




Company: Carrizo Oil & Gas  
 Site: Orlando Hill  
 Well: 21-44-7-60  
 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



Azimuths to Grid North  
 True North: -0.91°  
 Magnetic North: 7.60°

Magnetic Field  
 Strength: 53297.9snT  
 Dip Angle: 67.29°  
 Date: 5/26/2011  
 Model: WMM\_2010

US State Plane 1983  
 Colorado Northern Zone

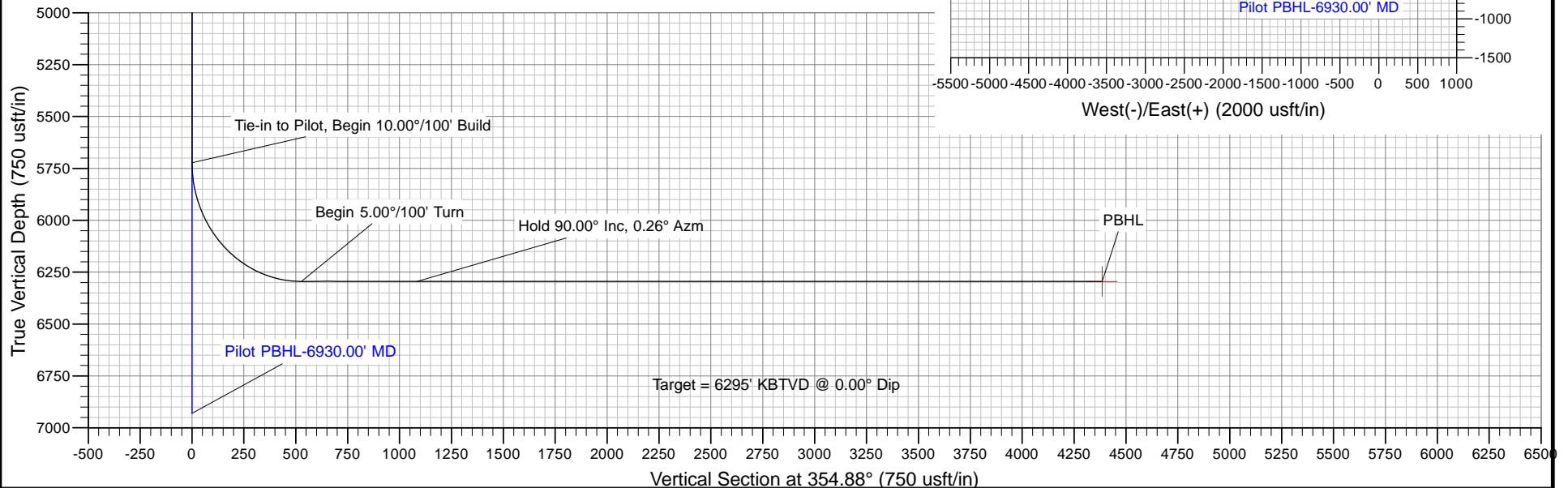
Created By: Vanessa Thom  
 Date: 8:29, August 05 2011  
 Plan: Design #2

#### PILOT ANNOTATIONS

MD	Inc	Azi	TVD	+N/-S	+E/-W	VSect	Departure	Annotation
6930.00	0.00	0.00	6930.00	0.00	0.00	0.00	0.00	Pilot PBHL-6930.00' MD

#### ANNOTATIONS

MD	Inc	Azi	TVD	+N/-S	+E/-W	VSect	Departure	Annotation
5722.04	0.00	0.00	5722.04	0.00	0.00	0.00	0.00	Tie-in to Pilot, Begin 10.00°/100' Build
6622.04	90.00	331.79	6295.00	504.90	-270.84	527.07	572.96	Begin 5.00°/100' Turn
7191.52	90.00	0.26	6295.00	1051.87	-406.94	1084.01	1142.44	Hold 90.00° Inc, 0.26° Azm
10507.50	90.00	0.26	6295.00	4367.81	-391.65	4385.33	4458.42	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)**

**Orlando Hill**

**21-44-7-60**

**Wellbore #1**

**Plan: Design #2**

## **Standard Planning Report**

**05 August, 2011**

<b>Database:</b>	Southern Region	<b>Local Co-ordinate Reference:</b>	Well 21-44-7-60
<b>Company:</b>	Carrizo Oil & Gas	<b>TVD Reference:</b>	WELL @ 4930.20usft (Xtreme 19)
<b>Project:</b>	Weld County, Colorado (NAD83)	<b>MD Reference:</b>	WELL @ 4930.20usft (Xtreme 19)
<b>Site:</b>	Orlando Hill	<b>North Reference:</b>	Grid
<b>Well:</b>	21-44-7-60	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Design #2		

<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>	21-44-7-60			
<b>Well Position</b>	<b>+N/-S</b>	1,447,826.03 usft	<b>Northing:</b>	1,447,826.03 usft
	<b>+E/-W</b>	3,391,741.08 usft	<b>Easting:</b>	3,391,741.08 usft
<b>Position Uncertainty</b>		0.00 usft	<b>Wellhead Elevation:</b>	<b>Latitude:</b> 40° 33' 14.8816 N
				<b>Longitude:</b> 104° 5' 24.637 W
				<b>Ground Level:</b> 4,915.20 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	5/26/2011	8.51	67.29	53,298

<b>Design</b>	Design #2				
<b>Audit Notes:</b>					
<b>Version:</b>	<b>Phase:</b>	PROTOTYPE	<b>Tie On Depth:</b>	5,722.04	
<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	354.88	

<b>Plan Sections</b>										
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
5,722.04	0.00	0.00	5,722.04	0.00	0.00	0.00	0.00	0.00	0.00	
6,622.04	90.00	331.79	6,295.00	504.90	-270.84	10.00	10.00	0.00	331.79	
7,191.52	90.00	0.26	6,295.00	1,051.87	-406.94	5.00	0.00	5.00	90.00	
10,507.50	90.00	0.26	6,295.00	4,367.81	-391.65	0.00	0.00	0.00	0.00	PBHL v2 - Orlando Hi

<b>Database:</b>	Southern Region	<b>Local Co-ordinate Reference:</b>	Well 21-44-7-60
<b>Company:</b>	Carrizo Oil & Gas	<b>TVD Reference:</b>	WELL @ 4930.20usft (Xtreme 19)
<b>Project:</b>	Weld County, Colorado (NAD83)	<b>MD Reference:</b>	WELL @ 4930.20usft (Xtreme 19)
<b>Site:</b>	Orlando Hill	<b>North Reference:</b>	Grid
<b>Well:</b>	21-44-7-60	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	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
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	0.00
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00
1,100.00	0.00	0.00	1,100.00	0.00	0.00	0.00	0.00	0.00	0.00
1,200.00	0.00	0.00	1,200.00	0.00	0.00	0.00	0.00	0.00	0.00
1,300.00	0.00	0.00	1,300.00	0.00	0.00	0.00	0.00	0.00	0.00
1,400.00	0.00	0.00	1,400.00	0.00	0.00	0.00	0.00	0.00	0.00
1,500.00	0.00	0.00	1,500.00	0.00	0.00	0.00	0.00	0.00	0.00
1,600.00	0.00	0.00	1,600.00	0.00	0.00	0.00	0.00	0.00	0.00
1,700.00	0.00	0.00	1,700.00	0.00	0.00	0.00	0.00	0.00	0.00
1,800.00	0.00	0.00	1,800.00	0.00	0.00	0.00	0.00	0.00	0.00
1,900.00	0.00	0.00	1,900.00	0.00	0.00	0.00	0.00	0.00	0.00
2,000.00	0.00	0.00	2,000.00	0.00	0.00	0.00	0.00	0.00	0.00
2,100.00	0.00	0.00	2,100.00	0.00	0.00	0.00	0.00	0.00	0.00
2,200.00	0.00	0.00	2,200.00	0.00	0.00	0.00	0.00	0.00	0.00
2,300.00	0.00	0.00	2,300.00	0.00	0.00	0.00	0.00	0.00	0.00
2,400.00	0.00	0.00	2,400.00	0.00	0.00	0.00	0.00	0.00	0.00
2,500.00	0.00	0.00	2,500.00	0.00	0.00	0.00	0.00	0.00	0.00
2,600.00	0.00	0.00	2,600.00	0.00	0.00	0.00	0.00	0.00	0.00
2,700.00	0.00	0.00	2,700.00	0.00	0.00	0.00	0.00	0.00	0.00
2,800.00	0.00	0.00	2,800.00	0.00	0.00	0.00	0.00	0.00	0.00
2,900.00	0.00	0.00	2,900.00	0.00	0.00	0.00	0.00	0.00	0.00
3,000.00	0.00	0.00	3,000.00	0.00	0.00	0.00	0.00	0.00	0.00
3,100.00	0.00	0.00	3,100.00	0.00	0.00	0.00	0.00	0.00	0.00
3,200.00	0.00	0.00	3,200.00	0.00	0.00	0.00	0.00	0.00	0.00
3,300.00	0.00	0.00	3,300.00	0.00	0.00	0.00	0.00	0.00	0.00
3,400.00	0.00	0.00	3,400.00	0.00	0.00	0.00	0.00	0.00	0.00
3,500.00	0.00	0.00	3,500.00	0.00	0.00	0.00	0.00	0.00	0.00
3,600.00	0.00	0.00	3,600.00	0.00	0.00	0.00	0.00	0.00	0.00
3,700.00	0.00	0.00	3,700.00	0.00	0.00	0.00	0.00	0.00	0.00
3,800.00	0.00	0.00	3,800.00	0.00	0.00	0.00	0.00	0.00	0.00
3,900.00	0.00	0.00	3,900.00	0.00	0.00	0.00	0.00	0.00	0.00
4,000.00	0.00	0.00	4,000.00	0.00	0.00	0.00	0.00	0.00	0.00
4,100.00	0.00	0.00	4,100.00	0.00	0.00	0.00	0.00	0.00	0.00
4,200.00	0.00	0.00	4,200.00	0.00	0.00	0.00	0.00	0.00	0.00
4,300.00	0.00	0.00	4,300.00	0.00	0.00	0.00	0.00	0.00	0.00
4,400.00	0.00	0.00	4,400.00	0.00	0.00	0.00	0.00	0.00	0.00
4,500.00	0.00	0.00	4,500.00	0.00	0.00	0.00	0.00	0.00	0.00
4,600.00	0.00	0.00	4,600.00	0.00	0.00	0.00	0.00	0.00	0.00
4,700.00	0.00	0.00	4,700.00	0.00	0.00	0.00	0.00	0.00	0.00
4,800.00	0.00	0.00	4,800.00	0.00	0.00	0.00	0.00	0.00	0.00
4,900.00	0.00	0.00	4,900.00	0.00	0.00	0.00	0.00	0.00	0.00
5,000.00	0.00	0.00	5,000.00	0.00	0.00	0.00	0.00	0.00	0.00
5,100.00	0.00	0.00	5,100.00	0.00	0.00	0.00	0.00	0.00	0.00
5,200.00	0.00	0.00	5,200.00	0.00	0.00	0.00	0.00	0.00	0.00
5,300.00	0.00	0.00	5,300.00	0.00	0.00	0.00	0.00	0.00	0.00

<b>Database:</b>	Southern Region	<b>Local Co-ordinate Reference:</b>	Well 21-44-7-60
<b>Company:</b>	Carrizo Oil & Gas	<b>TVD Reference:</b>	WELL @ 4930.20usft (Xtreme 19)
<b>Project:</b>	Weld County, Colorado (NAD83)	<b>MD Reference:</b>	WELL @ 4930.20usft (Xtreme 19)
<b>Site:</b>	Orlando Hill	<b>North Reference:</b>	Grid
<b>Well:</b>	21-44-7-60	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	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)
5,400.00	0.00	0.00	5,400.00	0.00	0.00	0.00	0.00	0.00	0.00
5,500.00	0.00	0.00	5,500.00	0.00	0.00	0.00	0.00	0.00	0.00
5,600.00	0.00	0.00	5,600.00	0.00	0.00	0.00	0.00	0.00	0.00
5,700.00	0.00	0.00	5,700.00	0.00	0.00	0.00	0.00	0.00	0.00
5,722.04	0.00	0.00	5,722.04	0.00	0.00	0.00	0.00	0.00	0.00
<b>Tie-in to Pilot, Begin 10.00°/100' Build</b>									
5,750.00	2.80	331.79	5,749.99	0.60	-0.32	0.63	10.00	10.00	0.00
5,800.00	7.80	331.79	5,799.76	4.67	-2.50	4.87	10.00	10.00	0.00
5,850.00	12.80	331.79	5,848.94	12.54	-6.73	13.09	10.00	10.00	0.00
5,900.00	17.80	331.79	5,897.15	24.16	-12.96	25.22	10.00	10.00	0.00
5,950.00	22.80	331.79	5,944.03	39.44	-21.16	41.17	10.00	10.00	0.00
6,000.00	27.80	331.79	5,989.22	58.26	-31.25	60.82	10.00	10.00	0.00
6,050.00	32.80	331.79	6,032.38	80.48	-43.17	84.01	10.00	10.00	0.00
6,100.00	37.80	331.79	6,073.18	105.93	-56.82	110.58	10.00	10.00	0.00
6,150.00	42.80	331.79	6,111.30	134.42	-72.10	140.32	10.00	10.00	0.00
6,200.00	47.80	331.79	6,146.46	165.72	-88.90	173.00	10.00	10.00	0.00
6,250.00	52.80	331.79	6,178.39	199.61	-107.08	208.38	10.00	10.00	0.00
6,300.00	57.80	331.79	6,206.85	235.82	-126.50	246.18	10.00	10.00	0.00
6,350.00	62.80	331.79	6,231.62	274.08	-147.02	286.12	10.00	10.00	0.00
6,400.00	67.80	331.79	6,252.51	314.10	-168.49	327.89	10.00	10.00	0.00
6,450.00	72.80	331.79	6,269.36	355.57	-190.73	371.18	10.00	10.00	0.00
6,500.00	77.80	331.79	6,282.05	398.17	-213.59	415.65	10.00	10.00	0.00
6,550.00	82.80	331.79	6,290.47	441.59	-236.88	460.98	10.00	10.00	0.00
6,600.00	87.80	331.79	6,294.57	485.49	-260.42	506.80	10.00	10.00	0.00
6,622.04	90.00	331.79	6,295.00	504.90	-270.84	527.07	10.00	10.00	0.00
<b>Begin 5.00°/100' Turn</b>									
6,700.00	90.00	335.69	6,295.00	574.80	-305.33	599.77	5.00	0.00	5.00
6,800.00	90.00	340.69	6,295.00	667.61	-342.47	695.53	5.00	0.00	5.00
6,900.00	90.00	345.69	6,295.00	763.31	-371.39	793.43	5.00	0.00	5.00
7,000.00	90.00	350.69	6,295.00	861.16	-391.85	892.72	5.00	0.00	5.00
7,100.00	90.00	355.69	6,295.00	960.42	-403.71	992.64	5.00	0.00	5.00
7,191.52	90.00	0.26	6,295.00	1,051.87	-406.94	1,084.01	5.00	0.00	5.00
<b>Hold 90.00° Inc, 0.26° Azm</b>									
7,200.00	90.00	0.26	6,295.00	1,060.34	-406.90	1,092.44	0.00	0.00	0.00
7,300.00	90.00	0.26	6,295.00	1,160.34	-406.44	1,192.00	0.00	0.00	0.00
7,400.00	90.00	0.26	6,295.00	1,260.34	-405.98	1,291.56	0.00	0.00	0.00
7,500.00	90.00	0.26	6,295.00	1,360.34	-405.52	1,391.12	0.00	0.00	0.00
7,600.00	90.00	0.26	6,295.00	1,460.34	-405.06	1,490.68	0.00	0.00	0.00
7,700.00	90.00	0.26	6,295.00	1,560.34	-404.59	1,590.24	0.00	0.00	0.00
7,800.00	90.00	0.26	6,295.00	1,660.34	-404.13	1,689.79	0.00	0.00	0.00
7,900.00	90.00	0.26	6,295.00	1,760.33	-403.67	1,789.35	0.00	0.00	0.00
8,000.00	90.00	0.26	6,295.00	1,860.33	-403.21	1,888.91	0.00	0.00	0.00
8,100.00	90.00	0.26	6,295.00	1,960.33	-402.75	1,988.47	0.00	0.00	0.00
8,200.00	90.00	0.26	6,295.00	2,060.33	-402.29	2,088.03	0.00	0.00	0.00
8,300.00	90.00	0.26	6,295.00	2,160.33	-401.83	2,187.58	0.00	0.00	0.00
8,400.00	90.00	0.26	6,295.00	2,260.33	-401.37	2,287.14	0.00	0.00	0.00
8,500.00	90.00	0.26	6,295.00	2,360.33	-400.91	2,386.70	0.00	0.00	0.00
8,600.00	90.00	0.26	6,295.00	2,460.33	-400.44	2,486.26	0.00	0.00	0.00
8,700.00	90.00	0.26	6,295.00	2,560.33	-399.98	2,585.82	0.00	0.00	0.00
8,800.00	90.00	0.26	6,295.00	2,660.32	-399.52	2,685.38	0.00	0.00	0.00
8,900.00	90.00	0.26	6,295.00	2,760.32	-399.06	2,784.93	0.00	0.00	0.00
9,000.00	90.00	0.26	6,295.00	2,860.32	-398.60	2,884.49	0.00	0.00	0.00
9,100.00	90.00	0.26	6,295.00	2,960.32	-398.14	2,984.05	0.00	0.00	0.00

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<b>Project:</b>	Weld County, Colorado (NAD83)	<b>MD Reference:</b>	WELL @ 4930.20usft (Xtreme 19)
<b>Site:</b>	Orlando Hill	<b>North Reference:</b>	Grid
<b>Well:</b>	21-44-7-60	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	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)	
9,200.00	90.00	0.26	6,295.00	3,060.32	-397.68	3,083.61	0.00	0.00	0.00	
9,300.00	90.00	0.26	6,295.00	3,160.32	-397.22	3,183.17	0.00	0.00	0.00	
9,400.00	90.00	0.26	6,295.00	3,260.32	-396.76	3,282.72	0.00	0.00	0.00	
9,500.00	90.00	0.26	6,295.00	3,360.32	-396.30	3,382.28	0.00	0.00	0.00	
9,600.00	90.00	0.26	6,295.00	3,460.32	-395.83	3,481.84	0.00	0.00	0.00	
9,700.00	90.00	0.26	6,295.00	3,560.32	-395.37	3,581.40	0.00	0.00	0.00	
9,800.00	90.00	0.26	6,295.00	3,660.31	-394.91	3,680.96	0.00	0.00	0.00	
9,900.00	90.00	0.26	6,295.00	3,760.31	-394.45	3,780.51	0.00	0.00	0.00	
10,000.00	90.00	0.26	6,295.00	3,860.31	-393.99	3,880.07	0.00	0.00	0.00	
10,100.00	90.00	0.26	6,295.00	3,960.31	-393.53	3,979.63	0.00	0.00	0.00	
10,200.00	90.00	0.26	6,295.00	4,060.31	-393.07	4,079.19	0.00	0.00	0.00	
10,300.00	90.00	0.26	6,295.00	4,160.31	-392.61	4,178.75	0.00	0.00	0.00	
10,400.00	90.00	0.26	6,295.00	4,260.31	-392.15	4,278.31	0.00	0.00	0.00	
10,507.50	90.00	0.26	6,295.00	4,367.81	-391.65	4,385.33	0.00	0.00	0.00	
PBHL										

Design Targets										
Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude		Longitude
PBHL v2 - Orlando Hill 2 - plan hits target center - Point	0.00	0.01	6,295.00	4,367.81	-391.65	1,452,193.84	3,391,349.43	40° 33' 58.0988 N		104° 5' 28.811 W

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment	
		+N/-S (usft)	+E/-W (usft)		
5,722.04	5,722.04	0.00	0.00	Tie-in to Pilot, Begin 10.00°/100' Build	
6,622.04	6,295.00	504.90	-270.84	Begin 5.00°/100' Turn	
7,191.52	6,295.00	1,051.87	-406.94	Hold 90.00° Inc, 0.26° Azm	
10,507.50	6,295.00	4,367.81	-391.65	PBHL	