



Project: COLORADO NORTHERN ZONE - 83
Site: WHIPSNAKE 36-22 HZ PAD
Well: WHIPSNAKE 28N-22HZ
Wellbore: OH
Design: PLAN #1 PRELIMINARY



WELL DETAILS: WHIPSNAKE 28N-22HZ

GL 4988 & KB 17 @ 5005.00ft (ASSUMED)

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.00	0.00	1286180.34	3174527.21	40.1172720	-104.8759520

SECTION DETAILS

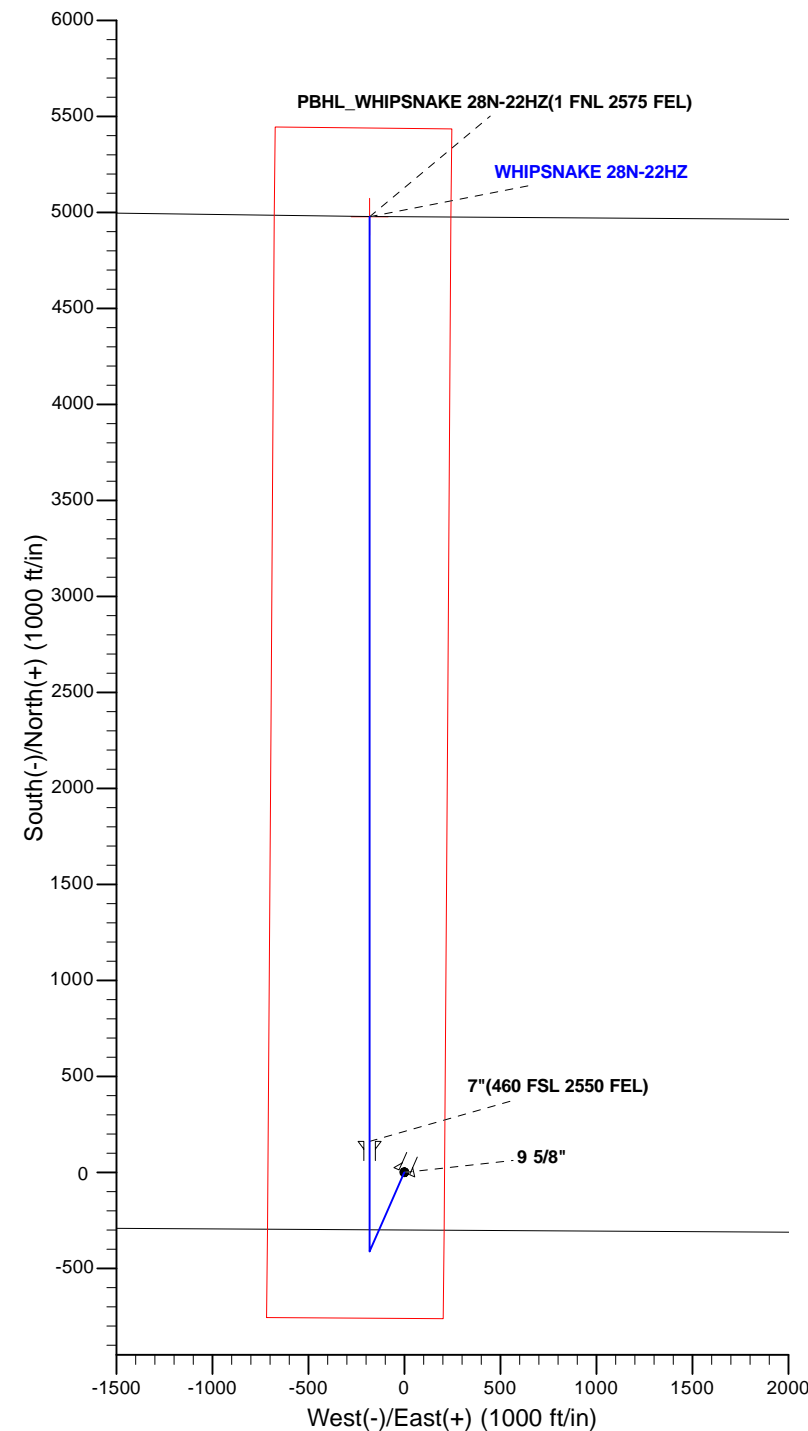
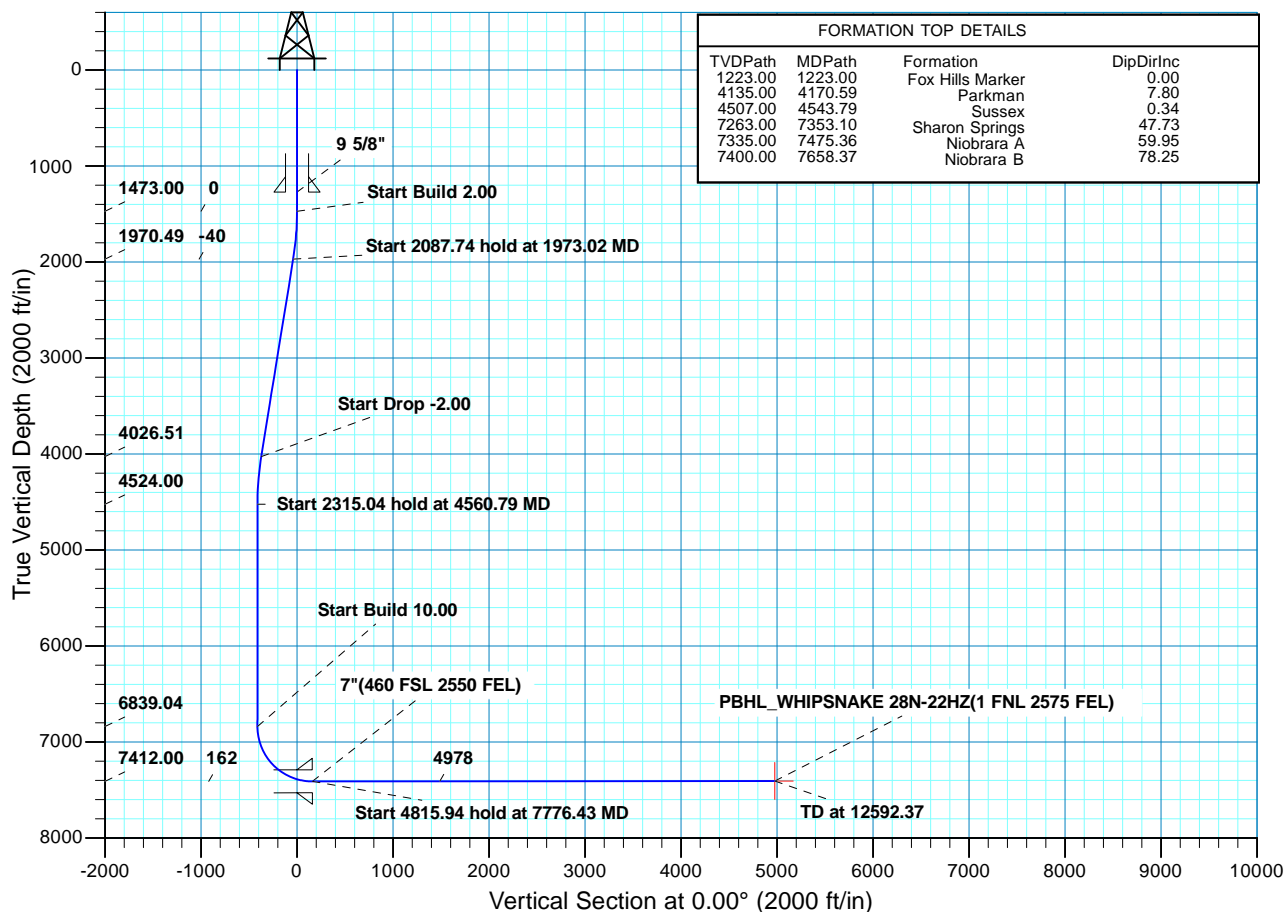
MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
1473.00	0.00	0.00	1473.00	0.00	0.00	0.00	0.00	0.00	
1973.02	10.00	203.73	1970.49	-39.85	-17.51	2.00	203.73	-39.85	
4060.77	10.00	203.73	4026.51	-371.75	-163.40	0.00	0.00	-371.75	
4560.79	0.00	0.00	4524.00	-411.60	-180.91	2.00	180.00	-411.60	
6875.83	0.00	0.00	6839.04	-411.60	-180.91	0.00	0.00	-411.60	
7776.43	90.06	0.00	7412.00	161.95	-180.91	10.00	0.00	161.95	
12592.37	90.06	0.00	7407.00	4977.89	-180.91	0.00	0.00	4977.89	PBHL_WHIPSNAKE 28N-22HZ(1 FNL 2575 FEL)

CASING DETAILS

TVD	MD	Name	Size
1273.00	1273.00	9 5/8"	9.625
7412.00	7776.43	7"	7.000

FORMATION TOP DETAILS

TVDPath	MDPath	Formation	DipDirInc
1223.00	1223.00	Fox Hills Marker	0.00
4135.00	4170.59	Parkman	7.80
4507.00	4543.79	Sussex	0.34
7263.00	7353.10	Sharon Springs	47.73
7335.00	7475.36	Niobrara A	59.95
7400.00	7658.37	Niobrara B	78.25



Plan: PLAN #1 PRELIMINARY (WHIPSNAKE 28N-22HZ/OH)

Created By: RobertScott Date: 7:50, February 18 2014



Scientific Drilling

US ROCKIES REGION PLANNING

COLORADO NORTHERN ZONE - 83

WHIPSNAKE 36-22 HZ PAD

WHIPSNAKE 28N-22HZ

OH

Plan: PLAN #1 PRELIMINARY

Standard Planning Report

18 February, 2014

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well WHIPSNAKE 28N-22HZ
Company:	US ROCKIES REGION PLANNING	TVD Reference:	GL 4988 & KB 17 @ 5005.00ft (ASSUMED)
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	GL 4988 & KB 17 @ 5005.00ft (ASSUMED)
Site:	WHIPSNAKE 36-22 HZ PAD	North Reference:	True
Well:	WHIPSNAKE 28N-22HZ	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	WHIPSNAKE 36-22 HZ PAD, SECTION 22 T2N R67W			
Site Position:		Northing:	1,286,180.56 usft	Latitude: 40.1172720
From:	Lat/Long	Easting:	3,174,557.14 usft	Longitude: -104.8758450
Position Uncertainty:	0.00 ft	Slot Radius:	13.200 in	Grid Convergence: 0.40 °

Well	WHIPSNAKE 28N-22HZ, 300 FSL 2368 FEL			
Well Position	+N/-S	-0.01 ft	Northing:	1,286,180.34 usft
	+E/-W	-29.92 ft	Easting:	3,174,527.21 usft
Position Uncertainty		0.00 ft	Wellhead Elevation:	0.00 ft
			Ground Level:	4,988.00 ft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	BGGM2013	02/13/14	8.58	66.70	52,609

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	
1,473.00	0.00	0.00	1,473.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,973.02	10.00	203.73	1,970.49	-39.85	-17.51	2.00	2.00	0.00	203.73	
4,060.77	10.00	203.73	4,026.51	-371.75	-163.40	0.00	0.00	0.00	0.00	
4,560.79	0.00	0.00	4,524.00	-411.60	-180.91	2.00	-2.00	0.00	180.00	
6,875.83	0.00	0.00	6,839.04	-411.60	-180.91	0.00	0.00	0.00	0.00	
7,776.43	90.06	0.00	7,412.00	161.95	-180.91	10.00	10.00	0.00	0.00	
12,592.37	90.06	0.00	7,407.00	4,977.89	-180.91	0.00	0.00	0.00	0.00	PBHL_WHIPSNAKE :

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Company:	US ROCKIES REGION PLANNING	TVD Reference:	GL 4988 & KB 17 @ 5005.00ft (ASSUMED)
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	GL 4988 & KB 17 @ 5005.00ft (ASSUMED)
Site:	WHIPSNAKE 36-22 HZ PAD	North Reference:	True
Well:	WHIPSNAKE 28N-22HZ	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
1,223.00	0.00	0.00	1,223.00	0.00	0.00	0.00	0.00	0.00	0.00
Fox Hills Marker									
1,273.00	0.00	0.00	1,273.00	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
1,473.00	0.00	0.00	1,473.00	0.00	0.00	0.00	0.00	0.00	0.00
Start Build 2.00									
1,500.00	0.54	203.73	1,500.00	-0.12	-0.05	-0.12	2.00	2.00	0.00
1,600.00	2.54	203.73	1,599.96	-2.58	-1.13	-2.58	2.00	2.00	0.00
1,700.00	4.54	203.73	1,699.76	-8.23	-3.62	-8.23	2.00	2.00	0.00
1,800.00	6.54	203.73	1,799.29	-17.07	-7.50	-17.07	2.00	2.00	0.00
1,900.00	8.54	203.73	1,898.42	-29.08	-12.78	-29.08	2.00	2.00	0.00
1,973.02	10.00	203.73	1,970.49	-39.85	-17.51	-39.85	2.00	2.00	0.00
Start 2087.74 hold at 1973.02 MD									
2,000.00	10.00	203.73	1,997.06	-44.14	-19.40	-44.14	0.00	0.00	0.00
2,100.00	10.00	203.73	2,095.54	-60.03	-26.39	-60.03	0.00	0.00	0.00
2,200.00	10.00	203.73	2,194.02	-75.93	-33.37	-75.93	0.00	0.00	0.00
2,300.00	10.00	203.73	2,292.50	-91.83	-40.36	-91.83	0.00	0.00	0.00
2,400.00	10.00	203.73	2,390.98	-107.73	-47.35	-107.73	0.00	0.00	0.00
2,500.00	10.00	203.73	2,489.46	-123.63	-54.34	-123.63	0.00	0.00	0.00
2,600.00	10.00	203.73	2,587.94	-139.52	-61.32	-139.52	0.00	0.00	0.00
2,700.00	10.00	203.73	2,686.42	-155.42	-68.31	-155.42	0.00	0.00	0.00
2,800.00	10.00	203.73	2,784.90	-171.32	-75.30	-171.32	0.00	0.00	0.00
2,900.00	10.00	203.73	2,883.38	-187.22	-82.29	-187.22	0.00	0.00	0.00
3,000.00	10.00	203.73	2,981.86	-203.11	-89.28	-203.11	0.00	0.00	0.00
3,100.00	10.00	203.73	3,080.34	-219.01	-96.26	-219.01	0.00	0.00	0.00
3,200.00	10.00	203.73	3,178.82	-234.91	-103.25	-234.91	0.00	0.00	0.00
3,300.00	10.00	203.73	3,277.30	-250.81	-110.24	-250.81	0.00	0.00	0.00
3,400.00	10.00	203.73	3,375.78	-266.71	-117.23	-266.71	0.00	0.00	0.00
3,500.00	10.00	203.73	3,474.26	-282.60	-124.21	-282.60	0.00	0.00	0.00
3,600.00	10.00	203.73	3,572.75	-298.50	-131.20	-298.50	0.00	0.00	0.00
3,700.00	10.00	203.73	3,671.23	-314.40	-138.19	-314.40	0.00	0.00	0.00
3,800.00	10.00	203.73	3,769.71	-330.30	-145.18	-330.30	0.00	0.00	0.00
3,900.00	10.00	203.73	3,868.19	-346.19	-152.16	-346.19	0.00	0.00	0.00
4,000.00	10.00	203.73	3,966.67	-362.09	-159.15	-362.09	0.00	0.00	0.00
4,060.77	10.00	203.73	4,026.51	-371.75	-163.40	-371.75	0.00	0.00	0.00
Start Drop -2.00									
4,100.00	9.22	203.73	4,065.19	-377.75	-166.03	-377.75	2.00	-2.00	0.00
4,170.59	7.80	203.73	4,135.00	-387.31	-170.24	-387.31	2.00	-2.00	0.00

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Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	GL 4988 & KB 17 @ 5005.00ft (ASSUMED)
Site:	WHIPSNAKE 36-22 HZ PAD	North Reference:	True
Well:	WHIPSNAKE 28N-22HZ	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	7.22	203.73	4,164.16	-390.83	-171.78	-390.83	2.00	-2.00	0.00
4,300.00	5.22	203.73	4,263.57	-400.74	-176.14	-400.74	2.00	-2.00	0.00
4,400.00	3.22	203.73	4,363.29	-407.47	-179.10	-407.47	2.00	-2.00	0.00
4,500.00	1.22	203.73	4,463.21	-411.01	-180.65	-411.01	2.00	-2.00	0.00
4,543.79	0.34	203.73	4,507.00	-411.55	-180.89	-411.55	2.00	-2.00	0.00
Sussex									
4,560.79	0.00	0.00	4,524.00	-411.60	-180.91	-411.60	2.00	-2.00	0.00
Start 2315.04 hold at 4560.79 MD									
4,600.00	0.00	0.00	4,563.21	-411.60	-180.91	-411.60	0.00	0.00	0.00
4,700.00	0.00	0.00	4,663.21	-411.60	-180.91	-411.60	0.00	0.00	0.00
4,800.00	0.00	0.00	4,763.21	-411.60	-180.91	-411.60	0.00	0.00	0.00
4,900.00	0.00	0.00	4,863.21	-411.60	-180.91	-411.60	0.00	0.00	0.00
5,000.00	0.00	0.00	4,963.21	-411.60	-180.91	-411.60	0.00	0.00	0.00
5,100.00	0.00	0.00	5,063.21	-411.60	-180.91	-411.60	0.00	0.00	0.00
5,200.00	0.00	0.00	5,163.21	-411.60	-180.91	-411.60	0.00	0.00	0.00
5,300.00	0.00	0.00	5,263.21	-411.60	-180.91	-411.60	0.00	0.00	0.00
5,400.00	0.00	0.00	5,363.21	-411.60	-180.91	-411.60	0.00	0.00	0.00
5,500.00	0.00	0.00	5,463.21	-411.60	-180.91	-411.60	0.00	0.00	0.00
5,600.00	0.00	0.00	5,563.21	-411.60	-180.91	-411.60	0.00	0.00	0.00
5,700.00	0.00	0.00	5,663.21	-411.60	-180.91	-411.60	0.00	0.00	0.00
5,800.00	0.00	0.00	5,763.21	-411.60	-180.91	-411.60	0.00	0.00	0.00
5,900.00	0.00	0.00	5,863.21	-411.60	-180.91	-411.60	0.00	0.00	0.00
6,000.00	0.00	0.00	5,963.21	-411.60	-180.91	-411.60	0.00	0.00	0.00
6,100.00	0.00	0.00	6,063.21	-411.60	-180.91	-411.60	0.00	0.00	0.00
6,200.00	0.00	0.00	6,163.21	-411.60	-180.91	-411.60	0.00	0.00	0.00
6,300.00	0.00	0.00	6,263.21	-411.60	-180.91	-411.60	0.00	0.00	0.00
6,400.00	0.00	0.00	6,363.21	-411.60	-180.91	-411.60	0.00	0.00	0.00
6,500.00	0.00	0.00	6,463.21	-411.60	-180.91	-411.60	0.00	0.00	0.00
6,600.00	0.00	0.00	6,563.21	-411.60	-180.91	-411.60	0.00	0.00	0.00
6,700.00	0.00	0.00	6,663.21	-411.60	-180.91	-411.60	0.00	0.00	0.00
6,800.00	0.00	0.00	6,763.21	-411.60	-180.91	-411.60	0.00	0.00	0.00
6,875.83	0.00	0.00	6,839.04	-411.60	-180.91	-411.60	0.00	0.00	0.00
Start Build 10.00									
6,900.00	2.42	0.00	6,863.20	-411.09	-180.91	-411.09	10.00	10.00	0.00
7,000.00	12.42	0.00	6,962.24	-398.20	-180.91	-398.20	10.00	10.00	0.00
7,100.00	22.42	0.00	7,057.53	-368.30	-180.91	-368.30	10.00	10.00	0.00
7,200.00	32.42	0.00	7,146.19	-322.32	-180.91	-322.32	10.00	10.00	0.00
7,300.00	42.42	0.00	7,225.51	-261.63	-180.91	-261.63	10.00	10.00	0.00
7,353.10	47.73	0.00	7,263.00	-224.05	-180.91	-224.05	10.00	10.00	0.00
Sharon Springs									
7,400.00	52.42	0.00	7,293.09	-188.10	-180.91	-188.10	10.00	10.00	0.00
7,475.36	59.95	0.00	7,335.00	-125.53	-180.91	-125.53	10.00	10.00	0.00
Niobrara A									
7,500.00	62.42	0.00	7,346.88	-103.94	-180.91	-103.94	10.00	10.00	0.00
7,600.00	72.42	0.00	7,385.23	-11.73	-180.91	-11.73	10.00	10.00	0.00
7,658.37	78.25	0.00	7,400.00	44.72	-180.91	44.72	10.00	10.00	0.00
Niobrara B									
7,700.00	82.42	0.00	7,406.99	85.75	-180.91	85.75	10.00	10.00	0.00
7,776.43	90.06	0.00	7,412.00	161.96	-180.91	161.96	10.00	10.00	0.00
Start 4815.94 hold at 7776.43 MD - 7"(460 FSL 2550 FEL)									
7,800.00	90.06	0.00	7,411.97	185.53	-180.91	185.53	0.00	0.00	0.00
7,900.00	90.06	0.00	7,411.87	285.53	-180.91	285.53	0.00	0.00	0.00

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Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	GL 4988 & KB 17 @ 5005.00ft (ASSUMED)
Site:	WHIPSNAKE 36-22 HZ PAD	North Reference:	True
Well:	WHIPSNAKE 28N-22HZ	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	90.06	0.00	7,411.77	385.53	-180.91	385.53	0.00	0.00	0.00
8,100.00	90.06	0.00	7,411.66	485.53	-180.91	485.53	0.00	0.00	0.00
8,200.00	90.06	0.00	7,411.56	585.53	-180.91	585.53	0.00	0.00	0.00
8,300.00	90.06	0.00	7,411.45	685.53	-180.91	685.53	0.00	0.00	0.00
8,400.00	90.06	0.00	7,411.35	785.53	-180.91	785.53	0.00	0.00	0.00
8,500.00	90.06	0.00	7,411.25	885.53	-180.91	885.53	0.00	0.00	0.00
8,600.00	90.06	0.00	7,411.14	985.53	-180.91	985.53	0.00	0.00	0.00
8,700.00	90.06	0.00	7,411.04	1,085.53	-180.91	1,085.53	0.00	0.00	0.00
8,800.00	90.06	0.00	7,410.94	1,185.53	-180.91	1,185.53	0.00	0.00	0.00
8,900.00	90.06	0.00	7,410.83	1,285.53	-180.91	1,285.53	0.00	0.00	0.00
9,000.00	90.06	0.00	7,410.73	1,385.53	-180.91	1,385.53	0.00	0.00	0.00
9,100.00	90.06	0.00	7,410.62	1,485.53	-180.91	1,485.53	0.00	0.00	0.00
9,200.00	90.06	0.00	7,410.52	1,585.53	-180.91	1,585.53	0.00	0.00	0.00
9,300.00	90.06	0.00	7,410.42	1,685.53	-180.91	1,685.53	0.00	0.00	0.00
9,400.00	90.06	0.00	7,410.31	1,785.53	-180.91	1,785.53	0.00	0.00	0.00
9,500.00	90.06	0.00	7,410.21	1,885.53	-180.91	1,885.53	0.00	0.00	0.00
9,600.00	90.06	0.00	7,410.11	1,985.53	-180.91	1,985.53	0.00	0.00	0.00
9,700.00	90.06	0.00	7,410.00	2,085.53	-180.91	2,085.53	0.00	0.00	0.00
9,800.00	90.06	0.00	7,409.90	2,185.53	-180.91	2,185.53	0.00	0.00	0.00
9,900.00	90.06	0.00	7,409.79	2,285.53	-180.91	2,285.53	0.00	0.00	0.00
10,000.00	90.06	0.00	7,409.69	2,385.53	-180.91	2,385.53	0.00	0.00	0.00
10,100.00	90.06	0.00	7,409.59	2,485.53	-180.91	2,485.53	0.00	0.00	0.00
10,200.00	90.06	0.00	7,409.48	2,585.53	-180.91	2,585.53	0.00	0.00	0.00
10,300.00	90.06	0.00	7,409.38	2,685.53	-180.91	2,685.53	0.00	0.00	0.00
10,400.00	90.06	0.00	7,409.28	2,785.53	-180.91	2,785.53	0.00	0.00	0.00
10,500.00	90.06	0.00	7,409.17	2,885.53	-180.91	2,885.53	0.00	0.00	0.00
10,600.00	90.06	0.00	7,409.07	2,985.53	-180.91	2,985.53	0.00	0.00	0.00
10,700.00	90.06	0.00	7,408.96	3,085.53	-180.91	3,085.53	0.00	0.00	0.00
10,800.00	90.06	0.00	7,408.86	3,185.53	-180.91	3,185.53	0.00	0.00	0.00
10,900.00	90.06	0.00	7,408.76	3,285.53	-180.91	3,285.53	0.00	0.00	0.00
11,000.00	90.06	0.00	7,408.65	3,385.53	-180.91	3,385.53	0.00	0.00	0.00
11,100.00	90.06	0.00	7,408.55	3,485.53	-180.91	3,485.53	0.00	0.00	0.00
11,200.00	90.06	0.00	7,408.45	3,585.53	-180.91	3,585.53	0.00	0.00	0.00
11,300.00	90.06	0.00	7,408.34	3,685.53	-180.91	3,685.53	0.00	0.00	0.00
11,400.00	90.06	0.00	7,408.24	3,785.53	-180.91	3,785.53	0.00	0.00	0.00
11,500.00	90.06	0.00	7,408.13	3,885.53	-180.91	3,885.53	0.00	0.00	0.00
11,600.00	90.06	0.00	7,408.03	3,985.53	-180.91	3,985.53	0.00	0.00	0.00
11,700.00	90.06	0.00	7,407.93	4,085.53	-180.91	4,085.53	0.00	0.00	0.00
11,800.00	90.06	0.00	7,407.82	4,185.53	-180.91	4,185.53	0.00	0.00	0.00
11,900.00	90.06	0.00	7,407.72	4,285.53	-180.91	4,285.53	0.00	0.00	0.00
12,000.00	90.06	0.00	7,407.61	4,385.53	-180.91	4,385.53	0.00	0.00	0.00
12,100.00	90.06	0.00	7,407.51	4,485.52	-180.91	4,485.52	0.00	0.00	0.00
12,200.00	90.06	0.00	7,407.41	4,585.52	-180.91	4,585.52	0.00	0.00	0.00
12,300.00	90.06	0.00	7,407.30	4,685.52	-180.91	4,685.52	0.00	0.00	0.00
12,400.00	90.06	0.00	7,407.20	4,785.52	-180.91	4,785.52	0.00	0.00	0.00
12,500.00	90.06	0.00	7,407.10	4,885.52	-180.91	4,885.52	0.00	0.00	0.00
12,592.37	90.06	0.00	7,407.00	4,977.89	-180.91	4,977.89	0.00	0.00	0.00
TD at 12592.37 - PBHL_WHIPSNAKE 28N-22HZ(1 FNL 2575 FEL)									

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well WHIPSNAKE 28N-22HZ
Company:	US ROCKIES REGION PLANNING	TVD Reference:	GL 4988 & KB 17 @ 5005.00ft (ASSUMED)
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	GL 4988 & KB 17 @ 5005.00ft (ASSUMED)
Site:	WHIPSNAKE 36-22 HZ PAD	North Reference:	True
Well:	WHIPSNAKE 28N-22HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	PLAN #1 PRELIMINARY		

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_WHIPSNAKE 28I	0.00	0.00	7,407.00	4,977.89	-180.91	1,291,156.83	3,174,311.27	40.1309370	-104.8765990
- plan hits target center									
- Point									

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)	
1,273.00	1,273.00	9 5/8"	9.625	12.250	
7,776.43	7,412.00	7"(460 FSL 2550 FEL)	7.000	7.500	

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
1,223.00	1,223.00	Fox Hills Marker				
4,170.59	4,135.00	Parkman				
4,543.79	4,507.00	Sussex				
7,353.10	7,263.00	Sharon Springs				
7,475.36	7,335.00	Niobrara A				
7,658.37	7,400.00	Niobrara B				

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment	
		+N/-S (ft)	+E/-W (ft)		
1,473.00	1,473.00	0.00	0.00	Start Build 2.00	
1,973.02	1,970.49	-39.85	-17.51	Start 2087.74 hold at 1973.02 MD	
4,060.77	4,026.51	-371.75	-163.40	Start Drop -2.00	
4,560.79	4,524.00	-411.60	-180.91	Start 2315.04 hold at 4560.79 MD	
6,875.83	6,839.04	-411.60	-180.91	Start Build 10.00	
7,776.43	7,412.00	161.95	-180.91	Start 4815.94 hold at 7776.43 MD	
12,592.37	7,407.00	4,977.89	-180.91	TD at 12592.37	