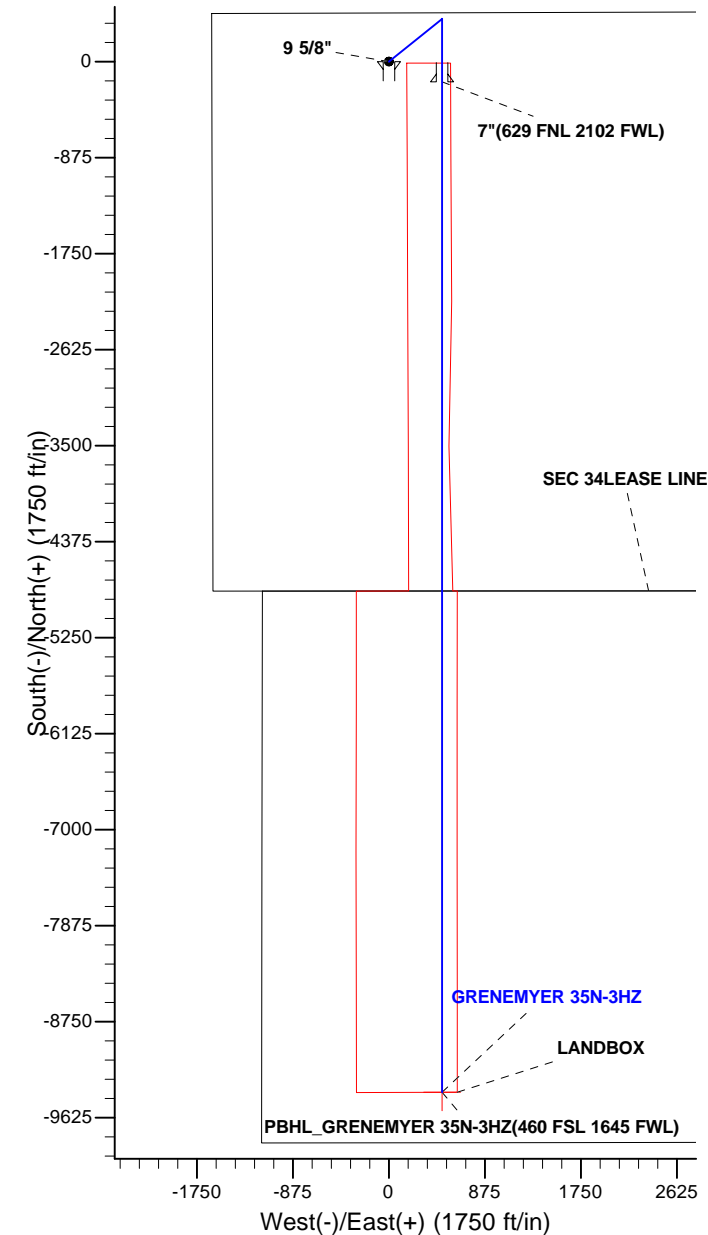
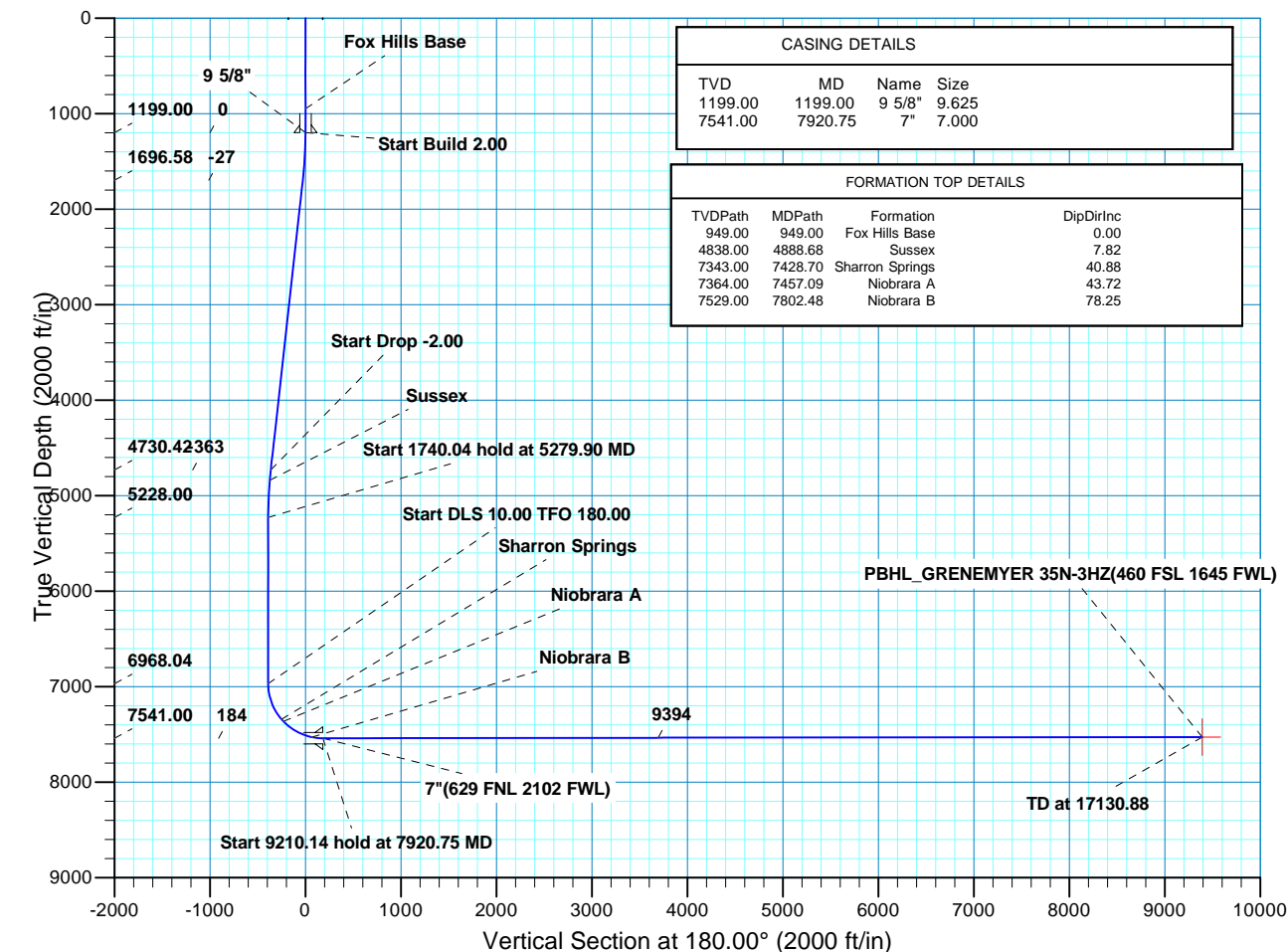


WELL DETAILS: GRENEMYER 35N-3HZ									
GL 5047 & KB 17 @ 5064.00ft (ASSUMED)									
		+N/-S	+E/-W	Northing	Easting	Latitude	Longitude		
		0.00	0.00	1248412.98	3173583.51	40.0136149	-104.8802700		
SECTION DETAILS									
MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
1199.00	0.00	0.00	1199.00	0.00	0.00	0.00	0.00	0.00	
1699.12	10.00	51.18	1696.58	27.29	33.93	2.00	51.18	-27.29	
4779.78	10.00	51.18	4730.42	362.71	450.83	0.00	0.00	-362.71	
5279.90	0.00	0.00	5228.00	390.00	484.75	2.00	180.00	-390.00	
7019.94	0.00	0.00	6968.04	390.00	484.75	0.00	0.00	-390.00	
7920.75	90.08	180.00	7541.00	-183.77	484.75	10.00	180.00	183.77	
17130.88	90.08	180.00	7528.00	-9393.89	484.75	0.00	0.009393.89		PBHL_GRENEMYER 35N-3HZ(460 FSL 1645 FWL)
DESIGN TARGET DETAILS									
Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape	
PBHL	7528.00	-9393.89	484.75	1239022.72	3174133.90	39.9878270	-104.8785400	Point	
- plan hits target center									





Scientific Drilling

US ROCKIES REGION PLANNING

COLORADO NORTHERN ZONE - 83

GRENNEMYER 35C-3HZ PAD

GRENNEMYER 35N-3HZ

OH

Plan: PLAN #1 PRELIMINARY

Standard Planning Report

26 August, 2013

Database:	EDM5000-RobertS-Local	Local Co-ordinate Reference:	Well GRENEMYER 35N-3HZ
Company:	US ROCKIES REGION PLANNING	TVD Reference:	GL 5047 & KB 17 @ 5064.00ft (ASSUMED)
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	GL 5047 & KB 17 @ 5064.00ft (ASSUMED)
Site:	GRENEMYER 35C-3HZ PAD	North Reference:	True
Well:	GRENEMYER 35N-3HZ	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	GRENEMYER 35C-3HZ PAD, NENW SEC 34 T1N R67W			
Site Position:		Northing:	1,248,412.57 usft	Latitude: 40.0136150
From:	Lat/Long	Easting:	3,173,523.57 usft	Longitude: -104.8804840
Position Uncertainty:	0.00 ft	Slot Radius:	13.200 in	Grid Convergence: 0.40 °

Well	GRENEMYER 35N-3HZ, 445 FNL 1615 FWL			
Well Position	+N/-S	-0.02 ft	Northing:	1,248,412.98 usft
	+E/-W	59.94 ft	Easting:	3,173,583.51 usft
Position Uncertainty		0.00 ft	Wellhead Elevation:	Ground Level: 5,047.00 ft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	BGGM2013	2013/08/26	8.63	66.63	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	180.00

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	
1,199.00	0.00	0.00	1,199.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,699.12	10.00	51.18	1,696.58	27.29	33.93	2.00	2.00	0.00	51.18	
4,779.78	10.00	51.18	4,730.42	362.71	450.83	0.00	0.00	0.00	0.00	
5,279.90	0.00	0.00	5,228.00	390.00	484.75	2.00	-2.00	0.00	180.00	
7,019.94	0.00	0.00	6,968.04	390.00	484.75	0.00	0.00	0.00	0.00	
7,920.75	90.08	180.00	7,541.00	-183.77	484.75	10.00	10.00	19.98	180.00	
17,130.88	90.08	180.00	7,528.00	-9,393.89	484.75	0.00	0.00	0.00	0.00	PBHL_GRENEMYER

Database:	EDM5000-RobertS-Local	Local Co-ordinate Reference:	Well GRENNEMYER 35N-3HZ
Company:	US ROCKIES REGION PLANNING	TVD Reference:	GL 5047 & KB 17 @ 5064.00ft (ASSUMED)
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	GL 5047 & KB 17 @ 5064.00ft (ASSUMED)
Site:	GRENNEMYER 35C-3HZ PAD	North Reference:	True
Well:	GRENNEMYER 35N-3HZ	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
949.00	0.00	0.00	949.00	0.00	0.00	0.00	0.00	0.00	0.00
Fox Hills Base									
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
1,199.00	0.00	0.00	1,199.00	0.00	0.00	0.00	0.00	0.00	0.00
9 5/8"									
1,200.00	0.02	51.18	1,200.00	0.00	0.00	0.00	2.00	2.00	0.00
1,300.00	2.02	51.18	1,299.98	1.12	1.39	-1.12	2.00	2.00	0.00
1,400.00	4.02	51.18	1,399.84	4.42	5.49	-4.42	2.00	2.00	0.00
1,500.00	6.02	51.18	1,499.45	9.90	12.31	-9.90	2.00	2.00	0.00
1,600.00	8.02	51.18	1,598.69	17.56	21.83	-17.56	2.00	2.00	0.00
1,699.12	10.00	51.18	1,696.58	27.29	33.93	-27.29	2.00	2.00	0.00
1,700.00	10.00	51.18	1,697.45	27.39	34.05	-27.39	0.00	0.00	0.00
1,800.00	10.00	51.18	1,795.93	38.28	47.58	-38.28	0.00	0.00	0.00
1,900.00	10.00	51.18	1,894.41	49.17	61.11	-49.17	0.00	0.00	0.00
2,000.00	10.00	51.18	1,992.89	60.05	74.64	-60.05	0.00	0.00	0.00
2,100.00	10.00	51.18	2,091.37	70.94	88.18	-70.94	0.00	0.00	0.00
2,200.00	10.00	51.18	2,189.85	81.83	101.71	-81.83	0.00	0.00	0.00
2,300.00	10.00	51.18	2,288.33	92.72	115.24	-92.72	0.00	0.00	0.00
2,400.00	10.00	51.18	2,386.81	103.60	128.78	-103.60	0.00	0.00	0.00
2,500.00	10.00	51.18	2,485.29	114.49	142.31	-114.49	0.00	0.00	0.00
2,600.00	10.00	51.18	2,583.77	125.38	155.84	-125.38	0.00	0.00	0.00
2,700.00	10.00	51.18	2,682.25	136.27	169.37	-136.27	0.00	0.00	0.00
2,800.00	10.00	51.18	2,780.73	147.15	182.91	-147.15	0.00	0.00	0.00
2,900.00	10.00	51.18	2,879.21	158.04	196.44	-158.04	0.00	0.00	0.00
3,000.00	10.00	51.18	2,977.69	168.93	209.97	-168.93	0.00	0.00	0.00
3,100.00	10.00	51.18	3,076.17	179.82	223.51	-179.82	0.00	0.00	0.00
3,200.00	10.00	51.18	3,174.65	190.71	237.04	-190.71	0.00	0.00	0.00
3,300.00	10.00	51.18	3,273.13	201.59	250.57	-201.59	0.00	0.00	0.00
3,400.00	10.00	51.18	3,371.61	212.48	264.10	-212.48	0.00	0.00	0.00
3,500.00	10.00	51.18	3,470.09	223.37	277.64	-223.37	0.00	0.00	0.00
3,600.00	10.00	51.18	3,568.57	234.26	291.17	-234.26	0.00	0.00	0.00
3,700.00	10.00	51.18	3,667.05	245.14	304.70	-245.14	0.00	0.00	0.00
3,800.00	10.00	51.18	3,765.53	256.03	318.24	-256.03	0.00	0.00	0.00
3,900.00	10.00	51.18	3,864.01	266.92	331.77	-266.92	0.00	0.00	0.00
4,000.00	10.00	51.18	3,962.49	277.81	345.30	-277.81	0.00	0.00	0.00
4,100.00	10.00	51.18	4,060.97	288.69	358.83	-288.69	0.00	0.00	0.00
4,200.00	10.00	51.18	4,159.45	299.58	372.37	-299.58	0.00	0.00	0.00
4,300.00	10.00	51.18	4,257.93	310.47	385.90	-310.47	0.00	0.00	0.00
4,400.00	10.00	51.18	4,356.41	321.36	399.43	-321.36	0.00	0.00	0.00
4,500.00	10.00	51.18	4,454.89	332.24	412.96	-332.24	0.00	0.00	0.00
4,600.00	10.00	51.18	4,553.37	343.13	426.50	-343.13	0.00	0.00	0.00
4,700.00	10.00	51.18	4,651.85	354.02	440.03	-354.02	0.00	0.00	0.00
4,779.78	10.00	51.18	4,730.42	362.71	450.83	-362.71	0.00	0.00	0.00

Database:	EDM5000-RobertS-Local	Local Co-ordinate Reference:	Well GRENEMYER 35N-3HZ
Company:	US ROCKIES REGION PLANNING	TVD Reference:	GL 5047 & KB 17 @ 5064.00ft (ASSUMED)
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	GL 5047 & KB 17 @ 5064.00ft (ASSUMED)
Site:	GRENEMYER 35C-3HZ PAD	North Reference:	True
Well:	GRENEMYER 35N-3HZ	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)
4,800.00	9.60	51.18	4,750.34	364.86	453.51	-364.86	2.00	-2.00	0.00
4,888.68	7.82	51.18	4,838.00	373.28	463.97	-373.28	2.00	-2.00	0.00
Sussex									
4,900.00	7.60	51.18	4,849.22	374.23	465.16	-374.23	2.00	-2.00	0.00
5,000.00	5.60	51.18	4,948.55	381.44	474.11	-381.44	2.00	-2.00	0.00
5,100.00	3.60	51.18	5,048.22	386.46	480.35	-386.46	2.00	-2.00	0.00
5,200.00	1.60	51.18	5,148.11	389.30	483.89	-389.30	2.00	-2.00	0.00
5,279.90	0.00	0.00	5,228.00	390.00	484.75	-390.00	2.00	-2.00	0.00
5,300.00	0.00	0.00	5,248.10	390.00	484.75	-390.00	0.00	0.00	0.00
5,400.00	0.00	0.00	5,348.10	390.00	484.75	-390.00	0.00	0.00	0.00
5,500.00	0.00	0.00	5,448.10	390.00	484.75	-390.00	0.00	0.00	0.00
5,600.00	0.00	0.00	5,548.10	390.00	484.75	-390.00	0.00	0.00	0.00
5,700.00	0.00	0.00	5,648.10	390.00	484.75	-390.00	0.00	0.00	0.00
5,800.00	0.00	0.00	5,748.10	390.00	484.75	-390.00	0.00	0.00	0.00
5,900.00	0.00	0.00	5,848.10	390.00	484.75	-390.00	0.00	0.00	0.00
6,000.00	0.00	0.00	5,948.10	390.00	484.75	-390.00	0.00	0.00	0.00
6,100.00	0.00	0.00	6,048.10	390.00	484.75	-390.00	0.00	0.00	0.00
6,200.00	0.00	0.00	6,148.10	390.00	484.75	-390.00	0.00	0.00	0.00
6,300.00	0.00	0.00	6,248.10	390.00	484.75	-390.00	0.00	0.00	0.00
6,400.00	0.00	0.00	6,348.10	390.00	484.75	-390.00	0.00	0.00	0.00
6,500.00	0.00	0.00	6,448.10	390.00	484.75	-390.00	0.00	0.00	0.00
6,600.00	0.00	0.00	6,548.10	390.00	484.75	-390.00	0.00	0.00	0.00
6,700.00	0.00	0.00	6,648.10	390.00	484.75	-390.00	0.00	0.00	0.00
6,800.00	0.00	0.00	6,748.10	390.00	484.75	-390.00	0.00	0.00	0.00
6,900.00	0.00	0.00	6,848.10	390.00	484.75	-390.00	0.00	0.00	0.00
7,000.00	0.00	0.00	6,948.10	390.00	484.75	-390.00	0.00	0.00	0.00
7,019.94	0.00	0.00	6,968.04	390.00	484.75	-390.00	0.00	0.00	0.00
7,100.00	8.01	180.00	7,047.84	384.42	484.75	-384.42	10.00	10.00	0.00
7,200.00	18.01	180.00	7,145.15	361.94	484.75	-361.94	10.00	10.00	0.00
7,300.00	28.01	180.00	7,237.08	322.90	484.75	-322.90	10.00	10.00	0.00
7,400.00	38.01	180.00	7,320.84	268.50	484.75	-268.50	10.00	10.00	0.00
7,428.70	40.88	180.00	7,343.00	250.27	484.75	-250.27	10.00	10.00	0.00
Sharron Springs									
7,457.09	43.72	180.00	7,364.00	231.16	484.75	-231.16	10.00	10.00	0.00
Niobrara A									
7,500.00	48.01	180.00	7,393.87	200.38	484.75	-200.38	10.00	10.00	0.00
7,600.00	58.01	180.00	7,453.97	120.61	484.75	-120.61	10.00	10.00	0.00
7,700.00	68.01	180.00	7,499.30	31.62	484.75	-31.62	10.00	10.00	0.00
7,800.00	78.01	180.00	7,528.49	-63.89	484.75	63.89	10.00	10.00	0.00
7,802.48	78.25	180.00	7,529.00	-66.32	484.75	66.32	10.00	10.00	0.00
Niobrara B									
7,900.00	88.01	180.00	7,540.65	-163.02	484.75	163.02	10.00	10.00	0.00
7,920.75	90.08	180.00	7,541.00	-183.77	484.75	183.77	10.00	10.00	0.00
7"(629 FNL 2102 FWL)									
8,000.00	90.08	180.00	7,540.89	-263.02	484.75	263.02	0.00	0.00	0.00
8,100.00	90.08	180.00	7,540.74	-363.02	484.75	363.02	0.00	0.00	0.00
8,200.00	90.08	180.00	7,540.60	-463.02	484.75	463.02	0.00	0.00	0.00
8,300.00	90.08	180.00	7,540.46	-563.02	484.75	563.02	0.00	0.00	0.00
8,400.00	90.08	180.00	7,540.32	-663.02	484.75	663.02	0.00	0.00	0.00
8,500.00	90.08	180.00	7,540.18	-763.02	484.75	763.02	0.00	0.00	0.00
8,600.00	90.08	180.00	7,540.04	-863.02	484.75	863.02	0.00	0.00	0.00
8,700.00	90.08	180.00	7,539.90	-963.02	484.75	963.02	0.00	0.00	0.00
8,800.00	90.08	180.00	7,539.76	-1,063.02	484.75	1,063.02	0.00	0.00	0.00

Database:	EDM5000-RobertS-Local	Local Co-ordinate Reference:	Well GRENEMYER 35N-3HZ
Company:	US ROCKIES REGION PLANNING	TVD Reference:	GL 5047 & KB 17 @ 5064.00ft (ASSUMED)
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	GL 5047 & KB 17 @ 5064.00ft (ASSUMED)
Site:	GRENEMYER 35C-3HZ PAD	North Reference:	True
Well:	GRENEMYER 35N-3HZ	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)
8,900.00	90.08	180.00	7,539.62	-1,163.02	484.75	1,163.02	0.00	0.00	0.00
9,000.00	90.08	180.00	7,539.47	-1,263.02	484.75	1,263.02	0.00	0.00	0.00
9,100.00	90.08	180.00	7,539.33	-1,363.02	484.75	1,363.02	0.00	0.00	0.00
9,200.00	90.08	180.00	7,539.19	-1,463.02	484.75	1,463.02	0.00	0.00	0.00
9,300.00	90.08	180.00	7,539.05	-1,563.02	484.75	1,563.02	0.00	0.00	0.00
9,400.00	90.08	180.00	7,538.91	-1,663.02	484.75	1,663.02	0.00	0.00	0.00
9,500.00	90.08	180.00	7,538.77	-1,763.02	484.75	1,763.02	0.00	0.00	0.00
9,600.00	90.08	180.00	7,538.63	-1,863.02	484.75	1,863.02	0.00	0.00	0.00
9,700.00	90.08	180.00	7,538.49	-1,963.02	484.75	1,963.02	0.00	0.00	0.00
9,800.00	90.08	180.00	7,538.35	-2,063.02	484.75	2,063.02	0.00	0.00	0.00
9,900.00	90.08	180.00	7,538.20	-2,163.02	484.75	2,163.02	0.00	0.00	0.00
10,000.00	90.08	180.00	7,538.06	-2,263.02	484.75	2,263.02	0.00	0.00	0.00
10,100.00	90.08	180.00	7,537.92	-2,363.02	484.75	2,363.02	0.00	0.00	0.00
10,200.00	90.08	180.00	7,537.78	-2,463.02	484.75	2,463.02	0.00	0.00	0.00
10,300.00	90.08	180.00	7,537.64	-2,563.02	484.75	2,563.02	0.00	0.00	0.00
10,400.00	90.08	180.00	7,537.50	-2,663.02	484.75	2,663.02	0.00	0.00	0.00
10,500.00	90.08	180.00	7,537.36	-2,763.02	484.75	2,763.02	0.00	0.00	0.00
10,600.00	90.08	180.00	7,537.22	-2,863.02	484.75	2,863.02	0.00	0.00	0.00
10,700.00	90.08	180.00	7,537.08	-2,963.02	484.75	2,963.02	0.00	0.00	0.00
10,800.00	90.08	180.00	7,536.93	-3,063.02	484.75	3,063.02	0.00	0.00	0.00
10,900.00	90.08	180.00	7,536.79	-3,163.02	484.75	3,163.02	0.00	0.00	0.00
11,000.00	90.08	180.00	7,536.65	-3,263.02	484.75	3,263.02	0.00	0.00	0.00
11,100.00	90.08	180.00	7,536.51	-3,363.02	484.75	3,363.02	0.00	0.00	0.00
11,200.00	90.08	180.00	7,536.37	-3,463.02	484.75	3,463.02	0.00	0.00	0.00
11,300.00	90.08	180.00	7,536.23	-3,563.02	484.75	3,563.02	0.00	0.00	0.00
11,400.00	90.08	180.00	7,536.09	-3,663.02	484.75	3,663.02	0.00	0.00	0.00
11,500.00	90.08	180.00	7,535.95	-3,763.02	484.75	3,763.02	0.00	0.00	0.00
11,600.00	90.08	180.00	7,535.81	-3,863.02	484.75	3,863.02	0.00	0.00	0.00
11,700.00	90.08	180.00	7,535.66	-3,963.02	484.75	3,963.02	0.00	0.00	0.00
11,800.00	90.08	180.00	7,535.52	-4,063.02	484.75	4,063.02	0.00	0.00	0.00
11,900.00	90.08	180.00	7,535.38	-4,163.02	484.75	4,163.02	0.00	0.00	0.00
12,000.00	90.08	180.00	7,535.24	-4,263.02	484.75	4,263.02	0.00	0.00	0.00
12,100.00	90.08	180.00	7,535.10	-4,363.02	484.75	4,363.02	0.00	0.00	0.00
12,200.00	90.08	180.00	7,534.96	-4,463.02	484.75	4,463.02	0.00	0.00	0.00
12,300.00	90.08	180.00	7,534.82	-4,563.02	484.75	4,563.02	0.00	0.00	0.00
12,400.00	90.08	180.00	7,534.68	-4,663.02	484.75	4,663.02	0.00	0.00	0.00
12,500.00	90.08	180.00	7,534.54	-4,763.02	484.75	4,763.02	0.00	0.00	0.00
12,600.00	90.08	180.00	7,534.39	-4,863.02	484.75	4,863.02	0.00	0.00	0.00
12,700.00	90.08	180.00	7,534.25	-4,963.02	484.75	4,963.02	0.00	0.00	0.00
12,800.00	90.08	180.00	7,534.11	-5,063.02	484.75	5,063.02	0.00	0.00	0.00
12,900.00	90.08	180.00	7,533.97	-5,163.02	484.75	5,163.02	0.00	0.00	0.00
13,000.00	90.08	180.00	7,533.83	-5,263.02	484.75	5,263.02	0.00	0.00	0.00
13,100.00	90.08	180.00	7,533.69	-5,363.02	484.75	5,363.02	0.00	0.00	0.00
13,200.00	90.08	180.00	7,533.55	-5,463.02	484.75	5,463.02	0.00	0.00	0.00
13,300.00	90.08	180.00	7,533.41	-5,563.02	484.75	5,563.02	0.00	0.00	0.00
13,400.00	90.08	180.00	7,533.27	-5,663.02	484.75	5,663.02	0.00	0.00	0.00
13,500.00	90.08	180.00	7,533.12	-5,763.02	484.75	5,763.02	0.00	0.00	0.00
13,600.00	90.08	180.00	7,532.98	-5,863.02	484.75	5,863.02	0.00	0.00	0.00
13,700.00	90.08	180.00	7,532.84	-5,963.02	484.75	5,963.02	0.00	0.00	0.00
13,800.00	90.08	180.00	7,532.70	-6,063.02	484.75	6,063.02	0.00	0.00	0.00
13,900.00	90.08	180.00	7,532.56	-6,163.01	484.75	6,163.01	0.00	0.00	0.00
14,000.00	90.08	180.00	7,532.42	-6,263.01	484.75	6,263.01	0.00	0.00	0.00
14,100.00	90.08	180.00	7,532.28	-6,363.01	484.75	6,363.01	0.00	0.00	0.00
14,200.00	90.08	180.00	7,532.14	-6,463.01	484.75	6,463.01	0.00	0.00	0.00

Database:	EDM5000-RobertS-Local	Local Co-ordinate Reference:	Well GRENEMYER 35N-3HZ
Company:	US ROCKIES REGION PLANNING	TVD Reference:	GL 5047 & KB 17 @ 5064.00ft (ASSUMED)
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	GL 5047 & KB 17 @ 5064.00ft (ASSUMED)
Site:	GRENEMYER 35C-3HZ PAD	North Reference:	True
Well:	GRENEMYER 35N-3HZ	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)
14,300.00	90.08	180.00	7,532.00	-6,563.01	484.75	6,563.01	0.00	0.00	0.00
14,400.00	90.08	180.00	7,531.85	-6,663.01	484.75	6,663.01	0.00	0.00	0.00
14,500.00	90.08	180.00	7,531.71	-6,763.01	484.75	6,763.01	0.00	0.00	0.00
14,600.00	90.08	180.00	7,531.57	-6,863.01	484.75	6,863.01	0.00	0.00	0.00
14,700.00	90.08	180.00	7,531.43	-6,963.01	484.75	6,963.01	0.00	0.00	0.00
14,800.00	90.08	180.00	7,531.29	-7,063.01	484.75	7,063.01	0.00	0.00	0.00
14,900.00	90.08	180.00	7,531.15	-7,163.01	484.75	7,163.01	0.00	0.00	0.00
15,000.00	90.08	180.00	7,531.01	-7,263.01	484.75	7,263.01	0.00	0.00	0.00
15,100.00	90.08	180.00	7,530.87	-7,363.01	484.75	7,363.01	0.00	0.00	0.00
15,200.00	90.08	180.00	7,530.73	-7,463.01	484.75	7,463.01	0.00	0.00	0.00
15,300.00	90.08	180.00	7,530.58	-7,563.01	484.75	7,563.01	0.00	0.00	0.00
15,400.00	90.08	180.00	7,530.44	-7,663.01	484.75	7,663.01	0.00	0.00	0.00
15,500.00	90.08	180.00	7,530.30	-7,763.01	484.75	7,763.01	0.00	0.00	0.00
15,600.00	90.08	180.00	7,530.16	-7,863.01	484.75	7,863.01	0.00	0.00	0.00
15,700.00	90.08	180.00	7,530.02	-7,963.01	484.75	7,963.01	0.00	0.00	0.00
15,800.00	90.08	180.00	7,529.88	-8,063.01	484.75	8,063.01	0.00	0.00	0.00
15,900.00	90.08	180.00	7,529.74	-8,163.01	484.75	8,163.01	0.00	0.00	0.00
16,000.00	90.08	180.00	7,529.60	-8,263.01	484.75	8,263.01	0.00	0.00	0.00
16,100.00	90.08	180.00	7,529.45	-8,363.01	484.75	8,363.01	0.00	0.00	0.00
16,200.00	90.08	180.00	7,529.31	-8,463.01	484.75	8,463.01	0.00	0.00	0.00
16,300.00	90.08	180.00	7,529.17	-8,563.01	484.75	8,563.01	0.00	0.00	0.00
16,400.00	90.08	180.00	7,529.03	-8,663.01	484.75	8,663.01	0.00	0.00	0.00
16,500.00	90.08	180.00	7,528.89	-8,763.01	484.75	8,763.01	0.00	0.00	0.00
16,600.00	90.08	180.00	7,528.75	-8,863.01	484.75	8,863.01	0.00	0.00	0.00
16,700.00	90.08	180.00	7,528.61	-8,963.01	484.75	8,963.01	0.00	0.00	0.00
16,800.00	90.08	180.00	7,528.47	-9,063.01	484.75	9,063.01	0.00	0.00	0.00
16,900.00	90.08	180.00	7,528.33	-9,163.01	484.75	9,163.01	0.00	0.00	0.00
17,000.00	90.08	180.00	7,528.18	-9,263.01	484.75	9,263.01	0.00	0.00	0.00
17,100.00	90.08	180.00	7,528.04	-9,363.01	484.75	9,363.01	0.00	0.00	0.00
17,130.88	90.08	180.00	7,528.00	-9,393.89	484.75	9,393.89	0.00	0.00	0.00
PBHL_GRENEMYER 35N-3HZ(460 FSL 1645 FWL)									

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_GRENEMYER 35N-3HZ	0.00	0.00	7,528.00	-9,393.89	484.75	1,239,022.72	3,174,133.90	39.9878270	-104.8785400
- plan hits target center									
- Point									

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)	
1,199.00	1,199.00	9 5/8"	9.625	12.250	
7,920.75	7,541.00	7"(629 FNL 2102 FWL)	7.000	7.500	

Database:	EDM5000-RobertS-Local	Local Co-ordinate Reference:	Well GRENEMYER 35N-3HZ
Company:	US ROCKIES REGION PLANNING	TVD Reference:	GL 5047 & KB 17 @ 5064.00ft (ASSUMED)
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	GL 5047 & KB 17 @ 5064.00ft (ASSUMED)
Site:	GRENEMYER 35C-3HZ PAD	North Reference:	True
Well:	GRENEMYER 35N-3HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	PLAN #1 PRELIMINARY		

Formations						
	Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
	949.00	949.00	Fox Hills Base		0.00	
	4,888.68	4,838.00	Sussex			
	7,428.70	7,343.00	Sharron Springs			
	7,457.09	7,364.00	Niobrara A			
	7,802.48	7,529.00	Niobrara B			