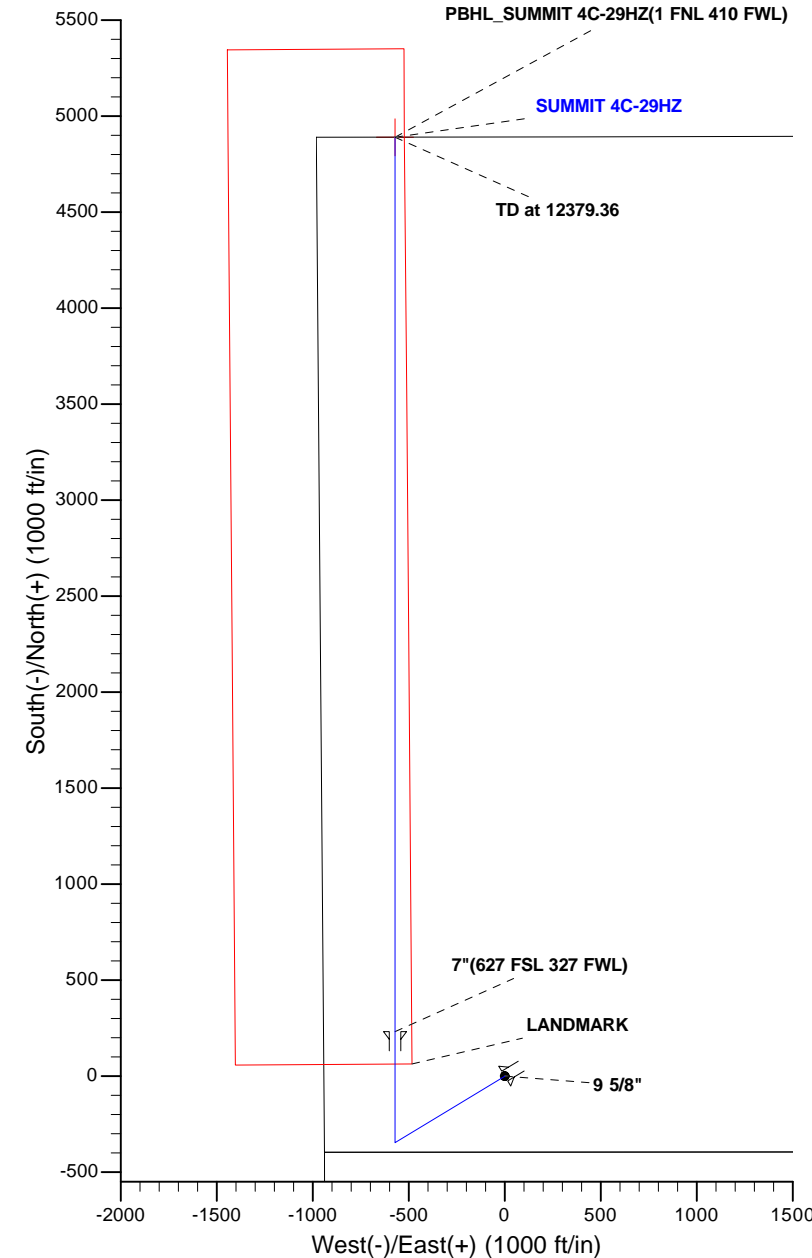
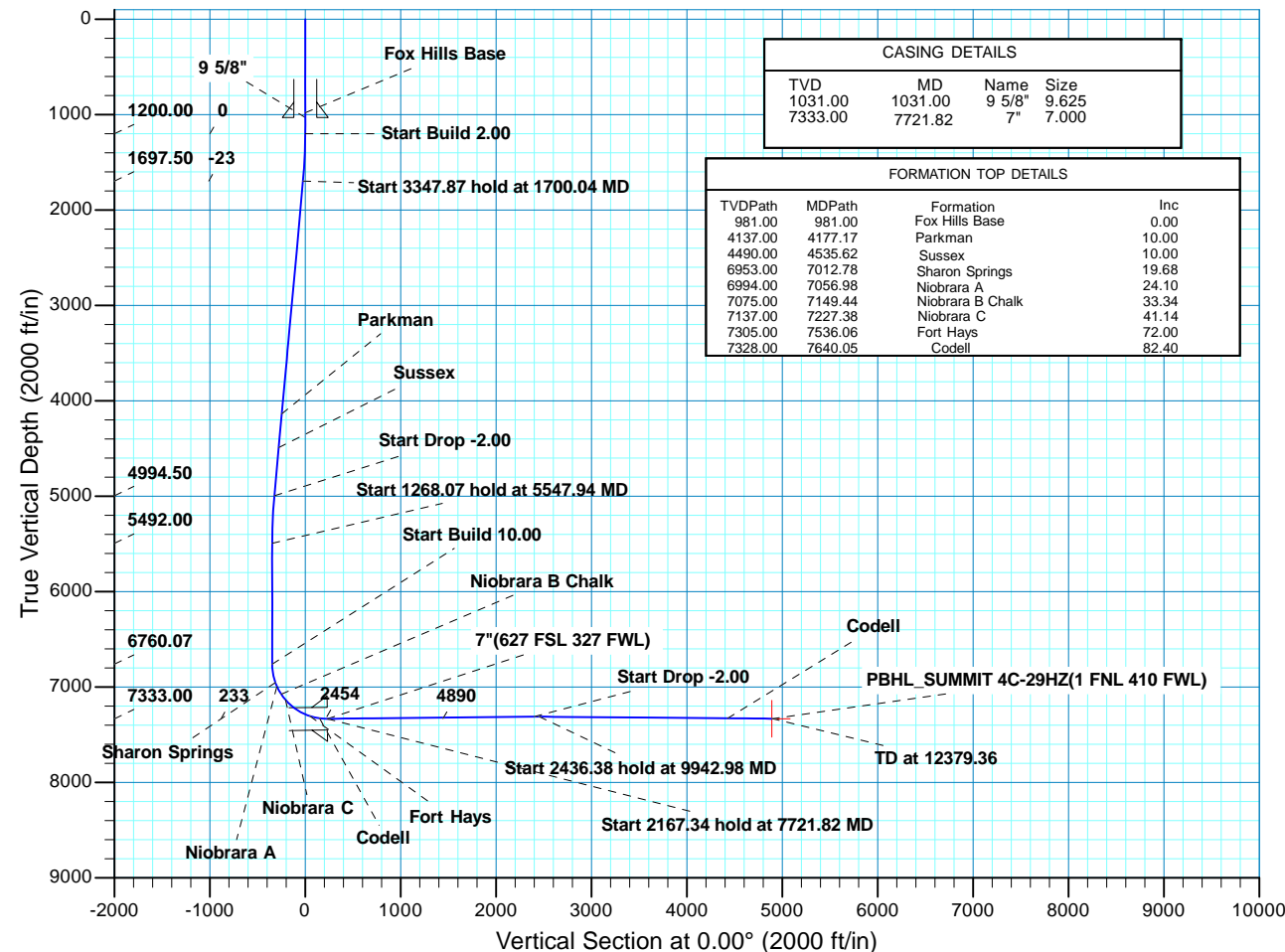


WELL DETAILS: SUMMIT 4C-29HZ											
GL 4946 & KB 17 @ 4963.00ft (ASSUMED)											
+N/-S 0.00		+E/-W 0.00		Northing 1281508.99		Easting 3225518.45		Latitude 40.1033199		Longitude -104.6937860	
SECTION DETAILS											
MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target		
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			
1200.00	0.00	0.00	1200.00	0.00	0.00	0.00	0.00	0.00			
1700.04	10.00	238.83	1697.50	-22.53	-37.24	2.00	238.83	-22.53			
5047.90	10.00	238.83	4994.50	-323.47	-534.69	0.00	0.00	-323.47			
5547.94	0.00	0.00	5492.00	-346.00	-571.93	2.00	180.00	-346.00			
6816.01	0.00	0.00	6760.07	-346.00	-571.93	0.00	0.00	-346.00			
7721.82	90.58	0.00	7333.00	232.77	-571.93	10.00	0.00	232.77			
9889.16	90.58	0.00	7311.00	2400.00	-571.93	0.00	0.00	2400.00			
9942.98	89.51	0.00	7310.96	2453.82	-571.93	2.00	180.00	2453.82			
12379.36	89.51	0.00	7332.00	4890.11	-571.93	0.00	0.00	4890.11	PBHL_SUMMIT 4C-29HZ(1 FNL 410 FWL)		
DESIGN TARGET DETAILS											
Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape			
PBHL	7332.00	4890.11	-571.93	1286393.69	3224902.08	40.1167440	-104.6958310	Point			
- plan hits target center											



US ROCKIES REGION PLANNING

COLORADO NORTHERN ZONE - 83

SUMMIT 13-29HZ PAD

SUMMIT 4C-29HZ

OH

Plan: PLAN #1 PRELIMINARY

Standard Planning Report

04 December, 2013

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well SUMMIT 4C-29HZ
Company:	US ROCKIES REGION PLANNING	TVD Reference:	GL 4946 & KB 17 @ 4963.00ft (ASSUMED)
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	GL 4946 & KB 17 @ 4963.00ft (ASSUMED)
Site:	SUMMIT 13-29HZ PAD	North Reference:	True
Well:	SUMMIT 4C-29HZ	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	SUMMIT 13-29HZ PAD, SWSW SECTION 29 T2N R65W			
Site Position:		Northing:	1,281,509.82 usft	Latitude: 40.1033200
From:	Lat/Long	Easting:	3,225,608.24 usft	Longitude: -104.6934650
Position Uncertainty:	0.00 ft	Slot Radius:	13.200 in	Grid Convergence: 0.52 °

Well	SUMMIT 4C-29HZ, 395 FSL 941 FWL			
Well Position	+N/-S	-0.02 ft	Northing:	1,281,508.99 usft
	+E/-W	-89.79 ft	Easting:	3,225,518.45 usft
Position Uncertainty		0.00 ft	Wellhead Elevation:	0.00 ft
			Ground Level:	4,946.00 ft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	BGGM2013	12/04/13	8.51	66.73	52,645

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	
1,200.00	0.00	0.00	1,200.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,700.04	10.00	238.83	1,697.50	-22.53	-37.24	2.00	2.00	0.00	238.83	
5,047.90	10.00	238.83	4,994.50	-323.47	-534.69	0.00	0.00	0.00	0.00	
5,547.94	0.00	0.00	5,492.00	-346.00	-571.93	2.00	-2.00	0.00	180.00	
6,816.01	0.00	0.00	6,760.07	-346.00	-571.93	0.00	0.00	0.00	0.00	
7,721.82	90.58	0.00	7,333.00	232.77	-571.93	10.00	10.00	0.00	0.00	
9,889.16	90.58	0.00	7,311.00	2,400.00	-571.93	0.00	0.00	0.00	0.00	
9,942.98	89.51	0.00	7,310.96	2,453.82	-571.93	2.00	-2.00	0.00	180.00	
12,379.36	89.51	0.00	7,332.00	4,890.11	-571.93	0.00	0.00	0.00	0.00	PBHL_SUMMIT 4C-2

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well SUMMIT 4C-29HZ
Company:	US ROCKIES REGION PLANNING	TVD Reference:	GL 4946 & KB 17 @ 4963.00ft (ASSUMED)
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	GL 4946 & KB 17 @ 4963.00ft (ASSUMED)
Site:	SUMMIT 13-29HZ PAD	North Reference:	True
Well:	SUMMIT 4C-29HZ	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
981.00	0.00	0.00	981.00	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
1,031.00	0.00	0.00	1,031.00	0.00	0.00	0.00	0.00	0.00	0.00
9 5/8"									
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
Start Build 2.00									
1,300.00	2.00	238.83	1,299.98	-0.90	-1.49	-0.90	2.00	2.00	0.00
1,400.00	4.00	238.83	1,399.84	-3.61	-5.97	-3.61	2.00	2.00	0.00
1,500.00	6.00	238.83	1,499.45	-8.12	-13.43	-8.12	2.00	2.00	0.00
1,600.00	8.00	238.83	1,598.70	-14.43	-23.85	-14.43	2.00	2.00	0.00
1,700.00	10.00	238.83	1,697.47	-22.53	-37.24	-22.53	2.00	2.00	0.00
1,700.04	10.00	238.83	1,697.50	-22.53	-37.24	-22.53	2.00	2.00	0.00
Start 3347.87 hold at 1700.04 MD									
1,800.00	10.00	238.83	1,795.95	-31.52	-52.10	-31.52	0.00	0.00	0.00
1,900.00	10.00	238.83	1,894.43	-40.51	-66.96	-40.51	0.00	0.00	0.00
2,000.00	10.00	238.83	1,992.91	-49.49	-81.81	-49.49	0.00	0.00	0.00
2,100.00	10.00	238.83	2,091.39	-58.48	-96.67	-58.48	0.00	0.00	0.00
2,200.00	10.00	238.83	2,189.87	-67.47	-111.53	-67.47	0.00	0.00	0.00
2,300.00	10.00	238.83	2,288.35	-76.46	-126.39	-76.46	0.00	0.00	0.00
2,400.00	10.00	238.83	2,386.83	-85.45	-141.25	-85.45	0.00	0.00	0.00
2,500.00	10.00	238.83	2,485.31	-94.44	-156.11	-94.44	0.00	0.00	0.00
2,600.00	10.00	238.83	2,583.79	-103.43	-170.97	-103.43	0.00	0.00	0.00
2,700.00	10.00	238.83	2,682.27	-112.42	-185.82	-112.42	0.00	0.00	0.00
2,800.00	10.00	238.83	2,780.75	-121.41	-200.68	-121.41	0.00	0.00	0.00
2,900.00	10.00	238.83	2,879.23	-130.40	-215.54	-130.40	0.00	0.00	0.00
3,000.00	10.00	238.83	2,977.71	-139.38	-230.40	-139.38	0.00	0.00	0.00
3,100.00	10.00	238.83	3,076.19	-148.37	-245.26	-148.37	0.00	0.00	0.00
3,200.00	10.00	238.83	3,174.67	-157.36	-260.12	-157.36	0.00	0.00	0.00
3,300.00	10.00	238.83	3,273.15	-166.35	-274.98	-166.35	0.00	0.00	0.00
3,400.00	10.00	238.83	3,371.63	-175.34	-289.84	-175.34	0.00	0.00	0.00
3,500.00	10.00	238.83	3,470.12	-184.33	-304.69	-184.33	0.00	0.00	0.00
3,600.00	10.00	238.83	3,568.60	-193.32	-319.55	-193.32	0.00	0.00	0.00
3,700.00	10.00	238.83	3,667.08	-202.31	-334.41	-202.31	0.00	0.00	0.00
3,800.00	10.00	238.83	3,765.56	-211.30	-349.27	-211.30	0.00	0.00	0.00
3,900.00	10.00	238.83	3,864.04	-220.28	-364.13	-220.28	0.00	0.00	0.00
4,000.00	10.00	238.83	3,962.52	-229.27	-378.99	-229.27	0.00	0.00	0.00
4,100.00	10.00	238.83	4,061.00	-238.26	-393.85	-238.26	0.00	0.00	0.00
4,177.17	10.00	238.83	4,137.00	-245.20	-405.31	-245.20	0.00	0.00	0.00
Parkman									
4,200.00	10.00	238.83	4,159.48	-247.25	-408.70	-247.25	0.00	0.00	0.00
4,300.00	10.00	238.83	4,257.96	-256.24	-423.56	-256.24	0.00	0.00	0.00
4,400.00	10.00	238.83	4,356.44	-265.23	-438.42	-265.23	0.00	0.00	0.00

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well SUMMIT 4C-29HZ
Company:	US ROCKIES REGION PLANNING	TVD Reference:	GL 4946 & KB 17 @ 4963.00ft (ASSUMED)
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	GL 4946 & KB 17 @ 4963.00ft (ASSUMED)
Site:	SUMMIT 13-29HZ PAD	North Reference:	True
Well:	SUMMIT 4C-29HZ	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)
4,500.00	10.00	238.83	4,454.92	-274.22	-453.28	-274.22	0.00	0.00	0.00
4,535.62	10.00	238.83	4,490.00	-277.42	-458.57	-277.42	0.00	0.00	0.00
Sussex									
4,600.00	10.00	238.83	4,553.40	-283.21	-468.14	-283.21	0.00	0.00	0.00
4,700.00	10.00	238.83	4,651.88	-292.20	-483.00	-292.20	0.00	0.00	0.00
4,800.00	10.00	238.83	4,750.36	-301.18	-497.86	-301.18	0.00	0.00	0.00
4,900.00	10.00	238.83	4,848.84	-310.17	-512.71	-310.17	0.00	0.00	0.00
5,000.00	10.00	238.83	4,947.32	-319.16	-527.57	-319.16	0.00	0.00	0.00
5,047.90	10.00	238.83	4,994.50	-323.47	-534.69	-323.47	0.00	0.00	0.00
Start Drop -2.00									
5,100.00	8.96	238.83	5,045.88	-327.91	-542.03	-327.91	2.00	-2.00	0.00
5,200.00	6.96	238.83	5,144.92	-335.08	-553.88	-335.08	2.00	-2.00	0.00
5,300.00	4.96	238.83	5,244.37	-340.45	-562.76	-340.45	2.00	-2.00	0.00
5,400.00	2.96	238.83	5,344.13	-344.02	-568.67	-344.02	2.00	-2.00	0.00
5,500.00	0.96	238.83	5,444.06	-345.79	-571.59	-345.79	2.00	-2.00	0.00
5,547.94	0.00	0.00	5,492.00	-346.00	-571.93	-346.00	2.00	-2.00	0.00
Start 1268.07 hold at 5547.94 MD									
5,600.00	0.00	0.00	5,544.06	-346.00	-571.93	-346.00	0.00	0.00	0.00
5,700.00	0.00	0.00	5,644.06	-346.00	-571.93	-346.00	0.00	0.00	0.00
5,800.00	0.00	0.00	5,744.06	-346.00	-571.93	-346.00	0.00	0.00	0.00
5,900.00	0.00	0.00	5,844.06	-346.00	-571.93	-346.00	0.00	0.00	0.00
6,000.00	0.00	0.00	5,944.06	-346.00	-571.93	-346.00	0.00	0.00	0.00
6,100.00	0.00	0.00	6,044.06	-346.00	-571.93	-346.00	0.00	0.00	0.00
6,200.00	0.00	0.00	6,144.06	-346.00	-571.93	-346.00	0.00	0.00	0.00
6,300.00	0.00	0.00	6,244.06	-346.00	-571.93	-346.00	0.00	0.00	0.00
6,400.00	0.00	0.00	6,344.06	-346.00	-571.93	-346.00	0.00	0.00	0.00
6,500.00	0.00	0.00	6,444.06	-346.00	-571.93	-346.00	0.00	0.00	0.00
6,600.00	0.00	0.00	6,544.06	-346.00	-571.93	-346.00	0.00	0.00	0.00
6,700.00	0.00	0.00	6,644.06	-346.00	-571.93	-346.00	0.00	0.00	0.00
6,800.00	0.00	0.00	6,744.06	-346.00	-571.93	-346.00	0.00	0.00	0.00
6,816.01	0.00	0.00	6,760.07	-346.00	-571.93	-346.00	0.00	0.00	0.00
Start Build 10.00									
6,900.00	8.40	0.00	6,843.76	-339.85	-571.93	-339.85	10.00	10.00	0.00
7,000.00	18.40	0.00	6,940.91	-316.71	-571.93	-316.71	10.00	10.00	0.00
7,012.78	19.68	0.00	6,953.00	-312.54	-571.93	-312.54	10.00	10.00	0.00
Sharon Springs									
7,056.98	24.10	0.00	6,994.00	-296.07	-571.93	-296.07	10.00	10.00	0.00
Niobrara A									
7,100.00	28.40	0.00	7,032.57	-277.05	-571.93	-277.05	10.00	10.00	0.00
7,149.44	33.34	0.00	7,075.00	-251.69	-571.93	-251.69	10.00	10.00	0.00
Niobrara B Chalk									
7,200.00	38.40	0.00	7,115.95	-222.07	-571.93	-222.07	10.00	10.00	0.00
7,227.38	41.14	0.00	7,137.00	-204.56	-571.93	-204.56	10.00	10.00	0.00
Niobrara C									
7,300.00	48.40	0.00	7,188.52	-153.45	-571.93	-153.45	10.00	10.00	0.00
7,400.00	58.40	0.00	7,248.07	-73.27	-571.93	-73.27	10.00	10.00	0.00
7,500.00	68.40	0.00	7,292.79	16.03	-571.93	16.03	10.00	10.00	0.00
7,536.06	72.00	0.00	7,305.00	49.95	-571.93	49.95	10.00	10.00	0.00
Fort Hays									
7,600.00	78.40	0.00	7,321.32	111.74	-571.93	111.74	10.00	10.00	0.00
7,640.05	82.40	0.00	7,328.00	151.22	-571.93	151.22	10.00	10.00	0.00
Codell									

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well SUMMIT 4C-29HZ
Company:	US ROCKIES REGION PLANNING	TVD Reference:	GL 4946 & KB 17 @ 4963.00ft (ASSUMED)
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	GL 4946 & KB 17 @ 4963.00ft (ASSUMED)
Site:	SUMMIT 13-29HZ PAD	North Reference:	True
Well:	SUMMIT 4C-29HZ	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)
7,700.00	88.40	0.00	7,332.80	210.95	-571.93	210.95	10.00	10.00	0.00
7,721.82	90.58	0.00	7,333.00	232.77	-571.93	232.77	10.00	10.00	0.00
Start 2167.34 hold at 7721.82 MD - 7"(627 FSL 327 FWL)									
7,800.00	90.58	0.00	7,332.20	310.94	-571.93	310.94	0.00	0.00	0.00
7,900.00	90.58	0.00	7,331.19	410.94	-571.93	410.94	0.00	0.00	0.00
8,000.00	90.58	0.00	7,330.17	510.93	-571.93	510.93	0.00	0.00	0.00
8,100.00	90.58	0.00	7,329.16	610.93	-571.93	610.93	0.00	0.00	0.00
8,200.00	90.58	0.00	7,328.15	710.92	-571.93	710.92	0.00	0.00	0.00
8,300.00	90.58	0.00	7,327.13	810.92	-571.93	810.92	0.00	0.00	0.00
8,400.00	90.58	0.00	7,326.12	910.91	-571.93	910.91	0.00	0.00	0.00
8,500.00	90.58	0.00	7,325.10	1,010.91	-571.93	1,010.91	0.00	0.00	0.00
8,600.00	90.58	0.00	7,324.09	1,110.90	-571.93	1,110.90	0.00	0.00	0.00
8,700.00	90.58	0.00	7,323.07	1,210.90	-571.93	1,210.90	0.00	0.00	0.00
8,800.00	90.58	0.00	7,322.06	1,310.89	-571.93	1,310.89	0.00	0.00	0.00
8,900.00	90.58	0.00	7,321.04	1,410.89	-571.93	1,410.89	0.00	0.00	0.00
9,000.00	90.58	0.00	7,320.03	1,510.88	-571.93	1,510.88	0.00	0.00	0.00
9,100.00	90.58	0.00	7,319.01	1,610.88	-571.93	1,610.88	0.00	0.00	0.00
9,200.00	90.58	0.00	7,318.00	1,710.87	-571.93	1,710.87	0.00	0.00	0.00
9,300.00	90.58	0.00	7,316.98	1,810.87	-571.93	1,810.87	0.00	0.00	0.00
9,400.00	90.58	0.00	7,315.97	1,910.86	-571.93	1,910.86	0.00	0.00	0.00
9,500.00	90.58	0.00	7,314.95	2,010.86	-571.93	2,010.86	0.00	0.00	0.00
9,600.00	90.58	0.00	7,313.94	2,110.85	-571.93	2,110.85	0.00	0.00	0.00
9,700.00	90.58	0.00	7,312.92	2,210.85	-571.93	2,210.85	0.00	0.00	0.00
9,800.00	90.58	0.00	7,311.91	2,310.84	-571.93	2,310.84	0.00	0.00	0.00
9,889.16	90.58	0.00	7,311.00	2,400.00	-571.93	2,400.00	0.00	0.00	0.00
Start Drop -2.00									
9,900.00	90.36	0.00	7,310.91	2,410.84	-571.93	2,410.84	2.00	-2.00	0.00
9,942.98	89.51	0.00	7,310.96	2,453.82	-571.93	2,453.82	2.00	-2.00	0.00
Start 2436.38 hold at 9942.98 MD									
10,000.00	89.51	0.00	7,311.45	2,510.83	-571.93	2,510.83	0.00	0.00	0.00
10,100.00	89.51	0.00	7,312.32	2,610.83	-571.93	2,610.83	0.00	0.00	0.00
10,200.00	89.51	0.00	7,313.18	2,710.83	-571.93	2,710.83	0.00	0.00	0.00
10,300.00	89.51	0.00	7,314.04	2,810.82	-571.93	2,810.82	0.00	0.00	0.00
10,400.00	89.51	0.00	7,314.91	2,910.82	-571.93	2,910.82	0.00	0.00	0.00
10,500.00	89.51	0.00	7,315.77	3,010.82	-571.93	3,010.82	0.00	0.00	0.00
10,600.00	89.51	0.00	7,316.63	3,110.81	-571.93	3,110.81	0.00	0.00	0.00
10,700.00	89.51	0.00	7,317.50	3,210.81	-571.93	3,210.81	0.00	0.00	0.00
10,800.00	89.51	0.00	7,318.36	3,310.80	-571.93	3,310.80	0.00	0.00	0.00
10,900.00	89.51	0.00	7,319.22	3,410.80	-571.93	3,410.80	0.00	0.00	0.00
11,000.00	89.51	0.00	7,320.09	3,510.80	-571.93	3,510.80	0.00	0.00	0.00
11,100.00	89.51	0.00	7,320.95	3,610.79	-571.93	3,610.79	0.00	0.00	0.00
11,200.00	89.51	0.00	7,321.82	3,710.79	-571.93	3,710.79	0.00	0.00	0.00
11,300.00	89.51	0.00	7,322.68	3,810.79	-571.93	3,810.79	0.00	0.00	0.00
11,400.00	89.51	0.00	7,323.54	3,910.78	-571.93	3,910.78	0.00	0.00	0.00
11,500.00	89.51	0.00	7,324.41	4,010.78	-571.93	4,010.78	0.00	0.00	0.00
11,600.00	89.51	0.00	7,325.27	4,110.77	-571.93	4,110.77	0.00	0.00	0.00
11,700.00	89.51	0.00	7,326.13	4,210.77	-571.93	4,210.77	0.00	0.00	0.00
11,800.00	89.51	0.00	7,327.00	4,310.77	-571.93	4,310.77	0.00	0.00	0.00
11,900.00	89.51	0.00	7,327.86	4,410.76	-571.93	4,410.76	0.00	0.00	0.00
12,000.00	89.51	0.00	7,328.72	4,510.76	-571.93	4,510.76	0.00	0.00	0.00
12,100.00	89.51	0.00	7,329.59	4,610.76	-571.93	4,610.76	0.00	0.00	0.00
12,200.00	89.51	0.00	7,330.45	4,710.75	-571.93	4,710.75	0.00	0.00	0.00
12,300.00	89.51	0.00	7,331.31	4,810.75	-571.93	4,810.75	0.00	0.00	0.00

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well SUMMIT 4C-29HZ
Company:	US ROCKIES REGION PLANNING	TVD Reference:	GL 4946 & KB 17 @ 4963.00ft (ASSUMED)
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	GL 4946 & KB 17 @ 4963.00ft (ASSUMED)
Site:	SUMMIT 13-29HZ PAD	North Reference:	True
Well:	SUMMIT 4C-29HZ	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)
12,379.36	89.51	0.00	7,332.00	4,890.11	-571.93	4,890.11	0.00	0.00	0.00
TD at 12379.36 - PBHL_SUMMIT 4C-29HZ(1 FNL 410 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_SUMMIT 4C-29H	0.00	0.00	7,332.00	4,890.11	-571.93	1,286,393.69	3,224,902.09	40.1167440	-104.6958310
- plan hits target center									
- Point									

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)	
1,031.00	1,031.00	9 5/8"	9.625	12.250	
7,721.82	7,333.00	7"(627 FSL 327 FWL)	7.000	7.500	

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
981.00	981.00	Fox Hills Base				
4,177.17	4,137.00	Parkman				
4,535.62	4,490.00	Sussex				
7,012.78	6,953.00	Sharon Springs				
7,056.98	6,994.00	Niobrara A				
7,149.44	7,075.00	Niobrara B Chalk				
7,227.38	7,137.00	Niobrara C				
7,536.06	7,305.00	Fort Hays				
7,640.05	7,328.00	Codell				

Plan Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
1,200.00	1,200.00	0.00	0.00	Start Build 2.00
1,700.04	1,697.50	-22.53	-37.24	Start 3347.87 hold at 1700.04 MD
5,047.90	4,994.50	-323.47	-534.69	Start Drop -2.00
5,547.94	5,492.00	-346.00	-571.93	Start 1268.07 hold at 5547.94 MD
6,816.01	6,760.07	-346.00	-571.93	Start Build 10.00
7,721.82	7,333.00	232.77	-571.93	Start 2167.34 hold at 7721.82 MD
9,889.16	7,311.00	2,400.00	-571.93	Start Drop -2.00
9,942.98	7,310.96	2,453.82	-571.93	Start 2436.38 hold at 9942.98 MD
12,379.36	7,332.00	4,890.11	-571.93	TD at 12379.36