
7,000.00	90.00	179.93	6,296.00	-688.62	-599.15	763.36	0.00	0.00	0.00	
7,100.00	90.00	179.93	6,296.00	-788.62	-599.03	862.42	0.00	0.00	0.00	
7,200.00	90.00	179.93	6,296.00	-888.62	-598.90	961.48	0.00	0.00	0.00	
7,300.00	90.00	179.93	6,296.00	-988.62	-598.78	1,060.55	0.00	0.00	0.00	
7,400.00	90.00	179.93	6,296.00	-1,088.62	-598.65	1,159.61	0.00	0.00	0.00	
7,500.00	90.00	179.93	6,296.00	-1,188.62	-598.53	1,258.67	0.00	0.00	0.00	
7,600.00	90.00	179.93	6,296.00	-1,288.62	-598.40	1,357.74	0.00	0.00	0.00	
7,700.00	90.00	179.93	6,296.00	-1,388.62	-598.28	1,456.80	0.00	0.00	0.00	
7,800.00	90.00	179.93	6,296.00	-1,488.62	-598.16	1,555.86	0.00	0.00	0.00	
7,900.00	90.00	179.93	6,296.00	-1,588.62	-598.03	1,654.93	0.00	0.00	0.00	
8,000.00	90.00	179.93	6,296.00	-1,688.62	-597.91	1,753.99	0.00	0.00	0.00	
8,100.00	90.00	179.93	6,296.00	-1,788.62	-597.78	1,853.06	0.00	0.00	0.00	
8,200.00	90.00	179.93	6,296.00	-1,888.62	-597.66	1,952.12	0.00	0.00	0.00	
8,300.00	90.00	179.93	6,296.00	-1,988.62	-597.53	2,051.18	0.00	0.00	0.00	
8,400.00	90.00	179.93	6,296.00	-2,088.62	-597.41	2,150.25	0.00	0.00	0.00	
8,500.00	90.00	179.93	6,296.00	-2,188.62	-597.28	2,249.31	0.00	0.00	0.00	
8,600.00	90.00	179.93	6,296.00	-2,288.62	-597.16	2,348.37	0.00	0.00	0.00	
8,700.00	90.00	179.93	6,296.00	-2,388.62	-597.04	2,447.44	0.00	0.00	0.00	
8,800.00	90.00	179.93	6,296.00	-2,488.62	-596.91	2,546.50	0.00	0.00	0.00	
8,900.00	90.00	179.93	6,296.00	-2,588.62	-596.79	2,645.56	0.00	0.00	0.00	
9,000.00	90.00	179.93	6,296.00	-2,688.62	-596.66	2,744.63	0.00	0.00	0.00	
9,100.00	90.00	179.93	6,296.00	-2,788.62	-596.54	2,843.69	0.00	0.00	0.00	
9,200.00	90.00	179.93	6,296.00	-2,888.62	-596.41	2,942.75	0.00	0.00	0.00	
9,300.00	90.00	179.93	6,296.00	-2,988.62	-596.29	3,041.82	0.00	0.00	0.00	
9,400.00	90.00	179.93	6,296.00	-3,088.62	-596.16	3,140.88	0.00	0.00	0.00	
9,500.00	90.00	179.93	6,296.00	-3,188.62	-596.04	3,239.94	0.00	0.00	0.00	

Database:	Southern Region	Local Co-ordinate Reference:	Well 2-27-31-8-61
Company:	Carrizo Oil & Gas	TVD Reference:	WELL @ 5007.00usft (Xtreme 19)
Project:	Weld County, Colorado (NAD83)	MD Reference:	WELL @ 5007.00usft (Xtreme 19)
Site:	Speaker	North Reference:	Grid
Well:	2-27-31-8-61	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #5		

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	179.93	6,296.00	-3,288.62	-595.92	3,339.01	0.00	0.00	0.00	
9,700.00	90.00	179.93	6,296.00	-3,388.62	-595.79	3,438.07	0.00	0.00	0.00	
9,800.00	90.00	179.93	6,296.00	-3,488.62	-595.67	3,537.13	0.00	0.00	0.00	
9,900.00	90.00	179.93	6,296.00	-3,588.62	-595.54	3,636.20	0.00	0.00	0.00	
10,000.00	90.00	179.93	6,296.00	-3,688.62	-595.42	3,735.26	0.00	0.00	0.00	
10,100.00	90.00	179.93	6,296.00	-3,788.62	-595.29	3,834.32	0.00	0.00	0.00	
10,200.00	90.00	179.93	6,296.00	-3,888.62	-595.17	3,933.39	0.00	0.00	0.00	
10,300.00	90.00	179.93	6,296.00	-3,988.62	-595.04	4,032.45	0.00	0.00	0.00	
10,400.00	90.00	179.93	6,296.00	-4,088.62	-594.92	4,131.51	0.00	0.00	0.00	
10,500.00	90.00	179.93	6,296.00	-4,188.62	-594.80	4,230.58	0.00	0.00	0.00	
10,600.00	90.00	179.93	6,296.00	-4,288.62	-594.67	4,329.64	0.00	0.00	0.00	
10,665.20	90.00	179.93	6,296.00	-4,353.82	-594.59	4,394.23	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 Speaker 2-27-31-8-61	0.00	0.01	6,296.00	-4,353.82	-594.59	1,474,054.88	3,363,492.90	40° 37' 38.3136 N	104° 11' 25.545 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	5,656.93	218.23	-600.28	Tie-In to Pilot	
5,766.11	5,723.04	218.23	-600.28	KOP, 10.00°/100' Build	
6,666.11	6,296.00	-354.73	-599.57	Begin 90.00° Lateral	
10,665.20	6,296.00	-4,353.82	-594.59	PBHL	