



Project: COLORADO NORTHERN ZONE - 83
Site: SPOTTED 35-23HZ
Well: SPOTTED 29N-23HZ
Wellbore: OH
Design: PLAN #1 PRELIMINARY



WELL DETAILS: SPOTTED 29N-23HZ

GL 4966 & KB 17 @ 4983.00ft (ASSUMED)

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.00	0.00	1286160.42	3177774.99	40.1171540	-104.8643400

SECTION DETAILS

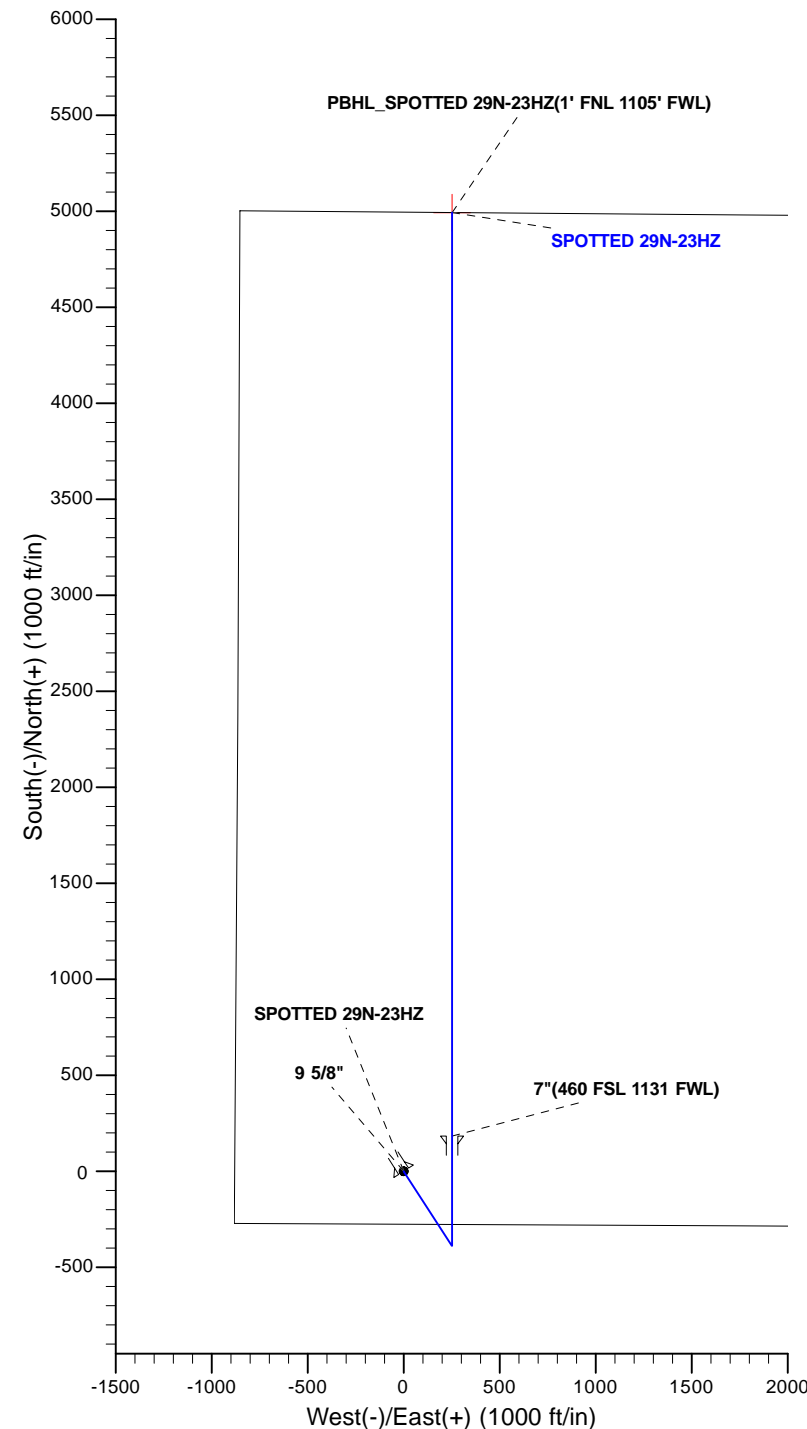
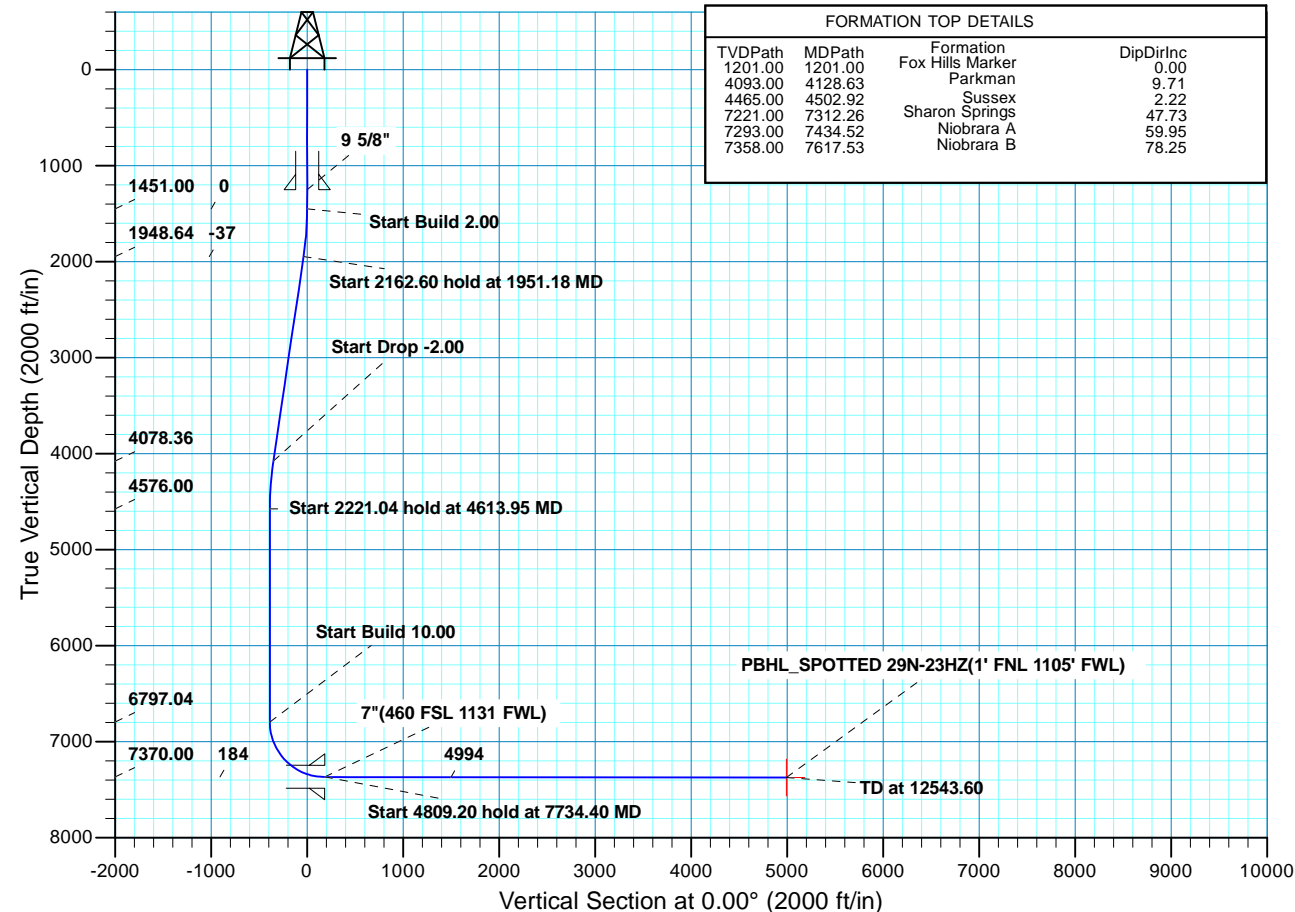
MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
1451.00	0.00	0.00	1451.00	0.00	0.00	0.00	0.00	0.00	
1951.18	10.00	146.97	1948.64	-36.52	23.74	2.00	146.97	-36.52	
4113.78	10.00	146.97	4078.36	-351.48	228.48	0.00	0.00	-351.48	
4613.95	0.00	0.00	4576.00	-388.00	252.21	2.00	180.00	-388.00	
6834.99	0.00	0.00	6797.04	-388.00	252.21	0.00	0.00	-388.00	
7734.40	89.94	0.00	7370.00	184.36	252.21	10.00	0.00	184.36	
12543.60	89.94	0.00	7375.00	4993.56	252.21	0.00	0.00	4993.56	PBHL_SPOTTED 29N-23HZ(1' FNL 1105' FWL)

CASING DETAILS

TVD	MD	Name	Size
1251.00	1251.00	9 5/8"	9.625
7370.00	7734.40	7"	7.000

FORMATION TOP DETAILS

TVDPPath	MDPath	Formation	DipDirInc
1201.00	1201.00	Fox Hills Marker	0.00
4093.00	4128.63	Parkman	9.71
4465.00	4502.92	Sussex	2.22
7221.00	7312.26	Sharon Springs	47.73
7293.00	7434.52	Niobrara A	59.95
7358.00	7617.53	Niobrara B	78.25



Plan: PLAN #1 PRELIMINARY (SPOTTED 29N-23HZ/OH)

Created By: RobertScott Date: 8:11, February 18 2014



Scientific Drilling

US ROCKIES REGION PLANNING

COLORADO NORTHERN ZONE - 83

SPOTTED 35-23HZ

SPOTTED 29N-23HZ

OH

Plan: PLAN #1 PRELIMINARY

Standard Planning Report

18 February, 2014

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well SPOTTED 29N-23HZ
Company:	US ROCKIES REGION PLANNING	TVD Reference:	GL 4966 & KB 17 @ 4983.00ft (ASSUMED)
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	GL 4966 & KB 17 @ 4983.00ft (ASSUMED)
Site:	SPOTTED 35-23HZ	North Reference:	True
Well:	SPOTTED 29N-23HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	PLAN #1 PRELIMINARY		

Project	COLORADO NORTHERN ZONE - 83, KERR MCGEE OIL & GAS ONSHORE LP		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Northern Zone		

Site	SPOTTED 35-23HZ, SECTION 23 T2N R67W			
Site Position:		Northing:	1,286,160.58 usft	Latitude: 40.1171550
From:	Lat/Long	Easting:	3,177,745.06 usft	Longitude: -104.8644470
Position Uncertainty:	0.00 ft	Slot Radius:	13.200 in	Grid Convergence: 0.41 °

Well	SPOTTED 29N-23HZ, 275' FSL 880' FWL			
Well Position	+N/-S	-0.37 ft	Northing:	1,286,160.42 usft
	+E/-W	29.92 ft	Easting:	3,177,774.99 usft
Position Uncertainty		0.00 ft	Wellhead Elevation:	0.00 ft
			Ground Level:	4,966.00 ft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	BGGM2013	02/13/14	8.58	66.70	52,611

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

Plan Sections										
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	
1,451.00	0.00	0.00	1,451.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,951.18	10.00	146.97	1,948.64	-36.52	23.74	2.00	2.00	0.00	146.97	
4,113.78	10.00	146.97	4,078.36	-351.48	228.48	0.00	0.00	0.00	0.00	
4,613.95	0.00	0.00	4,576.00	-388.00	252.21	2.00	-2.00	0.00	180.00	
6,834.99	0.00	0.00	6,797.04	-388.00	252.21	0.00	0.00	0.00	0.00	
7,734.40	89.94	0.00	7,370.00	184.36	252.21	10.00	10.00	0.00	0.00	
12,543.60	89.94	0.00	7,375.00	4,993.56	252.21	0.00	0.00	0.00	0.00	PBHL_SPOTTED 29N

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Company:	US ROCKIES REGION PLANNING	TVD Reference:	GL 4966 & KB 17 @ 4983.00ft (ASSUMED)
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	GL 4966 & KB 17 @ 4983.00ft (ASSUMED)
Site:	SPOTTED 35-23HZ	North Reference:	True
Well:	SPOTTED 29N-23HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	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
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
1,201.00	0.00	0.00	1,201.00	0.00	0.00	0.00	0.00	0.00	0.00
Fox Hills Marker									
1,251.00	0.00	0.00	1,251.00	0.00	0.00	0.00	0.00	0.00	0.00
9 5/8"									
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
1,451.00	0.00	0.00	1,451.00	0.00	0.00	0.00	0.00	0.00	0.00
Start Build 2.00									
1,500.00	0.98	146.97	1,500.00	-0.35	0.23	-0.35	2.00	2.00	0.00
1,600.00	2.98	146.97	1,599.93	-3.25	2.11	-3.25	2.00	2.00	0.00
1,700.00	4.98	146.97	1,699.69	-9.07	5.89	-9.07	2.00	2.00	0.00
1,800.00	6.98	146.97	1,799.14	-17.80	11.57	-17.80	2.00	2.00	0.00
1,900.00	8.98	146.97	1,898.16	-29.44	19.14	-29.44	2.00	2.00	0.00
1,951.18	10.00	146.97	1,948.64	-36.52	23.74	-36.52	2.00	2.00	0.00
Start 2162.60 hold at 1951.18 MD									
2,000.00	10.00	146.97	1,996.72	-43.63	28.36	-43.63	0.00	0.00	0.00
2,100.00	10.00	146.97	2,095.20	-58.19	37.83	-58.19	0.00	0.00	0.00
2,200.00	10.00	146.97	2,193.68	-72.76	47.29	-72.76	0.00	0.00	0.00
2,300.00	10.00	146.97	2,292.16	-87.32	56.76	-87.32	0.00	0.00	0.00
2,400.00	10.00	146.97	2,390.64	-101.88	66.23	-101.88	0.00	0.00	0.00
2,500.00	10.00	146.97	2,489.12	-116.45	75.70	-116.45	0.00	0.00	0.00
2,600.00	10.00	146.97	2,587.60	-131.01	85.16	-131.01	0.00	0.00	0.00
2,700.00	10.00	146.97	2,686.08	-145.58	94.63	-145.58	0.00	0.00	0.00
2,800.00	10.00	146.97	2,784.56	-160.14	104.10	-160.14	0.00	0.00	0.00
2,900.00	10.00	146.97	2,883.04	-174.71	113.57	-174.71	0.00	0.00	0.00
3,000.00	10.00	146.97	2,981.52	-189.27	123.03	-189.27	0.00	0.00	0.00
3,100.00	10.00	146.97	3,080.00	-203.83	132.50	-203.83	0.00	0.00	0.00
3,200.00	10.00	146.97	3,178.48	-218.40	141.97	-218.40	0.00	0.00	0.00
3,300.00	10.00	146.97	3,276.96	-232.96	151.43	-232.96	0.00	0.00	0.00
3,400.00	10.00	146.97	3,375.44	-247.53	160.90	-247.53	0.00	0.00	0.00
3,500.00	10.00	146.97	3,473.92	-262.09	170.37	-262.09	0.00	0.00	0.00
3,600.00	10.00	146.97	3,572.40	-276.66	179.84	-276.66	0.00	0.00	0.00
3,700.00	10.00	146.97	3,670.88	-291.22	189.30	-291.22	0.00	0.00	0.00
3,800.00	10.00	146.97	3,769.36	-305.78	198.77	-305.78	0.00	0.00	0.00
3,900.00	10.00	146.97	3,867.83	-320.35	208.24	-320.35	0.00	0.00	0.00
4,000.00	10.00	146.97	3,966.31	-334.91	217.71	-334.91	0.00	0.00	0.00
4,100.00	10.00	146.97	4,064.79	-349.48	227.17	-349.48	0.00	0.00	0.00
4,113.78	10.00	146.97	4,078.36	-351.48	228.48	-351.48	0.00	0.00	0.00
Start Drop -2.00									
4,128.63	9.71	146.97	4,093.00	-353.62	229.86	-353.62	2.00	-2.00	0.00

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Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	GL 4966 & KB 17 @ 4983.00ft (ASSUMED)
Site:	SPOTTED 35-23HZ	North Reference:	True
Well:	SPOTTED 29N-23HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	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)
Parkman									
4,200.00	8.28	146.97	4,163.49	-362.97	235.94	-362.97	2.00	-2.00	0.00
4,300.00	6.28	146.97	4,262.68	-373.59	242.85	-373.59	2.00	-2.00	0.00
4,400.00	4.28	146.97	4,362.25	-381.30	247.86	-381.30	2.00	-2.00	0.00
4,500.00	2.28	146.97	4,462.08	-386.10	250.98	-386.10	2.00	-2.00	0.00
4,502.93	2.22	146.97	4,465.00	-386.20	251.04	-386.20	2.00	-2.00	0.00
Sussex									
4,600.00	0.28	146.97	4,562.05	-387.97	252.20	-387.97	2.00	-2.00	0.00
4,613.95	0.00	0.00	4,576.00	-388.00	252.21	-388.00	2.00	-2.00	0.00
Start 2221.04 hold at 4613.95 MD									
4,700.00	0.00	0.00	4,662.05	-388.00	252.21	-388.00	0.00	0.00	0.00
4,800.00	0.00	0.00	4,762.05	-388.00	252.21	-388.00	0.00	0.00	0.00
4,900.00	0.00	0.00	4,862.05	-388.00	252.21	-388.00	0.00	0.00	0.00
5,000.00	0.00	0.00	4,962.05	-388.00	252.21	-388.00	0.00	0.00	0.00
5,100.00	0.00	0.00	5,062.05	-388.00	252.21	-388.00	0.00	0.00	0.00
5,200.00	0.00	0.00	5,162.05	-388.00	252.21	-388.00	0.00	0.00	0.00
5,300.00	0.00	0.00	5,262.05	-388.00	252.21	-388.00	0.00	0.00	0.00
5,400.00	0.00	0.00	5,362.05	-388.00	252.21	-388.00	0.00	0.00	0.00
5,500.00	0.00	0.00	5,462.05	-388.00	252.21	-388.00	0.00	0.00	0.00
5,600.00	0.00	0.00	5,562.05	-388.00	252.21	-388.00	0.00	0.00	0.00
5,700.00	0.00	0.00	5,662.05	-388.00	252.21	-388.00	0.00	0.00	0.00
5,800.00	0.00	0.00	5,762.05	-388.00	252.21	-388.00	0.00	0.00	0.00
5,900.00	0.00	0.00	5,862.05	-388.00	252.21	-388.00	0.00	0.00	0.00
6,000.00	0.00	0.00	5,962.05	-388.00	252.21	-388.00	0.00	0.00	0.00
6,100.00	0.00	0.00	6,062.05	-388.00	252.21	-388.00	0.00	0.00	0.00
6,200.00	0.00	0.00	6,162.05	-388.00	252.21	-388.00	0.00	0.00	0.00
6,300.00	0.00	0.00	6,262.05	-388.00	252.21	-388.00	0.00	0.00	0.00
6,400.00	0.00	0.00	6,362.05	-388.00	252.21	-388.00	0.00	0.00	0.00
6,500.00	0.00	0.00	6,462.05	-388.00	252.21	-388.00	0.00	0.00	0.00
6,600.00	0.00	0.00	6,562.05	-388.00	252.21	-388.00	0.00	0.00	0.00
6,700.00	0.00	0.00	6,662.05	-388.00	252.21	-388.00	0.00	0.00	0.00
6,800.00	0.00	0.00	6,762.05	-388.00	252.21	-388.00	0.00	0.00	0.00
6,834.99	0.00	0.00	6,797.04	-388.00	252.21	-388.00	0.00	0.00	0.00
Start Build 10.00									
6,900.00	6.50	0.00	6,861.91	-384.32	252.21	-384.32	10.00	10.00	0.00
7,000.00	16.50	0.00	6,959.78	-364.40	252.21	-364.40	10.00	10.00	0.00
7,100.00	26.50	0.00	7,052.70	-327.80	252.21	-327.80	10.00	10.00	0.00
7,200.00	36.50	0.00	7,137.85	-275.61	252.21	-275.61	10.00	10.00	0.00
7,300.00	46.50	0.00	7,212.65	-209.44	252.21	-209.44	10.00	10.00	0.00
7,312.26	47.73	0.00	7,221.00	-200.45	252.21	-200.45	10.00	10.00	0.00
Sharon Springs									
7,400.00	56.50	0.00	7,274.83	-131.27	252.21	-131.27	10.00	10.00	0.00
7,434.52	59.95	0.00	7,293.00	-101.93	252.21	-101.93	10.00	10.00	0.00
Niobrara A									
7,500.00	66.50	0.00	7,322.48	-43.50	252.21	-43.50	10.00	10.00	0.00
7,600.00	76.50	0.00	7,354.17	51.21	252.21	51.21	10.00	10.00	0.00
7,617.53	78.25	0.00	7,358.00	68.32	252.21	68.32	10.00	10.00	0.00
Niobrara B									
7,700.00	86.50	0.00	7,368.93	149.99	252.21	149.99	10.00	10.00	0.00
7,734.40	89.94	0.00	7,370.00	184.37	252.21	184.37	10.00	10.00	0.00
Start 4809.20 hold at 7734.40 MD - 7"(460 FSL 1131 FWL)									
7,800.00	89.94	0.00	7,370.07	249.97	252.21	249.97	0.00	0.00	0.00
7,900.00	89.94	0.00	7,370.17	349.97	252.21	349.97	0.00	0.00	0.00

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Well:	SPOTTED 29N-23HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	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)
8,000.00	89.94	0.00	7,370.27	449.96	252.21	449.96	0.00	0.00	0.00
8,100.00	89.94	0.00	7,370.38	549.96	252.21	549.96	0.00	0.00	0.00
8,200.00	89.94	0.00	7,370.48	649.96	252.21	649.96	0.00	0.00	0.00
8,300.00	89.94	0.00	7,370.59	749.96	252.21	749.96	0.00	0.00	0.00
8,400.00	89.94	0.00	7,370.69	849.96	252.21	849.96	0.00	0.00	0.00
8,500.00	89.94	0.00	7,370.79	949.96	252.21	949.96	0.00	0.00	0.00
8,600.00	89.94	0.00	7,370.90	1,049.96	252.21	1,049.96	0.00	0.00	0.00
8,700.00	89.94	0.00	7,371.00	1,149.96	252.21	1,149.96	0.00	0.00	0.00
8,800.00	89.94	0.00	7,371.11	1,249.96	252.21	1,249.96	0.00	0.00	0.00
8,900.00	89.94	0.00	7,371.21	1,349.96	252.21	1,349.96	0.00	0.00	0.00
9,000.00	89.94	0.00	7,371.31	1,449.96	252.21	1,449.96	0.00	0.00	0.00
9,100.00	89.94	0.00	7,371.42	1,549.96	252.21	1,549.96	0.00	0.00	0.00
9,200.00	89.94	0.00	7,371.52	1,649.96	252.21	1,649.96	0.00	0.00	0.00
9,300.00	89.94	0.00	7,371.63	1,749.96	252.21	1,749.96	0.00	0.00	0.00
9,400.00	89.94	0.00	7,371.73	1,849.96	252.21	1,849.96	0.00	0.00	0.00
9,500.00	89.94	0.00	7,371.83	1,949.96	252.21	1,949.96	0.00	0.00	0.00
9,600.00	89.94	0.00	7,371.94	2,049.96	252.21	2,049.96	0.00	0.00	0.00
9,700.00	89.94	0.00	7,372.04	2,149.96	252.21	2,149.96	0.00	0.00	0.00
9,800.00	89.94	0.00	7,372.15	2,249.96	252.21	2,249.96	0.00	0.00	0.00
9,900.00	89.94	0.00	7,372.25	2,349.96	252.21	2,349.96	0.00	0.00	0.00
10,000.00	89.94	0.00	7,372.35	2,449.96	252.21	2,449.96	0.00	0.00	0.00
10,100.00	89.94	0.00	7,372.46	2,549.96	252.21	2,549.96	0.00	0.00	0.00
10,200.00	89.94	0.00	7,372.56	2,649.96	252.21	2,649.96	0.00	0.00	0.00
10,300.00	89.94	0.00	7,372.67	2,749.96	252.21	2,749.96	0.00	0.00	0.00
10,400.00	89.94	0.00	7,372.77	2,849.96	252.21	2,849.96	0.00	0.00	0.00
10,500.00	89.94	0.00	7,372.87	2,949.96	252.21	2,949.96	0.00	0.00	0.00
10,600.00	89.94	0.00	7,372.98	3,049.96	252.21	3,049.96	0.00	0.00	0.00
10,700.00	89.94	0.00	7,373.08	3,149.96	252.21	3,149.96	0.00	0.00	0.00
10,800.00	89.94	0.00	7,373.19	3,249.96	252.21	3,249.96	0.00	0.00	0.00
10,900.00	89.94	0.00	7,373.29	3,349.96	252.21	3,349.96	0.00	0.00	0.00
11,000.00	89.94	0.00	7,373.39	3,449.96	252.21	3,449.96	0.00	0.00	0.00
11,100.00	89.94	0.00	7,373.50	3,549.96	252.21	3,549.96	0.00	0.00	0.00
11,200.00	89.94	0.00	7,373.60	3,649.96	252.21	3,649.96	0.00	0.00	0.00
11,300.00	89.94	0.00	7,373.71	3,749.96	252.21	3,749.96	0.00	0.00	0.00
11,400.00	89.94	0.00	7,373.81	3,849.96	252.21	3,849.96	0.00	0.00	0.00
11,500.00	89.94	0.00	7,373.91	3,949.96	252.21	3,949.96	0.00	0.00	0.00
11,600.00	89.94	0.00	7,374.02	4,049.96	252.21	4,049.96	0.00	0.00	0.00
11,700.00	89.94	0.00	7,374.12	4,149.96	252.21	4,149.96	0.00	0.00	0.00
11,800.00	89.94	0.00	7,374.23	4,249.96	252.21	4,249.96	0.00	0.00	0.00
11,900.00	89.94	0.00	7,374.33	4,349.96	252.21	4,349.96	0.00	0.00	0.00
12,000.00	89.94	0.00	7,374.43	4,449.96	252.21	4,449.96	0.00	0.00	0.00
12,100.00	89.94	0.00	7,374.54	4,549.96	252.21	4,549.96	0.00	0.00	0.00
12,200.00	89.94	0.00	7,374.64	4,649.96	252.21	4,649.96	0.00	0.00	0.00
12,300.00	89.94	0.00	7,374.75	4,749.96	252.21	4,749.96	0.00	0.00	0.00
12,400.00	89.94	0.00	7,374.85	4,849.96	252.21	4,849.96	0.00	0.00	0.00
12,500.00	89.94	0.00	7,374.95	4,949.96	252.21	4,949.96	0.00	0.00	0.00
12,543.60	89.94	0.00	7,375.00	4,993.56	252.21	4,993.56	0.00	0.00	0.00
TD at 12543.60 - PBHL_SPOTTED 29N-23HZ(1' FNL 1105' FWL)									

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well SPOTTED 29N-23HZ
Company:	US ROCKIES REGION PLANNING	TVD Reference:	GL 4966 & KB 17 @ 4983.00ft (ASSUMED)
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	GL 4966 & KB 17 @ 4983.00ft (ASSUMED)
Site:	SPOTTED 35-23HZ	North Reference:	True
Well:	SPOTTED 29N-23HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	PLAN #1 PRELIMINARY		

Design Targets									
Target Name	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- hit/miss target	(°)	(°)	(ft)	(ft)	(ft)	(usft)	(usft)		
- Shape									
PBHL_SPOTTED 29N-2	0.00	0.00	7,375.00	4,993.56	252.21	1,291,155.65	3,177,991.40	40.1308620	-104.8634380
- plan hits target center									
- Point									

Casing Points					
Measured Depth	Vertical Depth	Name		Casing Diameter	Hole Diameter
(ft)	(ft)			(in)	(in)
1,251.00	1,251.00	9 5/8"		9.625	12.250
7,734.40	7,370.00	7"(460 FSL 1131 FWL)		7.000	7.500

Formations						
Measured Depth	Vertical Depth	Name	Lithology	Dip	Dip Direction	
(ft)	(ft)			(°)	(°)	
1,201.00	1,201.00	Fox Hills Marker				
4,128.63	4,093.00	Parkman				
4,502.93	4,465.00	Sussex				
7,312.26	7,221.00	Sharon Springs				
7,434.52	7,293.00	Niobrara A				
7,617.53	7,358.00	Niobrara B				

Plan Annotations					
Measured Depth	Vertical Depth	Local Coordinates		Comment	
(ft)	(ft)	+N/-S	+E/-W		
(ft)	(ft)	(ft)	(ft)		
1,451.00	1,451.00	0.00	0.00	Start Build 2.00	
1,951.18	1,948.64	-36.52	23.74	Start 2162.60 hold at 1951.18 MD	
4,113.78	4,078.36	-351.48	228.48	Start Drop -2.00	
4,613.95	4,576.00	-388.00	252.21	Start 2221.04 hold at 4613.95 MD	
6,834.99	6,797.04	-388.00	252.21	Start Build 10.00	
7,734.40	7,370.00	184.36	252.21	Start 4809.20 hold at 7734.40 MD	
12,543.60	7,375.00	4,993.56	252.21	TD at 12543.60	