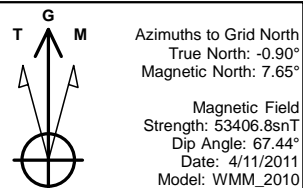




Company: Carrizo Oil & Gas  
 Site: Nelson  
 Well: 17-44-9-60  
 Project: Weld County, Colorado (NAD83)  
 Rig Name: KB



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

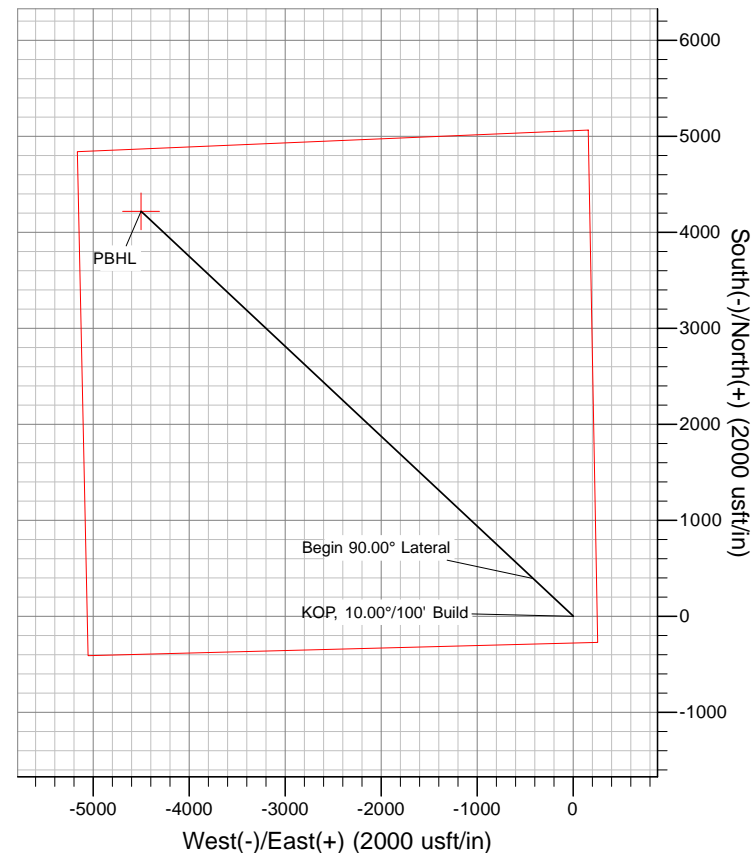
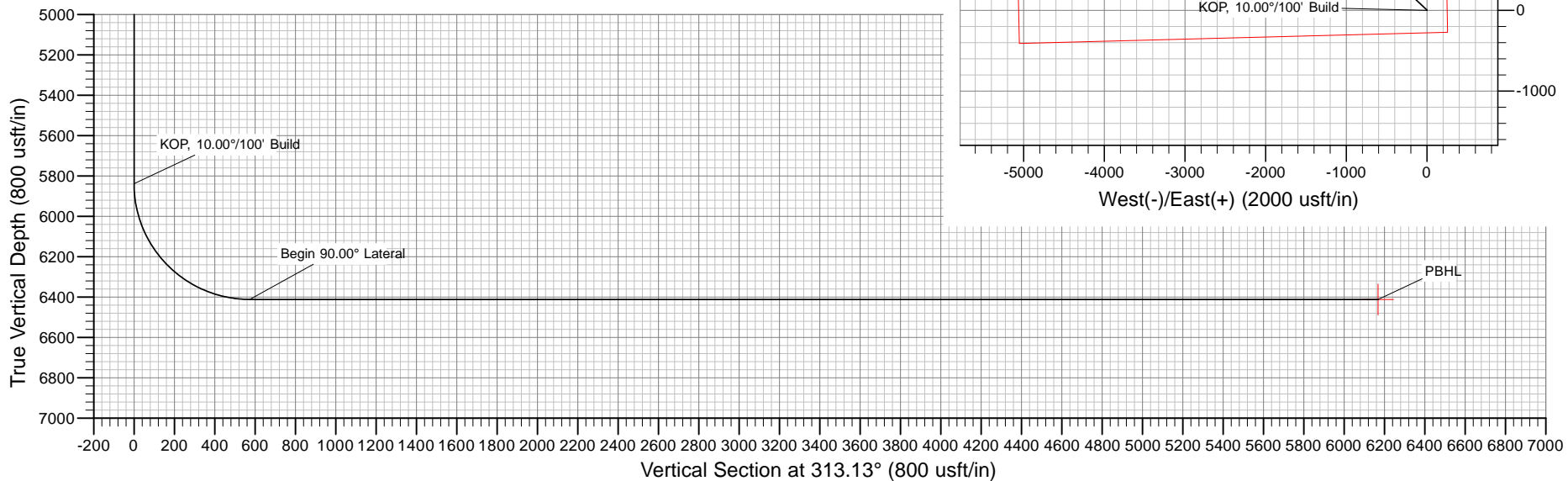


US State Plane 1983  
 Colorado Northern Zone

Created By: Vanessa Thom  
 Date: 15:39, April 11 2011  
 Plan: Design #2

#### ANNOTATIONS

MD	Inc	Azi	TVD	+N/-S	+E/-W	VSec	Departure	Annotation
5839.04	0.00	0.00	5839.04	0.00	0.00	0.00	0.00	KOP, 10.00°/100' Build
6739.04	90.00	313.13	6412.00	391.70	-418.15	572.96	572.96	Begin 90.00° Lateral
12334.49	90.00	313.13	6412.00	4217.04	-4501.76	6168.41	6168.41	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)**

**Nelson**

**17-44-9-60**

**Wellbore #1**

**Plan: Design #2**

## **Standard Planning Report**

**11 April, 2011**

<b>Database:</b>	Southern Region	<b>Local Co-ordinate Reference:</b>	Well 17-44-9-60
<b>Company:</b>	Carrizo Oil & Gas	<b>TVD Reference:</b>	WELL @ 5023.20usft (KB)
<b>Project:</b>	Weld County, Colorado (NAD83)	<b>MD Reference:</b>	WELL @ 5023.20usft (KB)
<b>Site:</b>	Nelson	<b>North Reference:</b>	Grid
<b>Well:</b>	17-44-9-60	<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>	17-44-9-60			
<b>Well Position</b>	<b>+N/-S</b>	1,516,552.18 usft	<b>Northing:</b>	1,516,552.18 usft
	<b>+E/-W</b>	3,385,673.43 usft	<b>Easting:</b>	3,385,673.43 usft
<b>Position Uncertainty</b>		0.00 usft	<b>Wellhead Elevation:</b>	
			<b>Latitude:</b>	40° 44' 34.8555 N
			<b>Longitude:</b>	104° 6' 29.261 W
			<b>Ground Level:</b>	5,008.20 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	4/11/2011	8.55	67.44	53,407

<b>Design</b>	Design #2			
<b>Audit Notes:</b>				
<b>Version:</b>	<b>Phase:</b>	PROTOTYPE	<b>Tie On Depth:</b>	0.00
<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	313.13

<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>
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
5,839.04	0.00	0.00	5,839.04	0.00	0.00	0.00	0.00	0.00	0.00	
6,739.04	90.00	313.13	6,412.00	391.70	-418.15	10.00	10.00	0.00	313.13	
12,334.49	90.00	313.13	6,412.00	4,217.04	-4,501.76	0.00	0.00	0.00	0.00	Nelson 17-44-9-60 - F

<b>Database:</b>	Southern Region	<b>Local Co-ordinate Reference:</b>	Well 17-44-9-60
<b>Company:</b>	Carrizo Oil & Gas	<b>TVD Reference:</b>	WELL @ 5023.20usft (KB)
<b>Project:</b>	Weld County, Colorado (NAD83)	<b>MD Reference:</b>	WELL @ 5023.20usft (KB)
<b>Site:</b>	Nelson	<b>North Reference:</b>	Grid
<b>Well:</b>	17-44-9-60	<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 17-44-9-60
<b>Company:</b>	Carrizo Oil & Gas	<b>TVD Reference:</b>	WELL @ 5023.20usft (KB)
<b>Project:</b>	Weld County, Colorado (NAD83)	<b>MD Reference:</b>	WELL @ 5023.20usft (KB)
<b>Site:</b>	Nelson	<b>North Reference:</b>	Grid
<b>Well:</b>	17-44-9-60	<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
5,800.00	0.00	0.00	5,800.00	0.00	0.00	0.00	0.00	0.00	0.00
5,839.04	0.00	0.00	5,839.04	0.00	0.00	0.00	0.00	0.00	0.00
<b>KOP, 10.00°/100' Build</b>									
5,850.00	1.10	313.13	5,850.00	0.07	-0.08	0.10	10.00	10.00	0.00
5,900.00	6.10	313.13	5,899.89	2.21	-2.36	3.24	10.00	10.00	0.00
5,950.00	11.10	313.13	5,949.31	7.32	-7.82	10.71	10.00	10.00	0.00
6,000.00	16.10	313.13	5,997.89	15.35	-16.39	22.46	10.00	10.00	0.00
6,050.00	21.10	313.13	6,045.27	26.25	-28.02	38.40	10.00	10.00	0.00
6,100.00	26.10	313.13	6,091.07	39.93	-42.63	58.41	10.00	10.00	0.00
6,150.00	31.10	313.13	6,134.96	56.29	-60.09	82.33	10.00	10.00	0.00
6,200.00	36.10	313.13	6,176.59	75.19	-80.27	109.99	10.00	10.00	0.00
6,250.00	41.10	313.13	6,215.66	96.51	-103.03	141.17	10.00	10.00	0.00
6,300.00	46.10	313.13	6,251.86	120.07	-128.18	175.64	10.00	10.00	0.00
6,350.00	51.10	313.13	6,284.92	145.71	-155.54	213.13	10.00	10.00	0.00
6,400.00	56.10	313.13	6,314.58	173.21	-184.90	253.36	10.00	10.00	0.00
6,450.00	61.10	313.13	6,340.63	202.37	-216.04	296.02	10.00	10.00	0.00
6,500.00	66.10	313.13	6,362.85	232.98	-248.71	340.79	10.00	10.00	0.00
6,550.00	71.10	313.13	6,381.10	264.80	-282.67	387.33	10.00	10.00	0.00
6,600.00	76.10	313.13	6,395.21	297.58	-317.67	435.28	10.00	10.00	0.00
6,650.00	81.10	313.13	6,405.10	331.07	-353.43	484.27	10.00	10.00	0.00
6,700.00	86.10	313.13	6,410.67	365.03	-389.68	533.95	10.00	10.00	0.00
6,739.04	90.00	313.13	6,412.00	391.70	-418.15	572.96	10.00	10.00	0.00
<b>Begin 90.00° Lateral</b>									
6,800.00	90.00	313.13	6,412.00	433.38	-462.64	633.92	0.00	0.00	0.00
6,900.00	90.00	313.13	6,412.00	501.74	-535.62	733.92	0.00	0.00	0.00
7,000.00	90.00	313.13	6,412.00	570.11	-608.60	833.92	0.00	0.00	0.00
7,100.00	90.00	313.13	6,412.00	638.47	-681.58	933.92	0.00	0.00	0.00
7,200.00	90.00	313.13	6,412.00	706.84	-754.56	1,033.92	0.00	0.00	0.00
7,300.00	90.00	313.13	6,412.00	775.20	-827.54	1,133.92	0.00	0.00	0.00
7,400.00	90.00	313.13	6,412.00	843.57	-900.52	1,233.92	0.00	0.00	0.00
7,500.00	90.00	313.13	6,412.00	911.93	-973.50	1,333.92	0.00	0.00	0.00
7,600.00	90.00	313.13	6,412.00	980.30	-1,046.48	1,433.92	0.00	0.00	0.00
7,700.00	90.00	313.13	6,412.00	1,048.66	-1,119.47	1,533.92	0.00	0.00	0.00
7,800.00	90.00	313.13	6,412.00	1,117.03	-1,192.45	1,633.92	0.00	0.00	0.00
7,900.00	90.00	313.13	6,412.00	1,185.39	-1,265.43	1,733.92	0.00	0.00	0.00
8,000.00	90.00	313.13	6,412.00	1,253.76	-1,338.41	1,833.92	0.00	0.00	0.00
8,100.00	90.00	313.13	6,412.00	1,322.12	-1,411.39	1,933.92	0.00	0.00	0.00
8,200.00	90.00	313.13	6,412.00	1,390.49	-1,484.37	2,033.92	0.00	0.00	0.00
8,300.00	90.00	313.13	6,412.00	1,458.85	-1,557.35	2,133.92	0.00	0.00	0.00
8,400.00	90.00	313.13	6,412.00	1,527.22	-1,630.33	2,233.92	0.00	0.00	0.00
8,500.00	90.00	313.13	6,412.00	1,595.58	-1,703.31	2,333.92	0.00	0.00	0.00
8,600.00	90.00	313.13	6,412.00	1,663.95	-1,776.29	2,433.92	0.00	0.00	0.00
8,700.00	90.00	313.13	6,412.00	1,732.31	-1,849.27	2,533.92	0.00	0.00	0.00
8,800.00	90.00	313.13	6,412.00	1,800.68	-1,922.26	2,633.92	0.00	0.00	0.00
8,900.00	90.00	313.13	6,412.00	1,869.04	-1,995.24	2,733.92	0.00	0.00	0.00
9,000.00	90.00	313.13	6,412.00	1,937.41	-2,068.22	2,833.92	0.00	0.00	0.00
9,100.00	90.00	313.13	6,412.00	2,005.77	-2,141.20	2,933.92	0.00	0.00	0.00
9,200.00	90.00	313.13	6,412.00	2,074.14	-2,214.18	3,033.92	0.00	0.00	0.00
9,300.00	90.00	313.13	6,412.00	2,142.51	-2,287.16	3,133.92	0.00	0.00	0.00

<b>Database:</b>	Southern Region	<b>Local Co-ordinate Reference:</b>	Well 17-44-9-60
<b>Company:</b>	Carrizo Oil & Gas	<b>TVD Reference:</b>	WELL @ 5023.20usft (KB)
<b>Project:</b>	Weld County, Colorado (NAD83)	<b>MD Reference:</b>	WELL @ 5023.20usft (KB)
<b>Site:</b>	Nelson	<b>North Reference:</b>	Grid
<b>Well:</b>	17-44-9-60	<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)	
9,400.00	90.00	313.13	6,412.00	2,210.87	-2,360.14	3,233.92	0.00	0.00	0.00	
9,500.00	90.00	313.13	6,412.00	2,279.24	-2,433.12	3,333.92	0.00	0.00	0.00	
9,600.00	90.00	313.13	6,412.00	2,347.60	-2,506.10	3,433.92	0.00	0.00	0.00	
9,700.00	90.00	313.13	6,412.00	2,415.97	-2,579.08	3,533.92	0.00	0.00	0.00	
9,800.00	90.00	313.13	6,412.00	2,484.33	-2,652.06	3,633.92	0.00	0.00	0.00	
9,900.00	90.00	313.13	6,412.00	2,552.70	-2,725.05	3,733.92	0.00	0.00	0.00	
10,000.00	90.00	313.13	6,412.00	2,621.06	-2,798.03	3,833.92	0.00	0.00	0.00	
10,100.00	90.00	313.13	6,412.00	2,689.43	-2,871.01	3,933.92	0.00	0.00	0.00	
10,200.00	90.00	313.13	6,412.00	2,757.79	-2,943.99	4,033.92	0.00	0.00	0.00	
10,300.00	90.00	313.13	6,412.00	2,826.16	-3,016.97	4,133.92	0.00	0.00	0.00	
10,400.00	90.00	313.13	6,412.00	2,894.52	-3,089.95	4,233.92	0.00	0.00	0.00	
10,500.00	90.00	313.13	6,412.00	2,962.89	-3,162.93	4,333.92	0.00	0.00	0.00	
10,600.00	90.00	313.13	6,412.00	3,031.25	-3,235.91	4,433.92	0.00	0.00	0.00	
10,700.00	90.00	313.13	6,412.00	3,099.62	-3,308.89	4,533.92	0.00	0.00	0.00	
10,800.00	90.00	313.13	6,412.00	3,167.98	-3,381.87	4,633.92	0.00	0.00	0.00	
10,900.00	90.00	313.13	6,412.00	3,236.35	-3,454.85	4,733.92	0.00	0.00	0.00	
11,000.00	90.00	313.13	6,412.00	3,304.71	-3,527.83	4,833.92	0.00	0.00	0.00	
11,100.00	90.00	313.13	6,412.00	3,373.08	-3,600.82	4,933.92	0.00	0.00	0.00	
11,200.00	90.00	313.13	6,412.00	3,441.44	-3,673.80	5,033.92	0.00	0.00	0.00	
11,300.00	90.00	313.13	6,412.00	3,509.81	-3,746.78	5,133.92	0.00	0.00	0.00	
11,400.00	90.00	313.13	6,412.00	3,578.17	-3,819.76	5,233.92	0.00	0.00	0.00	
11,500.00	90.00	313.13	6,412.00	3,646.54	-3,892.74	5,333.92	0.00	0.00	0.00	
11,600.00	90.00	313.13	6,412.00	3,714.90	-3,965.72	5,433.92	0.00	0.00	0.00	
11,700.00	90.00	313.13	6,412.00	3,783.27	-4,038.70	5,533.92	0.00	0.00	0.00	
11,800.00	90.00	313.13	6,412.00	3,851.63	-4,111.68	5,633.92	0.00	0.00	0.00	
11,900.00	90.00	313.13	6,412.00	3,920.00	-4,184.66	5,733.92	0.00	0.00	0.00	
12,000.00	90.00	313.13	6,412.00	3,988.36	-4,257.64	5,833.92	0.00	0.00	0.00	
12,100.00	90.00	313.13	6,412.00	4,056.73	-4,330.62	5,933.92	0.00	0.00	0.00	
12,200.00	90.00	313.13	6,412.00	4,125.09	-4,403.61	6,033.92	0.00	0.00	0.00	
12,300.00	90.00	313.13	6,412.00	4,193.46	-4,476.59	6,133.92	0.00	0.00	0.00	
12,334.49	90.00	313.13	6,412.00	4,217.04	-4,501.76	6,168.41	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										
Nelson 17-44-9-60 - PBHL	0.00	0.00	6,412.00	4,217.04	-4,501.76	1,520,769.22	3,381,171.67	40° 45' 17.2136 N		104° 7' 26.889 W
- plan hits target center										
- Point										

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
5,839.04	5,839.04	0.00	0.00	KOP, 10.00°/100' Build	
6,739.04	6,412.00	391.70	-418.15	Begin 90.00° Lateral	
12,334.49	6,412.00	4,217.04	-4,501.76	PBHL	