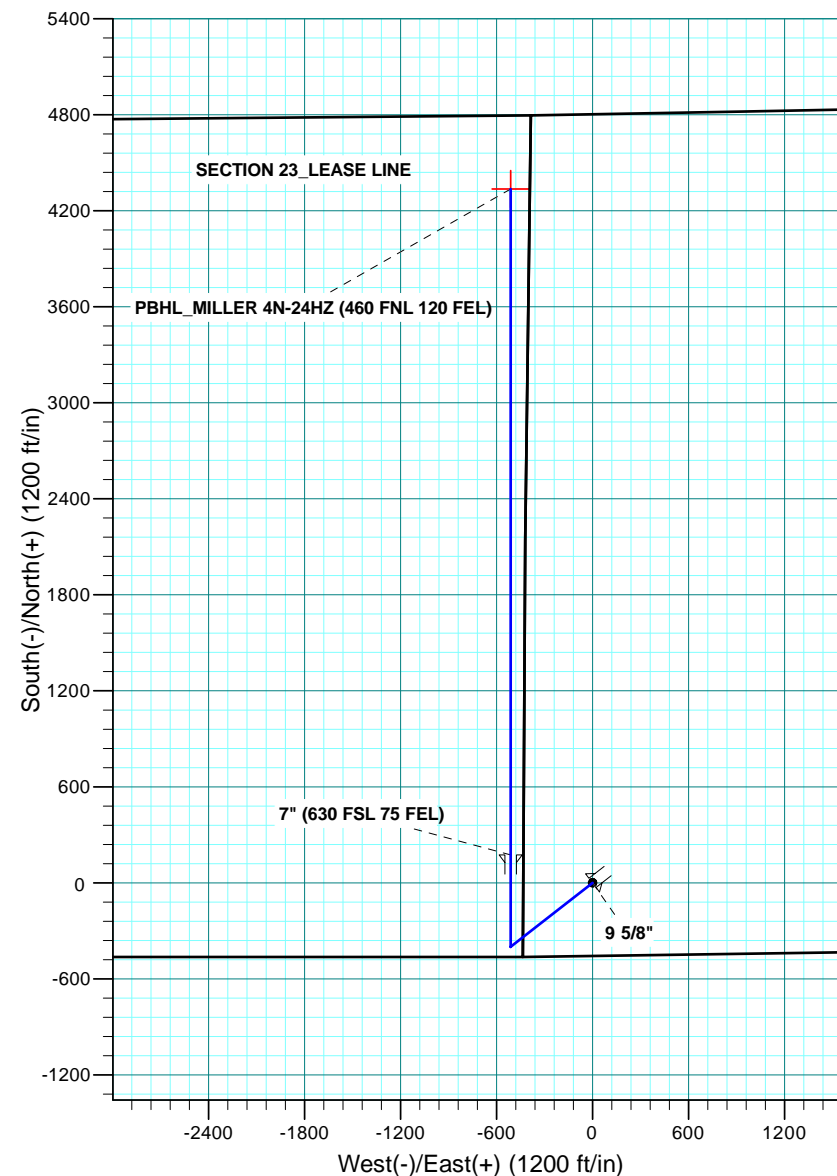
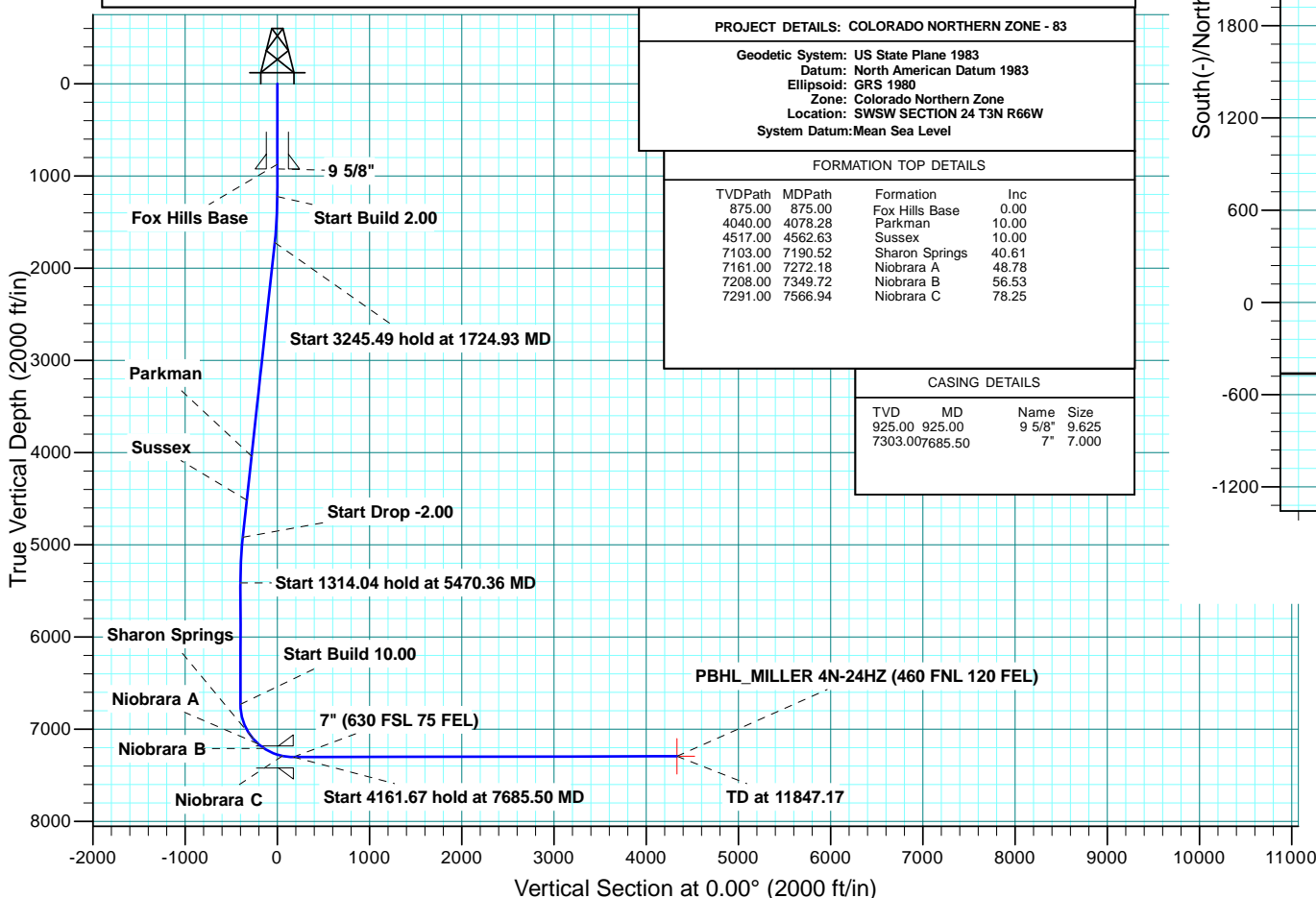


WELL DETAILS: MILLER 4N-24HZ										
GL 5016 & KB 17 @ 5033.00ft (ASSUMED)										
		+N/-S 0.00	+E/-W 0.00	Northing 1318352.95	Easting 3214126.42	Latitude 40.2047350	Longitude -104.7333710			
SECTION DETAILS										
MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target	Annotation
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
1225.00	0.00	0.00	1225.00	0.00	0.00	0.00	0.00	0.00		Start Build 2.00
1724.93	10.00	232.06	1722.40	-26.75	-34.31	2.00	232.06	-26.75		Start 3245.49 hold at 1724.93 MD
4970.43	10.00	232.06	4918.60	-373.25	-478.70	0.00	0.00	-373.25		Start Drop -2.00
5470.36	0.00	0.00	5416.00	-400.00	-513.01	2.00	180.00	-400.00		Start 1314.04 hold at 5470.36 MD
6784.40	0.00	0.00	6730.04	-400.00	-513.01	0.00	0.00	-400.00		Start Build 10.00
7685.50	90.11	0.00	7303.00	174.06	-513.01	10.00	0.00	174.06		Start 4161.67 hold at 7685.50 MD
11847.17	90.11	0.00	7295.00	4335.72	-513.01	0.00	0.00	4335.72	PBHL_MILLER 4N-24HZ	
DESIGN TARGET DETAILS										
Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape		
PBHL	7295.00	4335.72	-513.01	1322684.07	3213575.95	40.2166370	-104.7352080	Point		

PROJECT DETAILS: COLORADO NORTHERN ZONE - 83			
Geodetic System: US State Plane 1983			
Datum: North American Datum 1983			
Ellipsoid: GRS 1980			
Zone: Colorado Northern Zone			
Location: SWSW SECTION 24 T3N R66W			
System Datum: Mean Sea Level			
FORMATION TOP DETAILS			
TVDPATH	MDPATH	Formation	Inc
875.00	875.00	Fox Hills Base	0.00
4040.00	4078.28	Parkman	10.00
4517.00	4562.63	Sussex	10.00
7103.00	7190.52	Sharon Springs	40.61
7161.00	7272.18	Niobrara A	48.78
7208.00	7349.72	Niobrara B	56.53
7291.00	7566.94	Niobrara C	78.25
CASING DETAILS			
TVD	MD	Name	Size
925.00	925.00	9 5/8"	9.625
7303.00	7685.50	7"	7.000





**Scientific Drilling**

# **US ROCKIES REGION PLANNING**

**COLORADO NORTHERN ZONE - 83**

**MILLER 13-24HZ PAD**

**MILLER 4N-24HZ**

**OH**

**Plan: PLAN #1 PRELIMINARY**

## **Standard Planning Report**

**10 October, 2013**

<b>Database:</b>	Denver Sales Office	<b>Local Co-ordinate Reference:</b>	Well MILLER 4N-24HZ
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	GL 5016 & KB 17 @ 5033.00ft (ASSUMED)
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>MD Reference:</b>	GL 5016 & KB 17 @ 5033.00ft (ASSUMED)
<b>Site:</b>	MILLER 13-24HZ PAD	<b>North Reference:</b>	True
<b>Well:</b>	MILLER 4N-24HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	PLAN #1 PRELIMINARY		

<b>Project</b>	COLORADO NORTHERN ZONE - 83, KERR MCGEE OIL & GAS ONSHORE LP		
<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		

Site	MILLER 13-24HZ PAD, SWSW SECTION 24 T3N R66W				
Site Position:		Northing:	1,318,293.21 usft	Latitude:	40.2045710
From:	Lat/Long	Easting:	3,214,126.94 usft	Longitude:	-104.7333710
Position Uncertainty:	0.00 ft	Slot Radius:	13.200 in	Grid Convergence:	0.50

Well	MILLER 4N-24HZ					
Well Position	+N/-S	59.74 ft	Northing:	1,318,352.95 usft	Latitude:	40.2047350
	+E/-W	0.00 ft	Easting:	3,214,126.42 usft	Longitude:	-104.7333710
Position Uncertainty		0.00 ft	Wellhead Elevation:	0.00 ft	Ground Level:	5,016.00 ft

<b>Wellbore</b>	OH				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	BGGM2013	10/9/2013	8.55	66.81	52,714

<b>Design</b>	PLAN #1 PRELIMINARY			
<b>Audit Notes:</b>				
<b>Version:</b>	<b>Phase:</b>	PLAN	<b>Tie On Depth:</b>	0.00
<b>Vertical Section:</b>	<b>Depth From (TVD) (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Direction (°)</b>
	0.00	0.00	0.00	0.00

<b>Plan Sections</b>										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	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	
1,225.00	0.00	0.00	1,225.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,724.93	10.00	232.06	1,722.40	-26.75	-34.31	2.00	2.00	0.00	232.06	
4,970.43	10.00	232.06	4,918.60	-373.25	-478.70	0.00	0.00	0.00	0.00	
5,470.36	0.00	0.00	5,416.00	-400.00	-513.01	2.00	-2.00	0.00	180.00	
6,784.40	0.00	0.00	6,730.04	-400.00	-513.01	0.00	0.00	0.00	0.00	
7,685.50	90.11	0.00	7,303.00	174.06	-513.01	10.00	10.00	0.00	0.00	
11,847.17	90.11	0.00	7,295.00	4,335.72	-513.01	0.00	0.00	0.00	0.00	PBHL_MILLER 4N-24

<b>Database:</b>	Denver Sales Office	<b>Local Co-ordinate Reference:</b>	Well MILLER 4N-24HZ
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	GL 5016 & KB 17 @ 5033.00ft (ASSUMED)
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>MD Reference:</b>	GL 5016 & KB 17 @ 5033.00ft (ASSUMED)
<b>Site:</b>	MILLER 13-24HZ PAD	<b>North Reference:</b>	True
<b>Well:</b>	MILLER 4N-24HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	PLAN #1 PRELIMINARY		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	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
875.00	0.00	0.00	875.00	0.00	0.00	0.00	0.00	0.00	0.00
Fox Hills Base									
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	0.00
925.00	0.00	0.00	925.00	0.00	0.00	0.00	0.00	0.00	0.00
9 5/8"									
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
1,225.00	0.00	0.00	1,225.00	0.00	0.00	0.00	0.00	0.00	0.00
Start Build 2.00									
1,300.00	1.50	232.06	1,299.99	-0.60	-0.77	-0.60	2.00	2.00	0.00
1,400.00	3.50	232.06	1,399.89	-3.29	-4.21	-3.29	2.00	2.00	0.00
1,500.00	5.50	232.06	1,499.58	-8.11	-10.40	-8.11	2.00	2.00	0.00
1,600.00	7.50	232.06	1,598.93	-15.07	-19.33	-15.07	2.00	2.00	0.00
1,700.00	9.50	232.06	1,697.83	-24.16	-30.98	-24.16	2.00	2.00	0.00
1,724.93	10.00	232.06	1,722.40	-26.75	-34.31	-26.75	2.00	2.00	0.00
Start 3245.49 hold at 1724.93 MD									
1,800.00	10.00	232.06	1,796.33	-34.77	-44.59	-34.77	0.00	0.00	0.00
1,900.00	10.00	232.06	1,894.81	-45.44	-58.28	-45.44	0.00	0.00	0.00
2,000.00	10.00	232.06	1,993.29	-56.12	-71.98	-56.12	0.00	0.00	0.00
2,100.00	10.00	232.06	2,091.77	-66.80	-85.67	-66.80	0.00	0.00	0.00
2,200.00	10.00	232.06	2,190.25	-77.47	-99.36	-77.47	0.00	0.00	0.00
2,300.00	10.00	232.06	2,288.73	-88.15	-113.05	-88.15	0.00	0.00	0.00
2,400.00	10.00	232.06	2,387.21	-98.83	-126.75	-98.83	0.00	0.00	0.00
2,500.00	10.00	232.06	2,485.69	-109.50	-140.44	-109.50	0.00	0.00	0.00
2,600.00	10.00	232.06	2,584.18	-120.18	-154.13	-120.18	0.00	0.00	0.00
2,700.00	10.00	232.06	2,682.66	-130.85	-167.82	-130.85	0.00	0.00	0.00
2,800.00	10.00	232.06	2,781.14	-141.53	-181.51	-141.53	0.00	0.00	0.00
2,900.00	10.00	232.06	2,879.62	-152.21	-195.21	-152.21	0.00	0.00	0.00
3,000.00	10.00	232.06	2,978.10	-162.88	-208.90	-162.88	0.00	0.00	0.00
3,100.00	10.00	232.06	3,076.58	-173.56	-222.59	-173.56	0.00	0.00	0.00
3,200.00	10.00	232.06	3,175.06	-184.23	-236.28	-184.23	0.00	0.00	0.00
3,300.00	10.00	232.06	3,273.54	-194.91	-249.98	-194.91	0.00	0.00	0.00
3,400.00	10.00	232.06	3,372.03	-205.59	-263.67	-205.59	0.00	0.00	0.00
3,500.00	10.00	232.06	3,470.51	-216.26	-277.36	-216.26	0.00	0.00	0.00
3,600.00	10.00	232.06	3,568.99	-226.94	-291.05	-226.94	0.00	0.00	0.00
3,700.00	10.00	232.06	3,667.47	-237.61	-304.74	-237.61	0.00	0.00	0.00
3,800.00	10.00	232.06	3,765.95	-248.29	-318.44	-248.29	0.00	0.00	0.00
3,900.00	10.00	232.06	3,864.43	-258.97	-332.13	-258.97	0.00	0.00	0.00
4,000.00	10.00	232.06	3,962.91	-269.64	-345.82	-269.64	0.00	0.00	0.00
4,078.28	10.00	232.06	4,040.00	-278.00	-356.54	-278.00	0.00	0.00	0.00
Parkman									
4,100.00	10.00	232.06	4,061.39	-280.32	-359.51	-280.32	0.00	0.00	0.00
4,200.00	10.00	232.06	4,159.87	-290.99	-373.21	-290.99	0.00	0.00	0.00
4,300.00	10.00	232.06	4,258.36	-301.67	-386.90	-301.67	0.00	0.00	0.00

<b>Database:</b>	Denver Sales Office	<b>Local Co-ordinate Reference:</b>	Well MILLER 4N-24HZ
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	GL 5016 & KB 17 @ 5033.00ft (ASSUMED)
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>MD Reference:</b>	GL 5016 & KB 17 @ 5033.00ft (ASSUMED)
<b>Site:</b>	MILLER 13-24HZ PAD	<b>North Reference:</b>	True
<b>Well:</b>	MILLER 4N-24HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	PLAN #1 PRELIMINARY		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
4,400.00	10.00	232.06	4,356.84	-312.35	-400.59	-312.35	0.00	0.00	0.00
4,500.00	10.00	232.06	4,455.32	-323.02	-414.28	-323.02	0.00	0.00	0.00
4,562.63	10.00	232.06	4,517.00	-329.71	-422.86	-329.71	0.00	0.00	0.00
<b>Sussex</b>									
4,600.00	10.00	232.06	4,553.80	-333.70	-427.98	-333.70	0.00	0.00	0.00
4,700.00	10.00	232.06	4,652.28	-344.37	-441.67	-344.37	0.00	0.00	0.00
4,800.00	10.00	232.06	4,750.76	-355.05	-455.36	-355.05	0.00	0.00	0.00
4,900.00	10.00	232.06	4,849.24	-365.73	-469.05	-365.73	0.00	0.00	0.00
4,970.43	10.00	232.06	4,918.60	-373.25	-478.70	-373.25	0.00	0.00	0.00
<b>Start Drop -2.00</b>									
5,000.00	9.41	232.06	4,947.75	-376.31	-482.63	-376.31	2.00	-2.00	0.00
5,100.00	7.41	232.06	5,046.67	-385.30	-494.16	-385.30	2.00	-2.00	0.00
5,200.00	5.41	232.06	5,146.04	-392.16	-502.96	-392.16	2.00	-2.00	0.00
5,300.00	3.41	232.06	5,245.74	-396.89	-509.01	-396.89	2.00	-2.00	0.00
5,400.00	1.41	232.06	5,345.65	-399.47	-512.33	-399.47	2.00	-2.00	0.00
5,470.36	0.00	0.00	5,416.00	-400.00	-513.01	-400.00	2.00	-2.00	0.00
<b>Start 1314.04 hold at 5470.36 MD</b>									
5,500.00	0.00	0.00	5,445.64	-400.00	-513.01	-400.00	0.00	0.00	0.00
5,600.00	0.00	0.00	5,545.64	-400.00	-513.01	-400.00	0.00	0.00	0.00
5,700.00	0.00	0.00	5,645.64	-400.00	-513.01	-400.00	0.00	0.00	0.00
5,800.00	0.00	0.00	5,745.64	-400.00	-513.01	-400.00	0.00	0.00	0.00
5,900.00	0.00	0.00	5,845.64	-400.00	-513.01	-400.00	0.00	0.00	0.00
6,000.00	0.00	0.00	5,945.64	-400.00	-513.01	-400.00	0.00	0.00	0.00
6,100.00	0.00	0.00	6,045.64	-400.00	-513.01	-400.00	0.00	0.00	0.00
6,200.00	0.00	0.00	6,145.64	-400.00	-513.01	-400.00	0.00	0.00	0.00
6,300.00	0.00	0.00	6,245.64	-400.00	-513.01	-400.00	0.00	0.00	0.00
6,400.00	0.00	0.00	6,345.64	-400.00	-513.01	-400.00	0.00	0.00	0.00
6,500.00	0.00	0.00	6,445.64	-400.00	-513.01	-400.00	0.00	0.00	0.00
6,600.00	0.00	0.00	6,545.64	-400.00	-513.01	-400.00	0.00	0.00	0.00
6,700.00	0.00	0.00	6,645.64	-400.00	-513.01	-400.00	0.00	0.00	0.00
6,784.40	0.00	0.00	6,730.04	-400.00	-513.01	-400.00	0.00	0.00	0.00
<b>Start Build 10.00</b>									
6,800.00	1.56	0.00	6,745.64	-399.79	-513.01	-399.79	10.00	10.00	0.00
6,900.00	11.56	0.00	6,844.86	-388.38	-513.01	-388.38	10.00	10.00	0.00
7,000.00	21.56	0.00	6,940.59	-359.91	-513.01	-359.91	10.00	10.00	0.00
7,100.00	31.56	0.00	7,029.92	-315.26	-513.01	-315.26	10.00	10.00	0.00
7,190.52	40.61	0.00	7,103.00	-261.99	-513.01	-261.99	10.00	10.00	0.00
<b>Sharon Springs</b>									
7,200.00	41.56	0.00	7,110.14	-255.76	-513.01	-255.76	10.00	10.00	0.00
7,272.18	48.78	0.00	7,161.00	-204.61	-513.01	-204.61	10.00	10.00	0.00
<b>Niobrara A</b>									
7,300.00	51.56	0.00	7,178.81	-183.25	-513.01	-183.25	10.00	10.00	0.00
7,349.72	56.53	0.00	7,208.00	-143.01	-513.01	-143.01	10.00	10.00	0.00
<b>Niobrara B</b>									
7,400.00	61.56	0.00	7,233.85	-99.91	-513.01	-99.91	10.00	10.00	0.00
7,500.00	71.56	0.00	7,273.58	-8.28	-513.01	-8.28	10.00	10.00	0.00
7,566.94	78.25	0.00	7,291.00	56.31	-513.01	56.31	10.00	10.00	0.00
<b>Niobrara C</b>									
7,600.00	81.56	0.00	7,296.79	88.86	-513.01	88.86	10.00	10.00	0.00
7,685.50	90.11	0.00	7,303.00	174.06	-513.01	174.06	10.00	10.00	0.00
<b>Start 4161.67 hold at 7685.50 MD - 7" (630 FSL 75 FEL)</b>									
7,700.00	90.11	0.00	7,302.97	188.56	-513.01	188.56	0.00	0.00	0.00
7,800.00	90.11	0.00	7,302.78	288.56	-513.01	288.56	0.00	0.00	0.00

<b>Database:</b>	Denver Sales Office	<b>Local Co-ordinate Reference:</b>	Well MILLER 4N-24HZ
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	GL 5016 & KB 17 @ 5033.00ft (ASSUMED)
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>MD Reference:</b>	GL 5016 & KB 17 @ 5033.00ft (ASSUMED)
<b>Site:</b>	MILLER 13-24HZ PAD	<b>North Reference:</b>	True
<b>Well:</b>	MILLER 4N-24HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	PLAN #1 PRELIMINARY		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
7,900.00	90.11	0.00	7,302.59	388.56	-513.01	388.56	0.00	0.00	0.00
8,000.00	90.11	0.00	7,302.39	488.56	-513.01	488.56	0.00	0.00	0.00
8,100.00	90.11	0.00	7,302.20	588.56	-513.01	588.56	0.00	0.00	0.00
8,200.00	90.11	0.00	7,302.01	688.56	-513.01	688.56	0.00	0.00	0.00
8,300.00	90.11	0.00	7,301.82	788.56	-513.01	788.56	0.00	0.00	0.00
8,400.00	90.11	0.00	7,301.62	888.56	-513.01	888.56	0.00	0.00	0.00
8,500.00	90.11	0.00	7,301.43	988.56	-513.01	988.56	0.00	0.00	0.00
8,600.00	90.11	0.00	7,301.24	1,088.56	-513.01	1,088.56	0.00	0.00	0.00
8,700.00	90.11	0.00	7,301.05	1,188.55	-513.01	1,188.55	0.00	0.00	0.00
8,800.00	90.11	0.00	7,300.86	1,288.55	-513.01	1,288.55	0.00	0.00	0.00
8,900.00	90.11	0.00	7,300.66	1,388.55	-513.01	1,388.55	0.00	0.00	0.00
9,000.00	90.11	0.00	7,300.47	1,488.55	-513.01	1,488.55	0.00	0.00	0.00
9,100.00	90.11	0.00	7,300.28	1,588.55	-513.01	1,588.55	0.00	0.00	0.00
9,200.00	90.11	0.00	7,300.09	1,688.55	-513.01	1,688.55	0.00	0.00	0.00
9,300.00	90.11	0.00	7,299.90	1,788.55	-513.01	1,788.55	0.00	0.00	0.00
9,400.00	90.11	0.00	7,299.70	1,888.55	-513.01	1,888.55	0.00	0.00	0.00
9,500.00	90.11	0.00	7,299.51	1,988.55	-513.01	1,988.55	0.00	0.00	0.00
9,600.00	90.11	0.00	7,299.32	2,088.55	-513.01	2,088.55	0.00	0.00	0.00
9,700.00	90.11	0.00	7,299.13	2,188.55	-513.01	2,188.55	0.00	0.00	0.00
9,800.00	90.11	0.00	7,298.93	2,288.55	-513.01	2,288.55	0.00	0.00	0.00
9,900.00	90.11	0.00	7,298.74	2,388.55	-513.01	2,388.55	0.00	0.00	0.00
10,000.00	90.11	0.00	7,298.55	2,488.55	-513.01	2,488.55	0.00	0.00	0.00
10,100.00	90.11	0.00	7,298.36	2,588.55	-513.01	2,588.55	0.00	0.00	0.00
10,200.00	90.11	0.00	7,298.17	2,688.55	-513.01	2,688.55	0.00	0.00	0.00
10,300.00	90.11	0.00	7,297.97	2,788.55	-513.01	2,788.55	0.00	0.00	0.00
10,400.00	90.11	0.00	7,297.78	2,888.55	-513.01	2,888.55	0.00	0.00	0.00
10,500.00	90.11	0.00	7,297.59	2,988.55	-513.01	2,988.55	0.00	0.00	0.00
10,600.00	90.11	0.00	7,297.40	3,088.55	-513.01	3,088.55	0.00	0.00	0.00
10,700.00	90.11	0.00	7,297.20	3,188.55	-513.01	3,188.55	0.00	0.00	0.00
10,800.00	90.11	0.00	7,297.01	3,288.55	-513.01	3,288.55	0.00	0.00	0.00
10,900.00	90.11	0.00	7,296.82	3,388.55	-513.01	3,388.55	0.00	0.00	0.00
11,000.00	90.11	0.00	7,296.63	3,488.55	-513.01	3,488.55	0.00	0.00	0.00
11,100.00	90.11	0.00	7,296.44	3,588.55	-513.01	3,588.55	0.00	0.00	0.00
11,200.00	90.11	0.00	7,296.24	3,688.55	-513.01	3,688.55	0.00	0.00	0.00
11,300.00	90.11	0.00	7,296.05	3,788.55	-513.01	3,788.55	0.00	0.00	0.00
11,400.00	90.11	0.00	7,295.86	3,888.55	-513.01	3,888.55	0.00	0.00	0.00
11,500.00	90.11	0.00	7,295.67	3,988.55	-513.01	3,988.55	0.00	0.00	0.00
11,600.00	90.11	0.00	7,295.48	4,088.55	-513.01	4,088.55	0.00	0.00	0.00
11,700.00	90.11	0.00	7,295.28	4,188.55	-513.01	4,188.55	0.00	0.00	0.00
11,800.00	90.11	0.00	7,295.09	4,288.55	-513.01	4,288.55	0.00	0.00	0.00
11,847.17	90.11	0.00	7,295.00	4,335.72	-513.01	4,335.72	0.00	0.00	0.00
TD at 11847.17 - PBHL_MILLER 4N-24HZ (460 FNL 120 FEL)									

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
- hit/miss target									
- Shape									
PBHL_MILLER 4N-24HZ	0.00	0.00	7,295.00	4,335.72	-513.01	1,322,684.06	3,213,575.95	40.2166370	-104.7352080
- plan hits target center									
- Point									

<b>Database:</b>	Denver Sales Office	<b>Local Co-ordinate Reference:</b>	Well MILLER 4N-24HZ
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	GL 5016 & KB 17 @ 5033.00ft (ASSUMED)
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>MD Reference:</b>	GL 5016 & KB 17 @ 5033.00ft (ASSUMED)
<b>Site:</b>	MILLER 13-24HZ PAD	<b>North Reference:</b>	True
<b>Well:</b>	MILLER 4N-24HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	PLAN #1 PRELIMINARY		

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)	
925.00	925.00	9 5/8"	9.625	12.250	
7,685.50	7,303.00	7" (630 FSL 75 FEL)	7.000	7.500	

Formations					
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
875.00	875.00	Fox Hills Base			
4,078.28	4,040.00	Parkman			
4,562.63	4,517.00	Sussex			
7,190.52	7,103.00	Sharon Springs			
7,272.18	7,161.00	Niobrara A			
7,349.72	7,208.00	Niobrara B			
7,566.94	7,291.00	Niobrara C			

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates			
		+N/-S (ft)	+E/-W (ft)	Comment	
1,225.00	1,225.00	0.00	0.00	Start Build 2.00	
1,724.93	1,722.40	-26.75	-34.31	Start 3245.49 hold at 1724.93 MD	
4,970.43	4,918.60	-373.25	-478.70	Start Drop -2.00	
5,470.36	5,416.00	-400.00	-513.01	Start 1314.04 hold at 5470.36 MD	
6,784.40	6,730.04	-400.00	-513.01	Start Build 10.00	
7,685.50	7,303.00	174.06	-513.01	Start 4161.67 hold at 7685.50 MD	
11,847.17	7,295.00	4,335.72	-513.01	TD at 11847.17	