



Project: COLORADO NORTHERN ZONE - 83
 Site: WHIPSNAKE 36-22 HZ PAD
 Well: WHIPSNAKE 27N-22HZ
 Wellbore: OH
 Design: PLAN #1 PRELIMINARY



WELL DETAILS: WHIPSNAKE 27N-22HZ

GL 4987 & KB 17 @ 5004.00ft (ASSUMED)

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.00	0.00	1286180.40	3174587.34	40.1172710	-104.8757370

SECTION DETAILS

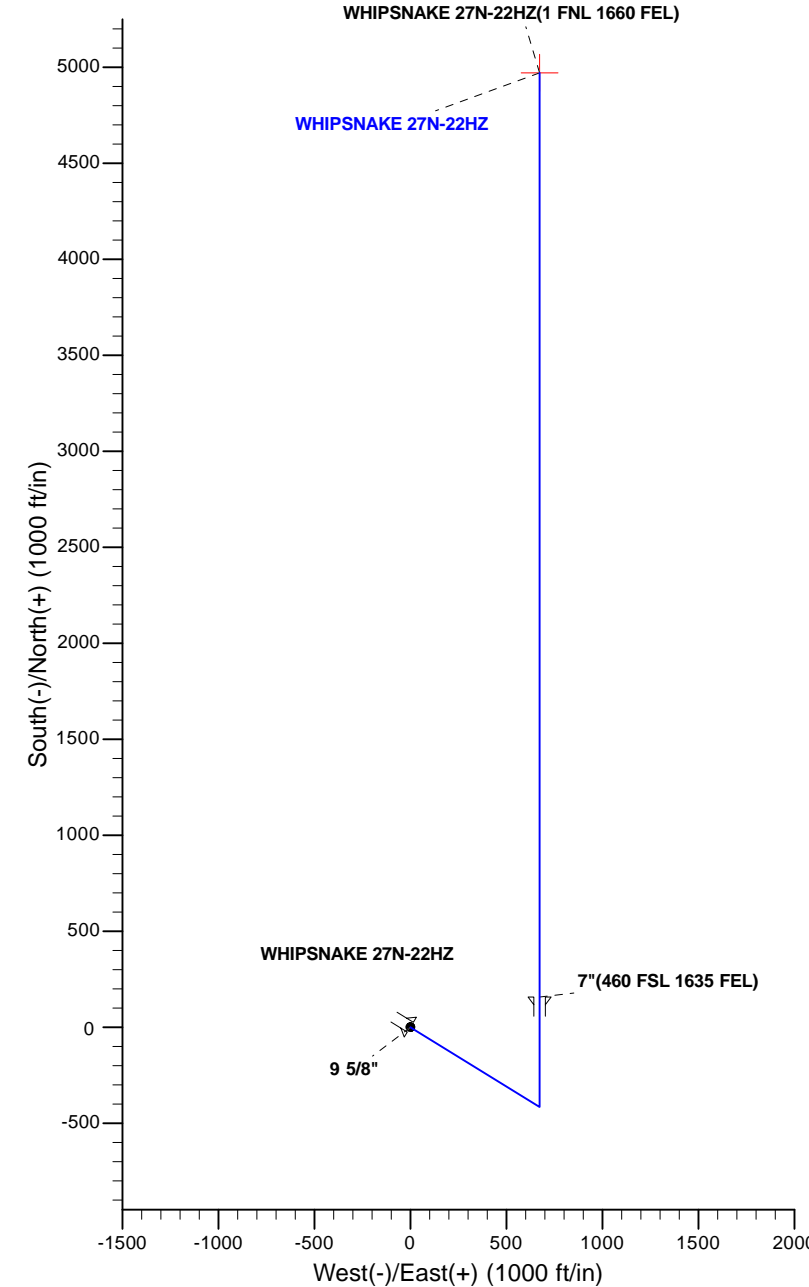
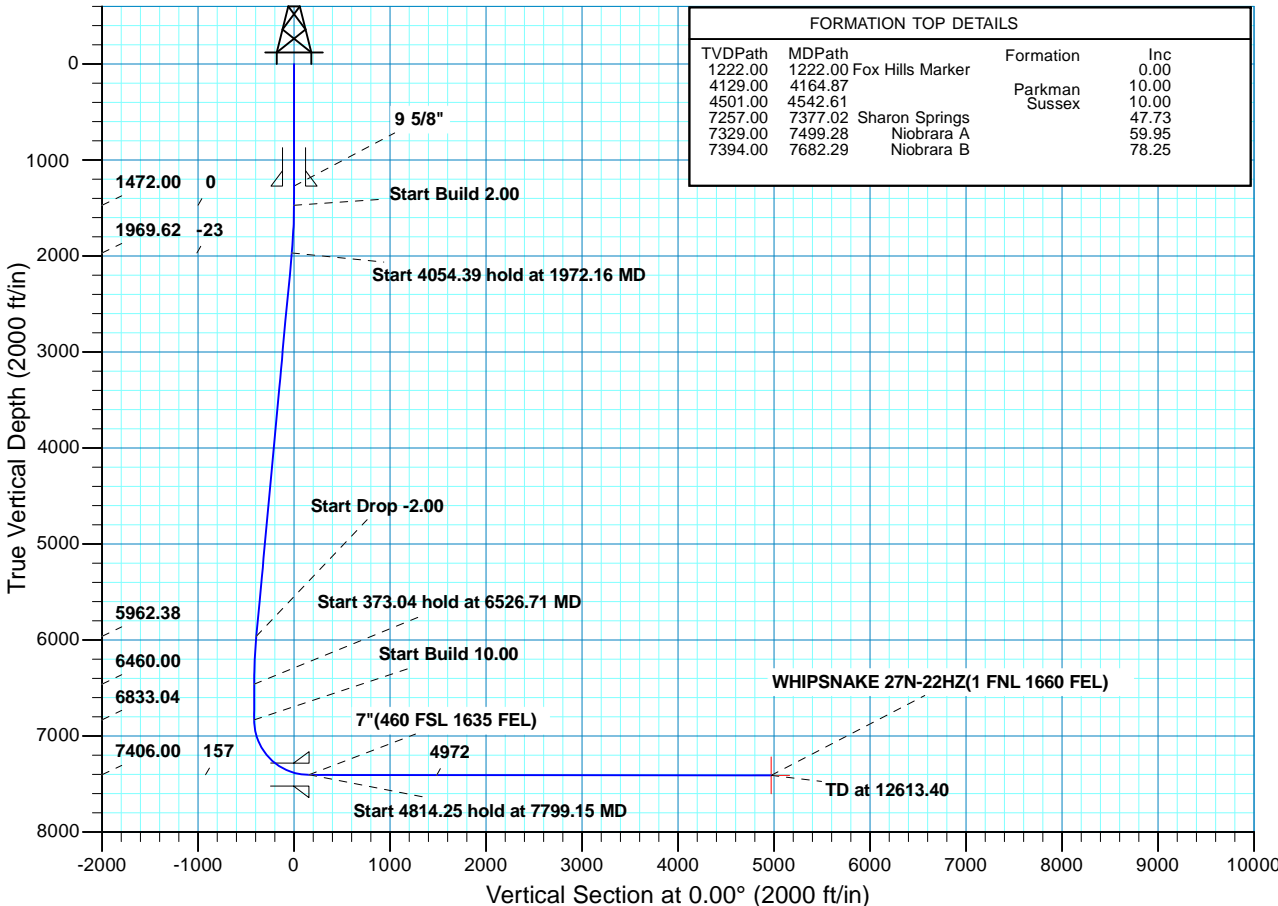
MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
1472.00	0.00	0.00	1472.00	0.00	0.00	0.00	0.00	0.00	
1972.16	10.00	121.62	1969.62	-22.83	37.08	2.00	121.62	-22.83	
6026.55	10.00	121.62	5962.38	-392.07	636.79	0.00	0.00	-392.07	
6526.71	0.00	0.00	6460.00	-414.90	673.88	2.00	180.00	-414.90	
6899.75	0.00	0.00	6833.04	-414.90	673.88	0.00	0.00	-414.90	
7799.15	89.94	0.00	7406.00	157.46	673.88	10.00	0.00	157.46	
12613.40	89.94	0.00	7411.00	4971.71	673.88	0.00	0.00	4971.71	WHIPSNAKE 27N-22HZ(1 FNL 1660 FEL)

CASING DETAILS

TVD	MD	Name	Size
1272.00	1272.00	9 5/8"	9.625
7406.00	7799.15	7"	7.000

FORMATION TOP DETAILS

TVDPPath	MDPath	Formation	Inc
1222.00	1222.00	Fox Hills Marker	0.00
4129.00	4164.87	Parkman	10.00
4501.00	4542.61	Sussex	10.00
7257.00	7377.02	Sharon Springs	47.73
7329.00	7499.28	Niobrara A	59.95
7394.00	7682.29	Niobrara B	78.25





Scientific Drilling

US ROCKIES REGION PLANNING

COLORADO NORTHERN ZONE - 83

WHIPSNAKE 36-22 HZ PAD

WHIPSNAKE 27N-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 27N-22HZ
Company:	US ROCKIES REGION PLANNING	TVD Reference:	GL 4987 & KB 17 @ 5004.00ft (ASSUMED)
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	GL 4987 & KB 17 @ 5004.00ft (ASSUMED)
Site:	WHIPSNAKE 36-22 HZ PAD	North Reference:	True
Well:	WHIPSNAKE 27N-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 27N-22HZ, 300 FNL 2308 FEL					
Well Position	+N/-S	-0.37 ft	Northing:	1,286,180.40 usft	Latitude:	40.1172710
	+E/-W	30.20 ft	Easting:	3,174,587.34 usft	Longitude:	-104.8757370
Position Uncertainty		0.00 ft	Wellhead Elevation:	0.00 ft	Ground Level:	4,987.00 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	
1,472.00	0.00	0.00	1,472.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,972.16	10.00	121.62	1,969.62	-22.83	37.08	2.00	2.00	0.00	121.62	
6,026.55	10.00	121.62	5,962.38	-392.07	636.79	0.00	0.00	0.00	0.00	
6,526.71	0.00	0.00	6,460.00	-414.90	673.88	2.00	-2.00	0.00	180.00	
6,899.75	0.00	0.00	6,833.04	-414.90	673.88	0.00	0.00	0.00	0.00	
7,799.15	89.94	0.00	7,406.00	157.46	673.88	10.00	10.00	0.00	0.00	
12,613.40	89.94	0.00	7,411.00	4,971.71	673.88	0.00	0.00	0.00	0.00	WHIPSNAKE 27N-22

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Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	GL 4987 & KB 17 @ 5004.00ft (ASSUMED)
Site:	WHIPSNAKE 36-22 HZ PAD	North Reference:	True
Well:	WHIPSNAKE 27N-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	0.00
100.00	0.00	0.00	100.00	0.00	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	0.00
300.00	0.00	0.00	300.00	0.00	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	0.00
500.00	0.00	0.00	500.00	0.00	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	0.00
700.00	0.00	0.00	700.00	0.00	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	0.00
900.00	0.00	0.00	900.00	0.00	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	0.00
1,100.00	0.00	0.00	1,100.00	0.00	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	0.00
1,222.00	0.00	0.00	1,222.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fox Hills Marker										
1,272.00	0.00	0.00	1,272.00	0.00	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	0.00
1,400.00	0.00	0.00	1,400.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,472.00	0.00	0.00	1,472.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Start Build 2.00										
1,500.00	0.56	121.62	1,500.00	-0.07	0.12	-0.07	2.00	2.00	0.00	0.00
1,600.00	2.56	121.62	1,599.96	-1.50	2.43	-1.50	2.00	2.00	0.00	0.00
1,700.00	4.56	121.62	1,699.76	-4.75	7.72	-4.75	2.00	2.00	0.00	0.00
1,800.00	6.56	121.62	1,799.28	-9.83	15.97	-9.83	2.00	2.00	0.00	0.00
1,900.00	8.56	121.62	1,898.41	-16.73	27.17	-16.73	2.00	2.00	0.00	0.00
1,972.16	10.00	121.62	1,969.62	-22.83	37.08	-22.83	2.00	2.00	0.00	0.00
Start 4054.39 hold at 1972.16 MD										
2,000.00	10.00	121.62	1,997.04	-25.37	41.20	-25.37	0.00	0.00	0.00	0.00
2,100.00	10.00	121.62	2,095.52	-34.48	55.99	-34.48	0.00	0.00	0.00	0.00
2,200.00	10.00	121.62	2,194.00	-43.58	70.79	-43.58	0.00	0.00	0.00	0.00
2,300.00	10.00	121.62	2,292.48	-52.69	85.58	-52.69	0.00	0.00	0.00	0.00
2,400.00	10.00	121.62	2,390.96	-61.80	100.37	-61.80	0.00	0.00	0.00	0.00
2,500.00	10.00	121.62	2,489.44	-70.90	115.16	-70.90	0.00	0.00	0.00	0.00
2,600.00	10.00	121.62	2,587.92	-80.01	129.95	-80.01	0.00	0.00	0.00	0.00
2,700.00	10.00	121.62	2,686.40	-89.12	144.74	-89.12	0.00	0.00	0.00	0.00
2,800.00	10.00	121.62	2,784.88	-98.22	159.54	-98.22	0.00	0.00	0.00	0.00
2,900.00	10.00	121.62	2,883.36	-107.33	174.33	-107.33	0.00	0.00	0.00	0.00
3,000.00	10.00	121.62	2,981.84	-116.44	189.12	-116.44	0.00	0.00	0.00	0.00
3,100.00	10.00	121.62	3,080.32	-125.55	203.91	-125.55	0.00	0.00	0.00	0.00
3,200.00	10.00	121.62	3,178.80	-134.65	218.70	-134.65	0.00	0.00	0.00	0.00
3,300.00	10.00	121.62	3,277.28	-143.76	233.49	-143.76	0.00	0.00	0.00	0.00
3,400.00	10.00	121.62	3,375.76	-152.87	248.28	-152.87	0.00	0.00	0.00	0.00
3,500.00	10.00	121.62	3,474.24	-161.97	263.08	-161.97	0.00	0.00	0.00	0.00
3,600.00	10.00	121.62	3,572.72	-171.08	277.87	-171.08	0.00	0.00	0.00	0.00
3,700.00	10.00	121.62	3,671.20	-180.19	292.66	-180.19	0.00	0.00	0.00	0.00
3,800.00	10.00	121.62	3,769.68	-189.29	307.45	-189.29	0.00	0.00	0.00	0.00
3,900.00	10.00	121.62	3,868.16	-198.40	322.24	-198.40	0.00	0.00	0.00	0.00
4,000.00	10.00	121.62	3,966.64	-207.51	337.03	-207.51	0.00	0.00	0.00	0.00
4,100.00	10.00	121.62	4,065.12	-216.62	351.82	-216.62	0.00	0.00	0.00	0.00
4,164.87	10.00	121.62	4,129.00	-222.52	361.42	-222.52	0.00	0.00	0.00	0.00
Parkman										
4,200.00	10.00	121.62	4,163.60	-225.72	366.62	-225.72	0.00	0.00	0.00	0.00
4,300.00	10.00	121.62	4,262.08	-234.83	381.41	-234.83	0.00	0.00	0.00	0.00

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Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	GL 4987 & KB 17 @ 5004.00ft (ASSUMED)
Site:	WHIPSNAKE 36-22 HZ PAD	North Reference:	True
Well:	WHIPSNAKE 27N-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)
4,400.00	10.00	121.62	4,360.56	-243.94	396.20	-243.94	0.00	0.00	0.00
4,500.00	10.00	121.62	4,459.04	-253.04	410.99	-253.04	0.00	0.00	0.00
4,542.61	10.00	121.62	4,501.00	-256.92	417.29	-256.92	0.00	0.00	0.00
Sussex									
4,600.00	10.00	121.62	4,557.51	-262.15	425.78	-262.15	0.00	0.00	0.00
4,700.00	10.00	121.62	4,655.99	-271.26	440.57	-271.26	0.00	0.00	0.00
4,800.00	10.00	121.62	4,754.47	-280.37	455.37	-280.37	0.00	0.00	0.00
4,900.00	10.00	121.62	4,852.95	-289.47	470.16	-289.47	0.00	0.00	0.00
5,000.00	10.00	121.62	4,951.43	-298.58	484.95	-298.58	0.00	0.00	0.00
5,100.00	10.00	121.62	5,049.91	-307.69	499.74	-307.69	0.00	0.00	0.00
5,200.00	10.00	121.62	5,148.39	-316.79	514.53	-316.79	0.00	0.00	0.00
5,300.00	10.00	121.62	5,246.87	-325.90	529.32	-325.90	0.00	0.00	0.00
5,400.00	10.00	121.62	5,345.35	-335.01	544.11	-335.01	0.00	0.00	0.00
5,500.00	10.00	121.62	5,443.83	-344.11	558.91	-344.11	0.00	0.00	0.00
5,600.00	10.00	121.62	5,542.31	-353.22	573.70	-353.22	0.00	0.00	0.00
5,700.00	10.00	121.62	5,640.79	-362.33	588.49	-362.33	0.00	0.00	0.00
5,800.00	10.00	121.62	5,739.27	-371.44	603.28	-371.44	0.00	0.00	0.00
5,900.00	10.00	121.62	5,837.75	-380.54	618.07	-380.54	0.00	0.00	0.00
6,000.00	10.00	121.62	5,936.23	-389.65	632.86	-389.65	0.00	0.00	0.00
6,026.55	10.00	121.62	5,962.38	-392.07	636.79	-392.07	0.00	0.00	0.00
Start Drop -2.00									
6,100.00	8.53	121.62	6,034.87	-398.27	646.86	-398.27	2.00	-2.00	0.00
6,200.00	6.53	121.62	6,134.00	-405.14	658.03	-405.14	2.00	-2.00	0.00
6,300.00	4.53	121.62	6,233.53	-410.20	666.24	-410.20	2.00	-2.00	0.00
6,400.00	2.53	121.62	6,333.33	-413.43	671.49	-413.43	2.00	-2.00	0.00
6,500.00	0.53	121.62	6,433.29	-414.83	673.77	-414.83	2.00	-2.00	0.00
6,526.71	0.00	0.00	6,460.00	-414.90	673.88	-414.90	2.00	-2.00	0.00
Start 373.04 hold at 6526.71 MD									
6,600.00	0.00	0.00	6,533.29	-414.90	673.88	-414.90	0.00	0.00	0.00
6,700.00	0.00	0.00	6,633.29	-414.90	673.88	-414.90	0.00	0.00	0.00
6,800.00	0.00	0.00	6,733.29	-414.90	673.88	-414.90	0.00	0.00	0.00
6,899.75	0.00	0.00	6,833.04	-414.90	673.88	-414.90	0.00	0.00	0.00
Start Build 10.00									
6,900.00	0.03	0.00	6,833.29	-414.90	673.88	-414.90	10.00	10.00	0.00
7,000.00	10.03	0.00	6,932.78	-406.15	673.88	-406.15	10.00	10.00	0.00
7,100.00	20.03	0.00	7,029.24	-380.26	673.88	-380.26	10.00	10.00	0.00
7,200.00	30.03	0.00	7,119.74	-338.01	673.88	-338.01	10.00	10.00	0.00
7,300.00	40.03	0.00	7,201.52	-280.69	673.88	-280.69	10.00	10.00	0.00
7,377.02	47.73	0.00	7,257.00	-227.35	673.88	-227.35	10.00	10.00	0.00
Sharon Springs									
7,400.00	50.03	0.00	7,272.11	-210.04	673.88	-210.04	10.00	10.00	0.00
7,499.28	59.95	0.00	7,329.00	-128.83	673.88	-128.83	10.00	10.00	0.00
Niobrara A									
7,500.00	60.03	0.00	7,329.36	-128.20	673.88	-128.20	10.00	10.00	0.00
7,600.00	70.03	0.00	7,371.53	-37.67	673.88	-37.67	10.00	10.00	0.00
7,682.29	78.25	0.00	7,394.00	41.42	673.88	41.42	10.00	10.00	0.00
Niobrara B									
7,700.00	80.03	0.00	7,397.34	58.81	673.88	58.81	10.00	10.00	0.00
7,799.15	89.94	0.00	7,406.00	157.46	673.88	157.46	10.00	10.00	0.00
Start 4814.25 hold at 7799.15 MD - 7"(460 FSL 1635 FEL)									
7,800.00	89.94	0.00	7,406.00	158.31	673.88	158.31	0.04	0.04	0.00
7,900.00	89.94	0.00	7,406.10	258.31	673.88	258.31	0.00	0.00	0.00
8,000.00	89.94	0.00	7,406.21	358.31	673.88	358.31	0.00	0.00	0.00

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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)
8,100.00	89.94	0.00	7,406.31	458.31	673.88	458.31	0.00	0.00	0.00
8,200.00	89.94	0.00	7,406.41	558.31	673.88	558.31	0.00	0.00	0.00
8,300.00	89.94	0.00	7,406.52	658.31	673.88	658.31	0.00	0.00	0.00
8,400.00	89.94	0.00	7,406.62	758.31	673.88	758.31	0.00	0.00	0.00
8,500.00	89.94	0.00	7,406.73	858.31	673.88	858.31	0.00	0.00	0.00
8,600.00	89.94	0.00	7,406.83	958.31	673.88	958.31	0.00	0.00	0.00
8,700.00	89.94	0.00	7,406.93	1,058.31	673.88	1,058.31	0.00	0.00	0.00
8,800.00	89.94	0.00	7,407.04	1,158.31	673.88	1,158.31	0.00	0.00	0.00
8,900.00	89.94	0.00	7,407.14	1,258.31	673.88	1,258.31	0.00	0.00	0.00
9,000.00	89.94	0.00	7,407.25	1,358.31	673.88	1,358.31	0.00	0.00	0.00
9,100.00	89.94	0.00	7,407.35	1,458.31	673.88	1,458.31	0.00	0.00	0.00
9,200.00	89.94	0.00	7,407.45	1,558.31	673.88	1,558.31	0.00	0.00	0.00
9,300.00	89.94	0.00	7,407.56	1,658.31	673.88	1,658.31	0.00	0.00	0.00
9,400.00	89.94	0.00	7,407.66	1,758.31	673.88	1,758.31	0.00	0.00	0.00
9,500.00	89.94	0.00	7,407.77	1,858.31	673.88	1,858.31	0.00	0.00	0.00
9,600.00	89.94	0.00	7,407.87	1,958.31	673.88	1,958.31	0.00	0.00	0.00
9,700.00	89.94	0.00	7,407.97	2,058.31	673.88	2,058.31	0.00	0.00	0.00
9,800.00	89.94	0.00	7,408.08	2,158.31	673.88	2,158.31	0.00	0.00	0.00
9,900.00	89.94	0.00	7,408.18	2,258.31	673.88	2,258.31	0.00	0.00	0.00
10,000.00	89.94	0.00	7,408.28	2,358.31	673.88	2,358.31	0.00	0.00	0.00
10,100.00	89.94	0.00	7,408.39	2,458.31	673.88	2,458.31	0.00	0.00	0.00
10,200.00	89.94	0.00	7,408.49	2,558.31	673.88	2,558.31	0.00	0.00	0.00
10,300.00	89.94	0.00	7,408.60	2,658.31	673.88	2,658.31	0.00	0.00	0.00
10,400.00	89.94	0.00	7,408.70	2,758.31	673.88	2,758.31	0.00	0.00	0.00
10,500.00	89.94	0.00	7,408.80	2,858.31	673.88	2,858.31	0.00	0.00	0.00
10,600.00	89.94	0.00	7,408.91	2,958.31	673.88	2,958.31	0.00	0.00	0.00
10,700.00	89.94	0.00	7,409.01	3,058.31	673.88	3,058.31	0.00	0.00	0.00
10,800.00	89.94	0.00	7,409.12	3,158.31	673.88	3,158.31	0.00	0.00	0.00
10,900.00	89.94	0.00	7,409.22	3,258.31	673.88	3,258.31	0.00	0.00	0.00
11,000.00	89.94	0.00	7,409.32	3,358.31	673.88	3,358.31	0.00	0.00	0.00
11,100.00	89.94	0.00	7,409.43	3,458.31	673.88	3,458.31	0.00	0.00	0.00
11,200.00	89.94	0.00	7,409.53	3,558.31	673.88	3,558.31	0.00	0.00	0.00
11,300.00	89.94	0.00	7,409.64	3,658.31	673.88	3,658.31	0.00	0.00	0.00
11,400.00	89.94	0.00	7,409.74	3,758.31	673.88	3,758.31	0.00	0.00	0.00
11,500.00	89.94	0.00	7,409.84	3,858.31	673.88	3,858.31	0.00	0.00	0.00
11,600.00	89.94	0.00	7,409.95	3,958.31	673.88	3,958.31	0.00	0.00	0.00
11,700.00	89.94	0.00	7,410.05	4,058.31	673.88	4,058.31	0.00	0.00	0.00
11,800.00	89.94	0.00	7,410.15	4,158.31	673.88	4,158.31	0.00	0.00	0.00
11,900.00	89.94	0.00	7,410.26	4,258.31	673.88	4,258.31	0.00	0.00	0.00
12,000.00	89.94	0.00	7,410.36	4,358.31	673.88	4,358.31	0.00	0.00	0.00
12,100.00	89.94	0.00	7,410.47	4,458.31	673.88	4,458.31	0.00	0.00	0.00
12,200.00	89.94	0.00	7,410.57	4,558.31	673.88	4,558.31	0.00	0.00	0.00
12,300.00	89.94	0.00	7,410.67	4,658.31	673.88	4,658.31	0.00	0.00	0.00
12,400.00	89.94	0.00	7,410.78	4,758.31	673.88	4,758.31	0.00	0.00	0.00
12,500.00	89.94	0.00	7,410.88	4,858.31	673.88	4,858.31	0.00	0.00	0.00
12,600.00	89.94	0.00	7,410.99	4,958.31	673.88	4,958.31	0.00	0.00	0.00
12,613.40	89.94	0.00	7,411.00	4,971.71	673.88	4,971.71	0.00	0.00	0.00
TD at 12613.40 - WHIPSNAKE 27N-22HZ(1 FNL 1660 FEL)									

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well WHIPSNAKE 27N-22HZ
Company:	US ROCKIES REGION PLANNING	TVD Reference:	GL 4987 & KB 17 @ 5004.00ft (ASSUMED)
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	GL 4987 & KB 17 @ 5004.00ft (ASSUMED)
Site:	WHIPSNAKE 36-22 HZ PAD	North Reference:	True
Well:	WHIPSNAKE 27N-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
WHIPSNAKE 27N-22HZ - hit/miss target - Shape - plan hits target center - Point	0.00	0.00	7,411.00	4,971.71	673.88	1,291,156.72	3,175,226.20	40.1309190	-104.8733270

Casing Points						
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)		
1,272.00	1,272.00	9 5/8"	9.625	12.250		
7,799.15	7,406.00	7"(460 FSL 1635 FEL)	7.000	7.500		

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
1,222.00	1,201.00	Fox Hills Marker				
4,164.87	4,108.00	Parkman				
4,542.61	4,480.00	Sussex				
7,377.02	7,236.00	Sharon Springs				
7,499.28	7,308.00	Niobrara A				
7,682.29	7,373.00	Niobrara B				

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment	
		+N/-S (ft)	+E/-W (ft)		
1,472.00	1,472.00	0.00	0.00	Start Build 2.00	
1,972.16	1,969.62	-22.83	37.08	Start 4054.39 hold at 1972.16 MD	
6,026.55	5,962.38	-392.07	636.79	Start Drop -2.00	
6,526.71	6,460.00	-414.90	673.88	Start 373.04 hold at 6526.71 MD	
6,899.75	6,833.04	-414.90	673.88	Start Build 10.00	
7,799.15	7,406.00	157.46	673.88	Start 4814.25 hold at 7799.15 MD	
12,613.40	7,411.00	4,971.71	673.88	TD at 12613.40	