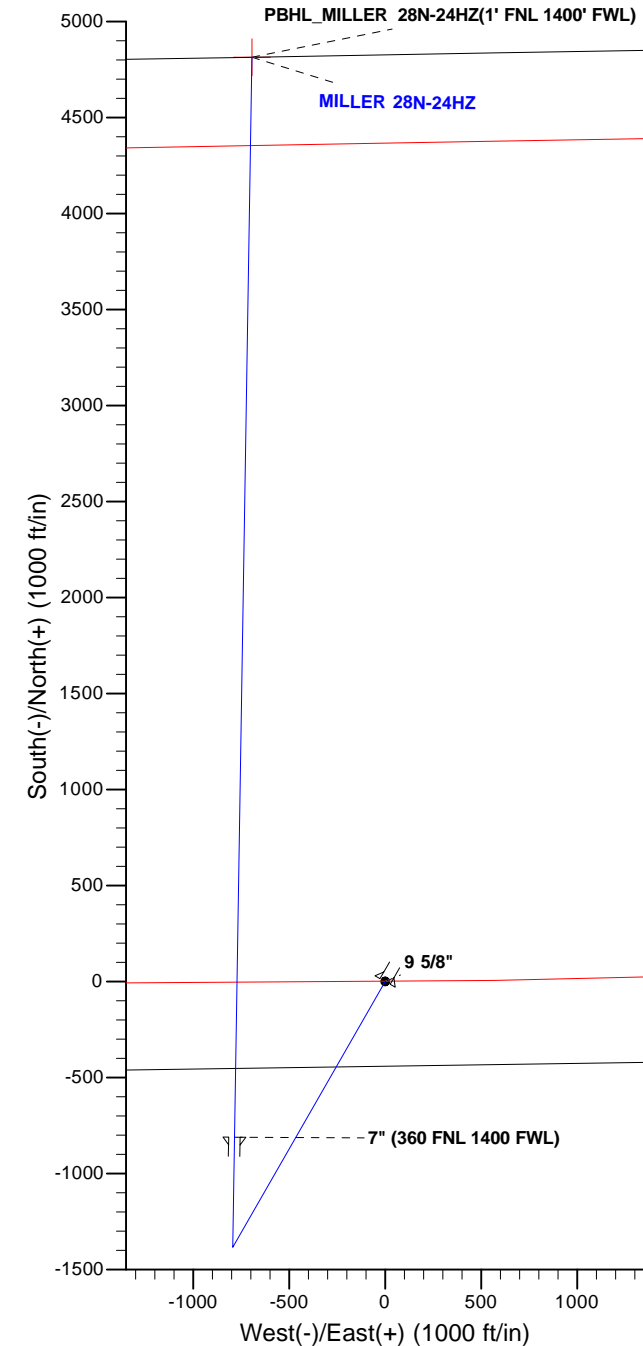
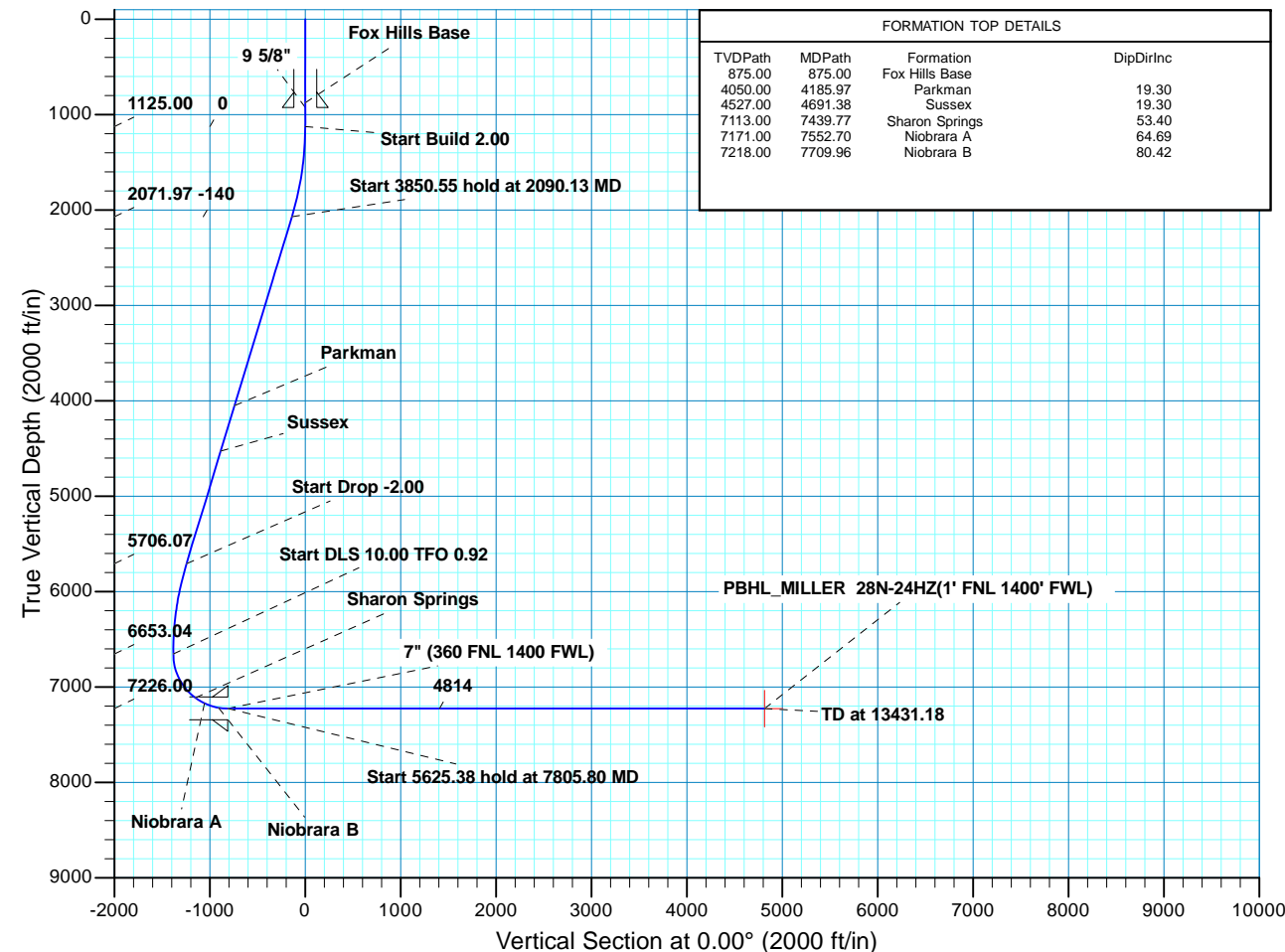


WELL DETAILS: MILLER 28N-24HZ																							
GL 5029 & 17 @ 5046.00ft (ASSUMED)																							
+N/-S 0.00		+E/-W 0.00		Northing 1318375.42		Easting 3215834.01		Latitude 40.2047560		Longitude -104.7272570													
SECTION DETAILS																							
MD		Inc		Azi		TVD		+N/-S		+E/-W		Dleg		TFace		VSect		Target					
0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00							
1125.00		0.00		0.00		1125.00		0.00		0.00		0.00		0.00		0.00							
2090.13		19.30		209.84		2071.97		-139.69		-80.12		2.00		209.84		-139.69							
5940.67		19.30		209.84		5706.07		-1243.81		-713.38		0.00		0.00		-1243.81							
6905.80		0.00		0.00		6653.04		-1383.50		-793.50		2.00		180.00		-1383.50							
7805.80		90.00		0.92		7226.00		-810.62		-784.30		10.00		0.92		-810.62							
13431.18		90.00		0.92		7226.00		4814.04		-693.96		0.00		0.00		4814.04		PBHL_MILLER 28N-24HZ(1' FNL 1400' FWL)					
DESIGN TARGET DETAILS										CASING DET													
Name		TVD		+N/-S		+E/-W		Northing		Easting		Latitude		Longitude		Shape		TVD		MD			
PBHL		7226.00		4814.04		-693.96		1323183.21		3215098.13		40.2179710		-104.7297420		Point		925.00		925.00			
- plan hits target center																				7226.00		7805.80	





**Scientific Drilling**

# **US ROCKIES REGION PLANNING**

**COLORADO NORTHERN ZONE - 83**

**MILLER 14-24HZ**

**MILLER 28N-24HZ**

**OH**

**Plan: PLAN #1 PRELIMINARY**

## **Standard Planning Report**

**04 April, 2014**

<b>Database:</b>	EDM 5000.1 Single User Db	<b>Local Co-ordinate Reference:</b>	Well MILLER 28N-24HZ
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	GL 5029 & 17 @ 5046.00ft (ASSUMED)
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>MD Reference:</b>	GL 5029 & 17 @ 5046.00ft (ASSUMED)
<b>Site:</b>	MILLER 14-24HZ	<b>North Reference:</b>	True
<b>Well:</b>	MILLER 28N-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 14-24HZ, SESW SECTION 24 T3N R66W				
Site Position:		Northing:	1,318,374.53 usft	Latitude:	40.2047550
From:	Lat/Long	Easting:	3,215,774.24 usft	Longitude:	-104.7274710
Position Uncertainty:	0.00 ft	Slot Radius:	13.200 in	Grid Convergence:	0.50

Well	MILLER 28N-24HZ, 458' FSL 2141' FWL					
Well Position	+N/-S	0.36 ft	Northing:	1,318,375.42 usft	Latitude:	40.2047560
	+E/-W	59.77 ft	Easting:	3,215,834.01 usft	Longitude:	-104.7272570
Position Uncertainty		0.00 ft	Wellhead Elevation:	0.00 ft	Ground Level:	5,029.00 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	10/09/13	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 (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,125.00	0.00	0.00	1,125.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,090.13	19.30	209.84	2,071.97	-139.69	-80.12	2.00	2.00	0.00	209.84	
5,940.67	19.30	209.84	5,706.07	-1,243.81	-713.38	0.00	0.00	0.00	0.00	
6,905.80	0.00	0.00	6,653.04	-1,383.50	-793.50	2.00	-2.00	0.00	180.00	
7,805.80	90.00	0.92	7,226.00	-810.62	-784.30	10.00	10.00	0.10	0.92	
13,431.18	90.00	0.92	7,226.00	4,814.04	-693.96	0.00	0.00	0.00	0.00	PBHL_MILLER 28N-

<b>Database:</b>	EDM 5000.1 Single User Db	<b>Local Co-ordinate Reference:</b>	Well MILLER 28N-24HZ
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	GL 5029 & 17 @ 5046.00ft (ASSUMED)
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>MD Reference:</b>	GL 5029 & 17 @ 5046.00ft (ASSUMED)
<b>Site:</b>	MILLER 14-24HZ	<b>North Reference:</b>	True
<b>Well:</b>	MILLER 28N-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 (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
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
1,125.00	0.00	0.00	1,125.00	0.00	0.00	0.00	0.00	0.00	0.00
Start Build 2.00									
1,200.00	1.50	209.84	1,199.99	-0.85	-0.49	-0.85	2.00	2.00	0.00
1,300.00	3.50	209.84	1,299.89	-4.64	-2.66	-4.64	2.00	2.00	0.00
1,400.00	5.50	209.84	1,399.58	-11.44	-6.56	-11.44	2.00	2.00	0.00
1,500.00	7.50	209.84	1,498.93	-21.26	-12.19	-21.26	2.00	2.00	0.00
1,600.00	9.50	209.84	1,597.83	-34.08	-19.55	-34.08	2.00	2.00	0.00
1,700.00	11.50	209.84	1,696.15	-49.89	-28.61	-49.89	2.00	2.00	0.00
1,800.00	13.50	209.84	1,793.77	-68.66	-39.38	-68.66	2.00	2.00	0.00
1,900.00	15.50	209.84	1,890.58	-90.38	-51.84	-90.38	2.00	2.00	0.00
2,000.00	17.50	209.84	1,986.46	-115.02	-65.97	-115.02	2.00	2.00	0.00
2,090.13	19.30	209.84	2,071.97	-139.69	-80.12	-139.69	2.00	2.00	0.00
Start 3850.55 hold at 2090.13 MD									
2,100.00	19.30	209.84	2,081.29	-142.53	-81.74	-142.53	0.00	0.00	0.00
2,200.00	19.30	209.84	2,175.67	-171.20	-98.19	-171.20	0.00	0.00	0.00
2,300.00	19.30	209.84	2,270.05	-199.87	-114.64	-199.87	0.00	0.00	0.00
2,400.00	19.30	209.84	2,364.43	-228.55	-131.08	-228.55	0.00	0.00	0.00
2,500.00	19.30	209.84	2,458.81	-257.22	-147.53	-257.22	0.00	0.00	0.00
2,600.00	19.30	209.84	2,553.19	-285.90	-163.97	-285.90	0.00	0.00	0.00
2,700.00	19.30	209.84	2,647.56	-314.57	-180.42	-314.57	0.00	0.00	0.00
2,800.00	19.30	209.84	2,741.94	-343.24	-196.87	-343.24	0.00	0.00	0.00
2,900.00	19.30	209.84	2,836.32	-371.92	-213.31	-371.92	0.00	0.00	0.00
3,000.00	19.30	209.84	2,930.70	-400.59	-229.76	-400.59	0.00	0.00	0.00
3,100.00	19.30	209.84	3,025.08	-429.27	-246.20	-429.27	0.00	0.00	0.00
3,200.00	19.30	209.84	3,119.46	-457.94	-262.65	-457.94	0.00	0.00	0.00
3,300.00	19.30	209.84	3,213.84	-486.62	-279.10	-486.62	0.00	0.00	0.00
3,400.00	19.30	209.84	3,308.21	-515.29	-295.54	-515.29	0.00	0.00	0.00
3,500.00	19.30	209.84	3,402.59	-543.96	-311.99	-543.96	0.00	0.00	0.00
3,600.00	19.30	209.84	3,496.97	-572.64	-328.43	-572.64	0.00	0.00	0.00
3,700.00	19.30	209.84	3,591.35	-601.31	-344.88	-601.31	0.00	0.00	0.00
3,800.00	19.30	209.84	3,685.73	-629.99	-361.33	-629.99	0.00	0.00	0.00
3,900.00	19.30	209.84	3,780.11	-658.66	-377.77	-658.66	0.00	0.00	0.00
4,000.00	19.30	209.84	3,874.49	-687.33	-394.22	-687.33	0.00	0.00	0.00
4,100.00	19.30	209.84	3,968.86	-716.01	-410.66	-716.01	0.00	0.00	0.00
4,185.97	19.30	209.84	4,050.00	-740.66	-424.80	-740.66	0.00	0.00	0.00
Parkman									
4,200.00	19.30	209.84	4,063.24	-744.68	-427.11	-744.68	0.00	0.00	0.00
4,300.00	19.30	209.84	4,157.62	-773.36	-443.56	-773.36	0.00	0.00	0.00

<b>Database:</b>	EDM 5000.1 Single User Db	<b>Local Co-ordinate Reference:</b>	Well MILLER 28N-24HZ
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	GL 5029 & 17 @ 5046.00ft (ASSUMED)
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>MD Reference:</b>	GL 5029 & 17 @ 5046.00ft (ASSUMED)
<b>Site:</b>	MILLER 14-24HZ	<b>North Reference:</b>	True
<b>Well:</b>	MILLER 28N-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 (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
4,400.00	19.30	209.84	4,252.00	-802.03	-460.00	-802.03	0.00	0.00	0.00
4,500.00	19.30	209.84	4,346.38	-830.70	-476.45	-830.70	0.00	0.00	0.00
4,600.00	19.30	209.84	4,440.76	-859.38	-492.89	-859.38	0.00	0.00	0.00
4,691.38	19.30	209.84	4,527.00	-885.58	-507.92	-885.58	0.00	0.00	0.00
<b>Sussex</b>									
4,700.00	19.30	209.84	4,535.14	-888.05	-509.34	-888.05	0.00	0.00	0.00
4,800.00	19.30	209.84	4,629.51	-916.73	-525.78	-916.73	0.00	0.00	0.00
4,900.00	19.30	209.84	4,723.89	-945.40	-542.23	-945.40	0.00	0.00	0.00
5,000.00	19.30	209.84	4,818.27	-974.08	-558.68	-974.08	0.00	0.00	0.00
5,100.00	19.30	209.84	4,912.65	-1,002.75	-575.12	-1,002.75	0.00	0.00	0.00
5,200.00	19.30	209.84	5,007.03	-1,031.42	-591.57	-1,031.42	0.00	0.00	0.00
5,300.00	19.30	209.84	5,101.41	-1,060.10	-608.01	-1,060.10	0.00	0.00	0.00
5,400.00	19.30	209.84	5,195.79	-1,088.77	-624.46	-1,088.77	0.00	0.00	0.00
5,500.00	19.30	209.84	5,290.17	-1,117.45	-640.91	-1,117.45	0.00	0.00	0.00
5,600.00	19.30	209.84	5,384.54	-1,146.12	-657.35	-1,146.12	0.00	0.00	0.00
5,700.00	19.30	209.84	5,478.92	-1,174.79	-673.80	-1,174.79	0.00	0.00	0.00
5,800.00	19.30	209.84	5,573.30	-1,203.47	-690.24	-1,203.47	0.00	0.00	0.00
5,900.00	19.30	209.84	5,667.68	-1,232.14	-706.69	-1,232.14	0.00	0.00	0.00
5,940.67	19.30	209.84	5,706.07	-1,243.81	-713.38	-1,243.81	0.00	0.00	0.00
<b>Start Drop -2.00</b>									
6,000.00	18.12	209.84	5,762.26	-1,260.31	-722.85	-1,260.31	2.00	-2.00	0.00
6,100.00	16.12	209.84	5,857.82	-1,285.84	-737.49	-1,285.84	2.00	-2.00	0.00
6,200.00	14.12	209.84	5,954.36	-1,308.46	-750.46	-1,308.46	2.00	-2.00	0.00
6,300.00	12.12	209.84	6,051.75	-1,328.14	-761.75	-1,328.14	2.00	-2.00	0.00
6,400.00	10.12	209.84	6,149.86	-1,344.87	-771.34	-1,344.87	2.00	-2.00	0.00
6,500.00	8.12	209.84	6,248.60	-1,358.61	-779.22	-1,358.61	2.00	-2.00	0.00
6,600.00	6.12	209.84	6,347.82	-1,369.36	-785.39	-1,369.36	2.00	-2.00	0.00
6,700.00	4.12	209.84	6,447.42	-1,377.09	-789.82	-1,377.09	2.00	-2.00	0.00
6,800.00	2.12	209.84	6,547.26	-1,381.81	-792.53	-1,381.81	2.00	-2.00	0.00
6,900.00	0.12	209.84	6,647.24	-1,383.49	-793.50	-1,383.49	2.00	-2.00	0.00
6,905.80	0.00	0.00	6,653.04	-1,383.50	-793.50	-1,383.50	2.00	-2.00	0.00
<b>Start DLS 10.00 TFO 0.92</b>									
7,000.00	9.42	0.92	6,746.82	-1,375.77	-793.38	-1,375.77	10.00	10.00	0.00
7,100.00	19.42	0.92	6,843.54	-1,350.91	-792.98	-1,350.91	10.00	10.00	0.00
7,200.00	29.42	0.92	6,934.48	-1,309.62	-792.31	-1,309.62	10.00	10.00	0.00
7,300.00	39.42	0.92	7,016.87	-1,253.18	-791.41	-1,253.18	10.00	10.00	0.00
7,400.00	49.42	0.92	7,088.20	-1,183.28	-790.28	-1,183.28	10.00	10.00	0.00
7,439.77	53.40	0.92	7,113.00	-1,152.21	-789.79	-1,152.21	10.00	10.00	0.00
<b>Sharon Springs</b>									
7,500.00	59.42	0.92	7,146.31	-1,102.07	-788.98	-1,102.07	10.00	10.00	0.00
7,552.70	64.69	0.92	7,171.00	-1,055.53	-788.23	-1,055.53	10.00	10.00	0.00
<b>Niobrara A</b>									
7,600.00	69.42	0.92	7,189.43	-1,011.99	-787.53	-1,011.99	10.00	10.00	0.00
7,700.00	79.42	0.92	7,216.26	-915.80	-785.99	-915.80	10.00	10.00	0.00
7,709.96	80.42	0.92	7,218.00	-906.00	-785.83	-906.00	10.00	10.00	0.00
<b>Niobrara B</b>									
7,800.00	89.42	0.92	7,225.97	-816.42	-784.39	-816.42	10.00	10.00	0.00
7,805.80	90.00	0.92	7,226.00	-810.62	-784.30	-810.62	10.00	10.00	0.00
<b>Start 5625.38 hold at 7805.80 MD - 7" (360 FNL 1400 FWL)</b>									
7,900.00	90.00	0.92	7,226.00	-716.43	-782.79	-716.43	0.00	0.00	0.00
8,000.00	90.00	0.92	7,226.00	-616.44	-781.18	-616.44	0.00	0.00	0.00
8,100.00	90.00	0.92	7,226.00	-516.45	-779.57	-516.45	0.00	0.00	0.00
8,200.00	90.00	0.92	7,226.00	-416.47	-777.97	-416.47	0.00	0.00	0.00

<b>Database:</b>	EDM 5000.1 Single User Db	<b>Local Co-ordinate Reference:</b>	Well MILLER 28N-24HZ
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	GL 5029 & 17 @ 5046.00ft (ASSUMED)
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>MD Reference:</b>	GL 5029 & 17 @ 5046.00ft (ASSUMED)
<b>Site:</b>	MILLER 14-24HZ	<b>North Reference:</b>	True
<b>Well:</b>	MILLER 28N-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 (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	
8,300.00	90.00	0.92	7,226.00	-316.48	-776.36	-316.48	0.00	0.00	0.00	
8,400.00	90.00	0.92	7,226.00	-216.49	-774.76	-216.49	0.00	0.00	0.00	
8,500.00	90.00	0.92	7,226.00	-116.51	-773.15	-116.51	0.00	0.00	0.00	
8,600.00	90.00	0.92	7,226.00	-16.52	-771.54	-16.52	0.00	0.00	0.00	
8,700.00	90.00	0.92	7,226.00	83.47	-769.94	83.47	0.00	0.00	0.00	
8,800.00	90.00	0.92	7,226.00	183.46	-768.33	183.46	0.00	0.00	0.00	
8,900.00	90.00	0.92	7,226.00	283.44	-766.73	283.44	0.00	0.00	0.00	
9,000.00	90.00	0.92	7,226.00	383.43	-765.12	383.43	0.00	0.00	0.00	
9,100.00	90.00	0.92	7,226.00	483.42	-763.51	483.42	0.00	0.00	0.00	
9,200.00	90.00	0.92	7,226.00	583.40	-761.91	583.40	0.00	0.00	0.00	
9,300.00	90.00	0.92	7,226.00	683.39	-760.30	683.39	0.00	0.00	0.00	
9,400.00	90.00	0.92	7,226.00	783.38	-758.70	783.38	0.00	0.00	0.00	
9,500.00	90.00	0.92	7,226.00	883.37	-757.09	883.37	0.00	0.00	0.00	
9,600.00	90.00	0.92	7,226.00	983.35	-755.48	983.35	0.00	0.00	0.00	
9,700.00	90.00	0.92	7,226.00	1,083.34	-753.88	1,083.34	0.00	0.00	0.00	
9,800.00	90.00	0.92	7,226.00	1,183.33	-752.27	1,183.33	0.00	0.00	0.00	
9,900.00	90.00	0.92	7,226.00	1,283.31	-750.67	1,283.31	0.00	0.00	0.00	
10,000.00	90.00	0.92	7,226.00	1,383.30	-749.06	1,383.30	0.00	0.00	0.00	
10,100.00	90.00	0.92	7,226.00	1,483.29	-747.45	1,483.29	0.00	0.00	0.00	
10,200.00	90.00	0.92	7,226.00	1,583.28	-745.85	1,583.28	0.00	0.00	0.00	
10,300.00	90.00	0.92	7,226.00	1,683.26	-744.24	1,683.26	0.00	0.00	0.00	
10,400.00	90.00	0.92	7,226.00	1,783.25	-742.64	1,783.25	0.00	0.00	0.00	
10,500.00	90.00	0.92	7,226.00	1,883.24	-741.03	1,883.24	0.00	0.00	0.00	
10,600.00	90.00	0.92	7,226.00	1,983.22	-739.43	1,983.22	0.00	0.00	0.00	
10,700.00	90.00	0.92	7,226.00	2,083.21	-737.82	2,083.21	0.00	0.00	0.00	
10,800.00	90.00	0.92	7,226.00	2,183.20	-736.21	2,183.20	0.00	0.00	0.00	
10,900.00	90.00	0.92	7,226.00	2,283.19	-734.61	2,283.19	0.00	0.00	0.00	
11,000.00	90.00	0.92	7,226.00	2,383.17	-733.00	2,383.17	0.00	0.00	0.00	
11,100.00	90.00	0.92	7,226.00	2,483.16	-731.40	2,483.16	0.00	0.00	0.00	
11,200.00	90.00	0.92	7,226.00	2,583.15	-729.79	2,583.15	0.00	0.00	0.00	
11,300.00	90.00	0.92	7,226.00	2,683.13	-728.18	2,683.13	0.00	0.00	0.00	
11,400.00	90.00	0.92	7,226.00	2,783.12	-726.58	2,783.12	0.00	0.00	0.00	
11,500.00	90.00	0.92	7,226.00	2,883.11	-724.97	2,883.11	0.00	0.00	0.00	
11,600.00	90.00	0.92	7,226.00	2,983.09	-723.37	2,983.09	0.00	0.00	0.00	
11,700.00	90.00	0.92	7,226.00	3,083.08	-721.76	3,083.08	0.00	0.00	0.00	
11,800.00	90.00	0.92	7,226.00	3,183.07	-720.15	3,183.07	0.00	0.00	0.00	
11,900.00	90.00	0.92	7,226.00	3,283.06	-718.55	3,283.06	0.00	0.00	0.00	
12,000.00	90.00	0.92	7,226.00	3,383.04	-716.94	3,383.04	0.00	0.00	0.00	
12,100.00	90.00	0.92	7,226.00	3,483.03	-715.34	3,483.03	0.00	0.00	0.00	
12,200.00	90.00	0.92	7,226.00	3,583.02	-713.73	3,583.02	0.00	0.00	0.00	
12,300.00	90.00	0.92	7,226.00	3,683.00	-712.12	3,683.00	0.00	0.00	0.00	
12,400.00	90.00	0.92	7,226.00	3,782.99	-710.52	3,782.99	0.00	0.00	0.00	
12,500.00	90.00	0.92	7,226.00	3,882.98	-708.91	3,882.98	0.00	0.00	0.00	
12,600.00	90.00	0.92	7,226.00	3,982.97	-707.31	3,982.97	0.00	0.00	0.00	
12,700.00	90.00	0.92	7,226.00	4,082.95	-705.70	4,082.95	0.00	0.00	0.00	
12,800.00	90.00	0.92	7,226.00	4,182.94	-704.09	4,182.94	0.00	0.00	0.00	
12,900.00	90.00	0.92	7,226.00	4,282.93	-702.49	4,282.93	0.00	0.00	0.00	
13,000.00	90.00	0.92	7,226.00	4,382.91	-700.88	4,382.91	0.00	0.00	0.00	
13,100.00	90.00	0.92	7,226.00	4,482.90	-699.28	4,482.90	0.00	0.00	0.00	
13,200.00	90.00	0.92	7,226.00	4,582.89	-697.67	4,582.89	0.00	0.00	0.00	
13,300.00	90.00	0.92	7,226.00	4,682.88	-696.06	4,682.88	0.00	0.00	0.00	
13,400.00	90.00	0.92	7,226.00	4,782.86	-694.46	4,782.86	0.00	0.00	0.00	
13,431.18	90.00	0.92	7,226.00	4,814.04	-693.96	4,814.04	0.00	0.00	0.00	
TD at 13431.18 - PBHL_MILLER 28N-24HZ(1' FNL 1400' FWL)										

<b>Database:</b>	EDM 5000.1 Single User Db	<b>Local Co-ordinate Reference:</b>	Well MILLER 28N-24HZ
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	GL 5029 & 17 @ 5046.00ft (ASSUMED)
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>MD Reference:</b>	GL 5029 & 17 @ 5046.00ft (ASSUMED)
<b>Site:</b>	MILLER 14-24HZ	<b>North Reference:</b>	True
<b>Well:</b>	MILLER 28N-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 (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)

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 28N-24I	0.00	0.00	7,226.00	4,814.04	-693.96	1,323,183.21	3,215,098.13	40.2179710	-104.7297420
- plan hits target center									
- Point									

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	
7,805.80	7,226.00	7" (360 FNL 1400 FWL)	7.000	7.500	

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
875.00	875.00	Fox Hills Base				
4,185.97	4,050.00	Parkman				
4,691.38	4,527.00	Sussex				
7,439.77	7,113.00	Sharon Springs				
7,552.70	7,171.00	Niobrara A				
7,709.96	7,218.00	Niobrara B				

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment	
		+N/-S (ft)	+E/-W (ft)		
1,125.00	1,125.00	0.00	0.00	Start Build 2.00	
2,090.13	2,071.97	-139.69	-80.12	Start 3850.55 hold at 2090.13 MD	
5,940.67	5,706.07	-1,243.81	-713.38	Start Drop -2.00	
6,905.80	6,653.04	-1,383.50	-793.50	Start DLS 10.00 TFO 0.92	
7,805.80	7,226.00	-810.62	-784.30	Start 5625.38 hold at 7805.80 MD	
13,431.18	7,226.00	4,814.04	-693.96	TD at 13431.18	