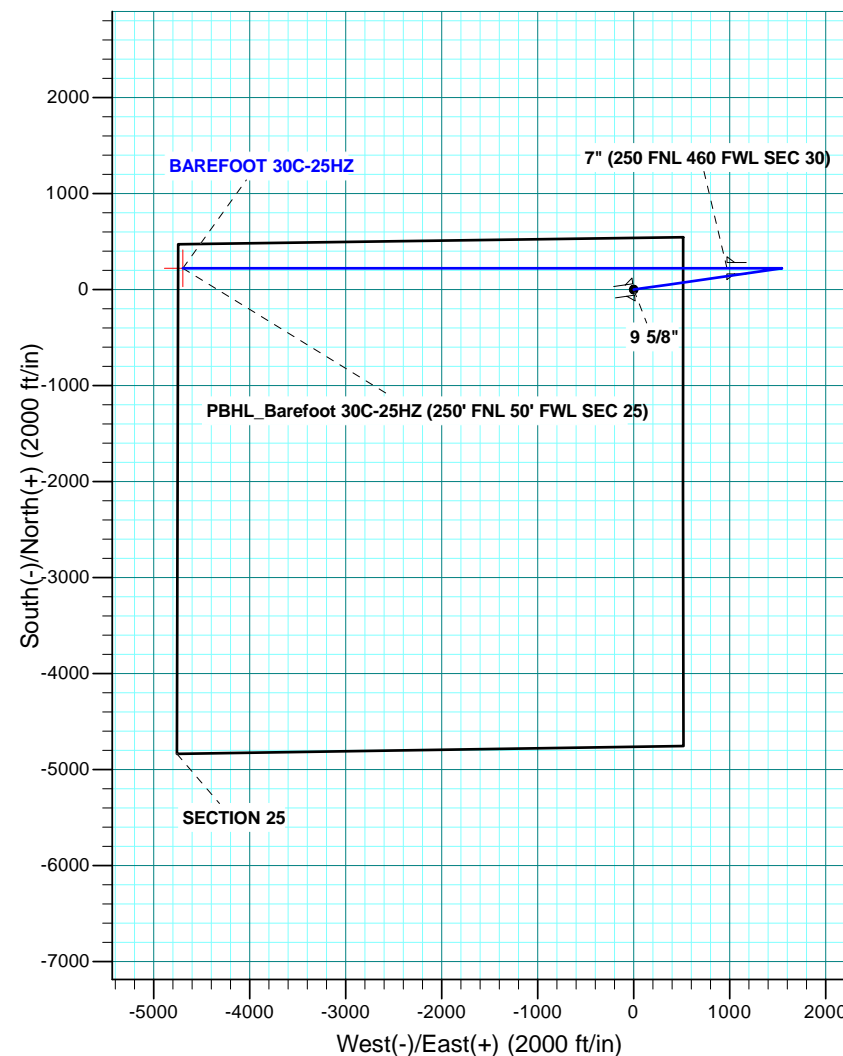
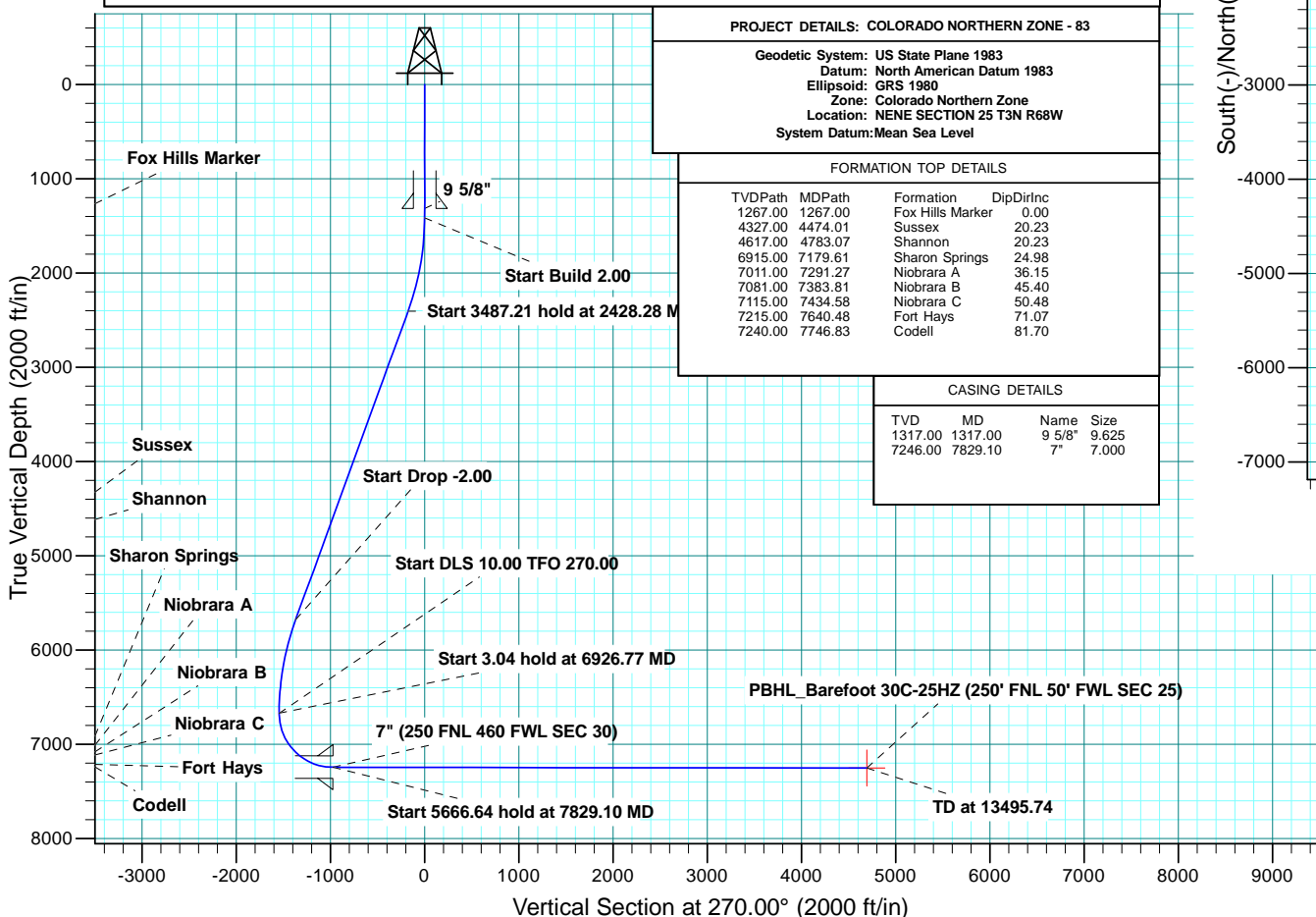


WELL DETAILS: BAREFOOT 30C-25HZ										
GL 4891 & KB 17 @ 4908.00ft (ASSUMED)										
		+N/-S 0.00	+E/-W 0.00	Northing 1317308.36	Easting 3155408.65	Latitude 40.2030700	Longitude -104.9436130			
SECTION DETAILS										
MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target	Annotation
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
1417.00	0.00	0.00	1417.00	0.00	0.00	0.00	0.00	0.00		Start Build 2.00
2428.28	20.23	81.82	2407.41	25.15	174.85	2.00	81.82	-174.85		Start 3487.21 hold at 2428.28 MD
5915.49	20.23	81.82	5679.59	196.79	1368.15	0.00	0.00	-1368.15		Start Drop -2.00
6926.77	0.00	0.00	6670.00	221.93	1543.00	2.00	180.00	-1543.00		Start 3.04 hold at 6926.77 MD
6929.81	0.00	0.00	6673.04	221.93	1543.00	0.00	0.00	-1543.00		Start DLS 10.00 TFO 270.00
7829.10	89.93	270.00	7246.00	221.93	970.75	10.00	270.00	-970.75		Start 5666.64 hold at 7829.10 MD
13495.74	89.93	270.00	7253.00	221.94	-4695.88	0.00	0.00	4695.88	PBHL_Barefoot 30C-25HZ	TD at 13495.74
DESIGN TARGET DETAILS										
Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape		
PBHL	7253.00	221.94	-4695.88	1317500.83	3150711.47	40.2036780	-104.9604250	Point		

PROJECT DETAILS: COLORADO NORTHERN ZONE - 83				
Geodetic System: US State Plane 1983				
Datum: North American Datum 1983				
Ellipsoid: GRS 1980				
Zone: Colorado Northern Zone				
Location: NENE SECTION 25 T3N R68W				
System Datum:Mean Sea Level				
FORMATION TOP DETAILS				
TVDPath	MDPath	Formation	DipDirInc	
1267.00	1267.00	Fox Hills Marker	0.00	
4327.00	4474.01	Sussex	20.23	
4617.00	4783.07	Shannon	20.23	
6915.00	7179.61	Sharon Springs	24.98	
7011.00	7291.27	Niobrara A	36.15	
7081.00	7383.81	Niobrara B	45.40	
7115.00	7434.58	Niobrara C	50.48	
7215.00	7640.48	Fort Hays	71.07	
7240.00	7746.83	Codell	81.70	
CASING DETAILS				
TVD	MD	Name	Size	
1317.00	1317.00	9 5/8"	9.625	
7246.00	7829.10	7"	7.000	





**Scientific Drilling**

# **US ROCKIES REGION PLANNING**

**COLORADO NORTHERN ZONE - 83**

**BAREFOOT 1-25HZ PAD**

**BAREFOOT 30C-25HZ**

**OH**

**Plan: PLAN #1 PRELIMINARY**

## **Standard Planning Report**

**15 April, 2014**

<b>Database:</b>	Denver Sales Office	<b>Local Co-ordinate Reference:</b>	Well BAREFOOT 30C-25HZ
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	GL 4891 & KB 17 @ 4908.00ft (ASSUMED)
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>MD Reference:</b>	GL 4891 & KB 17 @ 4908.00ft (ASSUMED)
<b>Site:</b>	BAREFOOT 1-25HZ PAD	<b>North Reference:</b>	True
<b>Well:</b>	BAREFOOT 30C-25HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	PLAN #1 PRELIMINARY		

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

<b>Site</b>	BAREFOOT 1-25HZ PAD, NENE SECTION 25 T3N R68W			
<b>Site Position:</b>		<b>Northing:</b>	1,317,308.36 usft	<b>Latitude:</b> 40.2030700
<b>From:</b>	Lat/Long	<b>Easting:</b>	3,155,408.65 usft	<b>Longitude:</b> -104.9436130
<b>Position Uncertainty:</b>	0.00 ft	<b>Slot Radius:</b>	13.200 in	<b>Grid Convergence:</b> 0.36 °

<b>Well</b>	BAREFOOT 30C-25HZ, 539' FNL 514' FEL			
<b>Well Position</b>	<b>+N/-S</b>	-0.01 ft	<b>Northing:</b>	1,317,308.36 usft
	<b>+E/-W</b>	0.00 ft	<b>Easting:</b>	3,155,408.65 usft
<b>Position Uncertainty</b>		0.00 ft	<b>Wellhead Elevation:</b>	0.00 ft
			<b>Ground Level:</b>	4,891.00 ft

<b>Wellbore</b>	OH				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	BGGM2013	2/5/2014	8.63	66.76	52,652

<b>Design</b>	PLAN #1 PRELIMINARY			
<b>Audit Notes:</b>				
<b>Version:</b>	<b>Phase:</b>	PLAN	<b>Tie On Depth:</b>	0.00
<b>Vertical Section:</b>	<b>Depth From (TVD) (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Direction (°)</b>
	0.00	0.00	0.00	270.00

<b>Plan Sections</b>										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,417.00	0.00	0.00	1,417.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,428.28	20.23	81.82	2,407.41	25.15	174.85	2.00	2.00	0.00	81.82	
5,915.49	20.23	81.82	5,679.59	196.79	1,368.15	0.00	0.00	0.00	0.00	
6,926.77	0.00	0.00	6,670.00	221.93	1,543.00	2.00	-2.00	0.00	180.00	
6,929.81	0.00	0.00	6,673.04	221.93	1,543.00	0.00	0.00	0.00	0.00	
7,829.10	89.93	270.00	7,246.00	221.93	970.75	10.00	10.00	-10.01	270.00	
13,495.74	89.93	270.00	7,253.00	221.94	-4,695.88	0.00	0.00	0.00	0.00	PBHL_Barefoot 30C-4

<b>Database:</b>	Denver Sales Office	<b>Local Co-ordinate Reference:</b>	Well BAREFOOT 30C-25HZ
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	GL 4891 & KB 17 @ 4908.00ft (ASSUMED)
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>MD Reference:</b>	GL 4891 & KB 17 @ 4908.00ft (ASSUMED)
<b>Site:</b>	BAREFOOT 1-25HZ PAD	<b>North Reference:</b>	True
<b>Well:</b>	BAREFOOT 30C-25HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	PLAN #1 PRELIMINARY		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
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
1,267.00	0.00	0.00	1,267.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Fox Hills Marker</b>									
1,300.00	0.00	0.00	1,300.00	0.00	0.00	0.00	0.00	0.00	0.00
1,317.00	0.00	0.00	1,317.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>9 5/8"</b>									
1,400.00	0.00	0.00	1,400.00	0.00	0.00	0.00	0.00	0.00	0.00
1,417.00	0.00	0.00	1,417.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Start Build 2.00</b>									
1,500.00	1.66	81.82	1,499.99	0.17	1.19	-1.19	2.00	2.00	0.00
1,600.00	3.66	81.82	1,599.88	0.83	5.78	-5.78	2.00	2.00	0.00
1,700.00	5.66	81.82	1,699.54	1.99	13.82	-13.82	2.00	2.00	0.00
1,800.00	7.66	81.82	1,798.86	3.64	25.30	-25.30	2.00	2.00	0.00
1,900.00	9.66	81.82	1,897.72	5.78	40.21	-40.21	2.00	2.00	0.00
2,000.00	11.66	81.82	1,995.98	8.42	58.52	-58.52	2.00	2.00	0.00
2,100.00	13.66	81.82	2,093.55	11.54	80.21	-80.21	2.00	2.00	0.00
2,200.00	15.66	81.82	2,190.29	15.14	105.26	-105.26	2.00	2.00	0.00
2,300.00	17.66	81.82	2,286.09	19.22	133.63	-133.63	2.00	2.00	0.00
2,400.00	19.66	81.82	2,380.82	23.78	165.30	-165.30	2.00	2.00	0.00
2,428.28	20.23	81.82	2,407.41	25.15	174.85	-174.85	2.00	2.00	0.00
<b>Start 3487.21 hold at 2428.28 MD</b>									
2,500.00	20.23	81.82	2,474.71	28.68	199.39	-199.39	0.00	0.00	0.00
2,600.00	20.23	81.82	2,568.54	33.60	233.61	-233.61	0.00	0.00	0.00
2,700.00	20.23	81.82	2,662.37	38.52	267.83	-267.83	0.00	0.00	0.00
2,800.00	20.23	81.82	2,756.21	43.44	302.05	-302.05	0.00	0.00	0.00
2,900.00	20.23	81.82	2,850.04	48.37	336.27	-336.27	0.00	0.00	0.00
3,000.00	20.23	81.82	2,943.87	53.29	370.49	-370.49	0.00	0.00	0.00
3,100.00	20.23	81.82	3,037.71	58.21	404.71	-404.71	0.00	0.00	0.00
3,200.00	20.23	81.82	3,131.54	63.13	438.93	-438.93	0.00	0.00	0.00
3,300.00	20.23	81.82	3,225.38	68.05	473.15	-473.15	0.00	0.00	0.00
3,400.00	20.23	81.82	3,319.21	72.98	507.36	-507.36	0.00	0.00	0.00
3,500.00	20.23	81.82	3,413.04	77.90	541.58	-541.58	0.00	0.00	0.00
3,600.00	20.23	81.82	3,506.88	82.82	575.80	-575.80	0.00	0.00	0.00
3,700.00	20.23	81.82	3,600.71	87.74	610.02	-610.02	0.00	0.00	0.00
3,800.00	20.23	81.82	3,694.55	92.66	644.24	-644.24	0.00	0.00	0.00
3,900.00	20.23	81.82	3,788.38	97.59	678.46	-678.46	0.00	0.00	0.00
4,000.00	20.23	81.82	3,882.21	102.51	712.68	-712.68	0.00	0.00	0.00
4,100.00	20.23	81.82	3,976.05	107.43	746.90	-746.90	0.00	0.00	0.00
4,200.00	20.23	81.82	4,069.88	112.35	781.12	-781.12	0.00	0.00	0.00
4,300.00	20.23	81.82	4,163.72	117.27	815.34	-815.34	0.00	0.00	0.00
4,400.00	20.23	81.82	4,257.55	122.19	849.56	-849.56	0.00	0.00	0.00
4,474.01	20.23	81.82	4,327.00	125.84	874.89	-874.89	0.00	0.00	0.00

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<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>MD Reference:</b>	GL 4891 & KB 17 @ 4908.00ft (ASSUMED)
<b>Site:</b>	BAREFOOT 1-25HZ PAD	<b>North Reference:</b>	True
<b>Well:</b>	BAREFOOT 30C-25HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	PLAN #1 PRELIMINARY		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
<b>Sussex</b>									
4,500.00	20.23	81.82	4,351.38	127.12	883.78	-883.78	0.00	0.00	0.00
4,600.00	20.23	81.82	4,445.22	132.04	918.00	-918.00	0.00	0.00	0.00
4,700.00	20.23	81.82	4,539.05	136.96	952.22	-952.22	0.00	0.00	0.00
4,783.07	20.23	81.82	4,617.00	141.05	980.64	-980.64	0.00	0.00	0.00
<b>Shannon</b>									
4,800.00	20.23	81.82	4,632.89	141.88	986.44	-986.44	0.00	0.00	0.00
4,900.00	20.23	81.82	4,726.72	146.80	1,020.66	-1,020.66	0.00	0.00	0.00
5,000.00	20.23	81.82	4,820.55	151.73	1,054.88	-1,054.88	0.00	0.00	0.00
5,100.00	20.23	81.82	4,914.39	156.65	1,089.10	-1,089.10	0.00	0.00	0.00
5,200.00	20.23	81.82	5,008.22	161.57	1,123.32	-1,123.32	0.00	0.00	0.00
5,300.00	20.23	81.82	5,102.05	166.49	1,157.54	-1,157.54	0.00	0.00	0.00
5,400.00	20.23	81.82	5,195.89	171.41	1,191.76	-1,191.76	0.00	0.00	0.00
5,500.00	20.23	81.82	5,289.72	176.34	1,225.97	-1,225.97	0.00	0.00	0.00
5,600.00	20.23	81.82	5,383.56	181.26	1,260.19	-1,260.19	0.00	0.00	0.00
5,700.00	20.23	81.82	5,477.39	186.18	1,294.41	-1,294.41	0.00	0.00	0.00
5,800.00	20.23	81.82	5,571.22	191.10	1,328.63	-1,328.63	0.00	0.00	0.00
5,900.00	20.23	81.82	5,665.06	196.02	1,362.85	-1,362.85	0.00	0.00	0.00
5,915.49	20.23	81.82	5,679.59	196.79	1,368.15	-1,368.15	0.00	0.00	0.00
<b>Start Drop -2.00</b>									
6,000.00	18.54	81.82	5,759.31	200.78	1,395.91	-1,395.91	2.00	-2.00	0.00
6,100.00	16.54	81.82	5,854.66	205.07	1,425.73	-1,425.73	2.00	-2.00	0.00
6,200.00	14.54	81.82	5,951.00	208.88	1,452.24	-1,452.24	2.00	-2.00	0.00
6,300.00	12.54	81.82	6,048.22	212.21	1,475.41	-1,475.41	2.00	-2.00	0.00
6,400.00	10.54	81.82	6,146.19	215.06	1,495.20	-1,495.20	2.00	-2.00	0.00
6,500.00	8.54	81.82	6,244.81	217.42	1,511.59	-1,511.59	2.00	-2.00	0.00
6,600.00	6.54	81.82	6,343.94	219.28	1,524.57	-1,524.57	2.00	-2.00	0.00
6,700.00	4.54	81.82	6,443.47	220.66	1,534.12	-1,534.12	2.00	-2.00	0.00
6,800.00	2.54	81.82	6,543.27	221.53	1,540.22	-1,540.22	2.00	-2.00	0.00
6,900.00	0.54	81.82	6,643.23	221.92	1,542.88	-1,542.88	2.00	-2.00	0.00
6,926.77	0.00	0.00	6,670.00	221.93	1,543.00	-1,543.00	2.00	-2.00	0.00
<b>Start 3.04 hold at 6926.77 MD</b>									
6,929.81	0.00	0.00	6,673.04	221.93	1,543.00	-1,543.00	0.00	0.00	0.00
<b>Start DLS 10.00 TFO 270.00</b>									
7,000.00	7.02	270.00	6,743.06	221.93	1,538.71	-1,538.71	10.00	10.00	0.00
7,100.00	17.02	270.00	6,840.74	221.93	1,517.91	-1,517.91	10.00	10.00	0.00
7,179.61	24.98	270.00	6,915.00	221.93	1,489.40	-1,489.40	10.00	10.00	0.00
<b>Sharon Springs</b>									
7,200.00	27.02	270.00	6,933.33	221.93	1,480.46	-1,480.46	10.00	10.00	0.00
7,291.27	36.15	270.00	7,011.00	221.93	1,432.71	-1,432.71	10.00	10.00	0.00
<b>Niobrara A</b>									
7,300.00	37.02	270.00	7,018.01	221.93	1,427.51	-1,427.51	10.00	10.00	0.00
7,383.81	45.40	270.00	7,081.00	221.93	1,372.35	-1,372.35	10.00	10.00	0.00
<b>Niobrara B</b>									
7,400.00	47.02	270.00	7,092.21	221.93	1,360.66	-1,360.66	10.00	10.00	0.00
7,434.58	50.48	270.00	7,115.00	221.93	1,334.67	-1,334.67	10.00	10.00	0.00
<b>Niobrara C</b>									
7,500.00	57.02	270.00	7,153.67	221.93	1,281.94	-1,281.94	10.00	10.00	0.00
7,600.00	67.02	270.00	7,200.53	221.93	1,193.74	-1,193.74	10.00	10.00	0.00
7,640.48	71.07	270.00	7,215.00	221.93	1,155.95	-1,155.95	10.00	10.00	0.00
<b>Fort Hays</b>									
7,700.00	77.02	270.00	7,231.36	221.93	1,098.74	-1,098.74	10.00	10.00	0.00

<b>Database:</b>	Denver Sales Office	<b>Local Co-ordinate Reference:</b>	Well BAREFOOT 30C-25HZ
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	GL 4891 & KB 17 @ 4908.00ft (ASSUMED)
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>MD Reference:</b>	GL 4891 & KB 17 @ 4908.00ft (ASSUMED)
<b>Site:</b>	BAREFOOT 1-25HZ PAD	<b>North Reference:</b>	True
<b>Well:</b>	BAREFOOT 30C-25HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	PLAN #1 PRELIMINARY		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
7,746.83	81.70	270.00	7,240.00	221.93	1,052.74	-1,052.74	10.00	10.00	0.00
<b>Codell</b>									
7,800.00	87.02	270.00	7,245.22	221.93	999.84	-999.84	10.00	10.00	0.00
7,829.10	89.93	270.00	7,246.00	221.93	970.75	-970.75	10.00	10.00	0.00
<b>Start 5666.64 hold at 7829.10 MD - 7" (250 FNL 460 FWL SEC 30)</b>									
7,900.00	89.93	270.00	7,246.09	221.93	899.85	-899.85	0.00	0.00	0.00
8,000.00	89.93	270.00	7,246.21	221.93	799.85	-799.85	0.00	0.00	0.00
8,100.00	89.93	270.00	7,246.33	221.93	699.85	-699.85	0.00	0.00	0.00
8,200.00	89.93	270.00	7,246.46	221.93	599.85	-599.85	0.00	0.00	0.00
8,300.00	89.93	270.00	7,246.58	221.93	499.85	-499.85	0.00	0.00	0.00
8,400.00	89.93	270.00	7,246.70	221.93	399.85	-399.85	0.00	0.00	0.00
8,500.00	89.93	270.00	7,246.83	221.93	299.85	-299.85	0.00	0.00	0.00
8,600.00	89.93	270.00	7,246.95	221.93	199.85	-199.85	0.00	0.00	0.00
8,700.00	89.93	270.00	7,247.07	221.93	99.85	-99.85	0.00	0.00	0.00
8,800.00	89.93	270.00	7,247.20	221.94	-0.15	0.15	0.00	0.00	0.00
8,900.00	89.93	270.00	7,247.32	221.94	-100.15	100.15	0.00	0.00	0.00
9,000.00	89.93	270.00	7,247.45	221.94	-200.15	200.15	0.00	0.00	0.00
9,100.00	89.93	270.00	7,247.57	221.94	-300.15	300.15	0.00	0.00	0.00
9,200.00	89.93	270.00	7,247.69	221.94	-400.15	400.15	0.00	0.00	0.00
9,300.00	89.93	270.00	7,247.82	221.94	-500.15	500.15	0.00	0.00	0.00
9,400.00	89.93	270.00	7,247.94	221.94	-600.15	600.15	0.00	0.00	0.00
9,500.00	89.93	270.00	7,248.06	221.94	-700.15	700.15	0.00	0.00	0.00
9,600.00	89.93	270.00	7,248.19	221.94	-800.15	800.15	0.00	0.00	0.00
9,700.00	89.93	270.00	7,248.31	221.94	-900.15	900.15	0.00	0.00	0.00
9,800.00	89.93	270.00	7,248.43	221.94	-1,000.15	1,000.15	0.00	0.00	0.00
9,900.00	89.93	270.00	7,248.56	221.94	-1,100.15	1,100.15	0.00	0.00	0.00
10,000.00	89.93	270.00	7,248.68	221.94	-1,200.15	1,200.15	0.00	0.00	0.00
10,100.00	89.93	270.00	7,248.80	221.94	-1,300.15	1,300.15	0.00	0.00	0.00
10,200.00	89.93	270.00	7,248.93	221.94	-1,400.15	1,400.15	0.00	0.00	0.00
10,300.00	89.93	270.00	7,249.05	221.94	-1,500.15	1,500.15	0.00	0.00	0.00
10,400.00	89.93	270.00	7,249.18	221.94	-1,600.15	1,600.15	0.00	0.00	0.00
10,500.00	89.93	270.00	7,249.30	221.94	-1,700.15	1,700.15	0.00	0.00	0.00
10,600.00	89.93	270.00	7,249.42	221.94	-1,800.15	1,800.15	0.00	0.00	0.00
10,700.00	89.93	270.00	7,249.55	221.94	-1,900.15	1,900.15	0.00	0.00	0.00
10,800.00	89.93	270.00	7,249.67	221.94	-2,000.15	2,000.15	0.00	0.00	0.00
10,900.00	89.93	270.00	7,249.79	221.94	-2,100.15	2,100.15	0.00	0.00	0.00
11,000.00	89.93	270.00	7,249.92	221.94	-2,200.15	2,200.15	0.00	0.00	0.00
11,100.00	89.93	270.00	7,250.04	221.94	-2,300.15	2,300.15	0.00	0.00	0.00
11,200.00	89.93	270.00	7,250.16	221.94	-2,400.15	2,400.15	0.00	0.00	0.00
11,300.00	89.93	270.00	7,250.29	221.94	-2,500.15	2,500.15	0.00	0.00	0.00
11,400.00	89.93	270.00	7,250.41	221.94	-2,600.14	2,600.14	0.00	0.00	0.00
11,500.00	89.93	270.00	7,250.53	221.94	-2,700.14	2,700.14	0.00	0.00	0.00
11,600.00	89.93	270.00	7,250.66	221.94	-2,800.14	2,800.14	0.00	0.00	0.00
11,700.00	89.93	270.00	7,250.78	221.94	-2,900.14	2,900.14	0.00	0.00	0.00
11,800.00	89.93	270.00	7,250.90	221.94	-3,000.14	3,000.14	0.00	0.00	0.00
11,900.00	89.93	270.00	7,251.03	221.94	-3,100.14	3,100.14	0.00	0.00	0.00
12,000.00	89.93	270.00	7,251.15	221.94	-3,200.14	3,200.14	0.00	0.00	0.00
12,100.00	89.93	270.00	7,251.28	221.94	-3,300.14	3,300.14	0.00	0.00	0.00
12,200.00	89.93	270.00	7,251.40	221.94	-3,400.14	3,400.14	0.00	0.00	0.00
12,300.00	89.93	270.00	7,251.52	221.94	-3,500.14	3,500.14	0.00	0.00	0.00
12,400.00	89.93	270.00	7,251.65	221.94	-3,600.14	3,600.14	0.00	0.00	0.00
12,500.00	89.93	270.00	7,251.77	221.94	-3,700.14	3,700.14	0.00	0.00	0.00
12,600.00	89.93	270.00	7,251.89	221.94	-3,800.14	3,800.14	0.00	0.00	0.00
12,700.00	89.93	270.00	7,252.02	221.94	-3,900.14	3,900.14	0.00	0.00	0.00

<b>Database:</b>	Denver Sales Office	<b>Local Co-ordinate Reference:</b>	Well BAREFOOT 30C-25HZ
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	GL 4891 & KB 17 @ 4908.00ft (ASSUMED)
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>MD Reference:</b>	GL 4891 & KB 17 @ 4908.00ft (ASSUMED)
<b>Site:</b>	BAREFOOT 1-25HZ PAD	<b>North Reference:</b>	True
<b>Well:</b>	BAREFOOT 30C-25HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	PLAN #1 PRELIMINARY		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
12,800.00	89.93	270.00	7,252.14	221.94	-4,000.14	4,000.14	0.00	0.00	0.00
12,900.00	89.93	270.00	7,252.26	221.94	-4,100.14	4,100.14	0.00	0.00	0.00
13,000.00	89.93	270.00	7,252.39	221.94	-4,200.14	4,200.14	0.00	0.00	0.00
13,100.00	89.93	270.00	7,252.51	221.94	-4,300.14	4,300.14	0.00	0.00	0.00
13,200.00	89.93	270.00	7,252.63	221.94	-4,400.14	4,400.14	0.00	0.00	0.00
13,300.00	89.93	270.00	7,252.76	221.94	-4,500.14	4,500.14	0.00	0.00	0.00
13,400.00	89.93	270.00	7,252.88	221.94	-4,600.14	4,600.14	0.00	0.00	0.00
13,495.74	89.93	270.00	7,253.00	221.94	-4,695.88	4,695.88	0.00	0.00	0.00
TD at 13495.74 - PBHL_Barefoot 30C-25HZ (250' FNL 50' FWL SEC 25)									

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_Barefoot 30C-25H	0.00	0.00	7,253.00	221.94	-4,695.88	1,317,500.83	3,150,711.47	40.2036780	-104.9604250
- plan hits target center									
- Point									

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)	
1,317.00	1,317.00	9 5/8"	9.625	12.250	
7,829.10	7,246.00	7" (250 FNL 460 FWL SEC 30)	7.000	7.500	

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
1,267.00	1,267.00	Fox Hills Marker				
4,474.01	4,327.00	Sussex				
4,783.07	4,617.00	Shannon				
7,179.61	6,915.00	Sharon Springs				
7,291.27	7,011.00	Niobrara A				
7,383.81	7,081.00	Niobrara B				
7,434.58	7,115.00	Niobrara C				
7,640.48	7,215.00	Fort Hays				
7,746.83	7,240.00	Codell				

<b>Database:</b>	Denver Sales Office	<b>Local Co-ordinate Reference:</b>	Well BAREFOOT 30C-25HZ
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	GL 4891 & KB 17 @ 4908.00ft (ASSUMED)
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>MD Reference:</b>	GL 4891 & KB 17 @ 4908.00ft (ASSUMED)
<b>Site:</b>	BAREFOOT 1-25HZ PAD	<b>North Reference:</b>	True
<b>Well:</b>	BAREFOOT 30C-25HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	PLAN #1 PRELIMINARY		

Plan Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
1,417.00	1,417.00	0.00	0.00	Start Build 2.00
2,428.28	2,407.41	25.15	174.85	Start 3487.21 hold at 2428.28 MD
5,915.49	5,679.59	196.79	1,368.15	Start Drop -2.00
6,926.77	6,670.00	221.93	1,543.00	Start 3.04 hold at 6926.77 MD
6,929.81	6,673.04	221.93	1,543.00	Start DLS 10.00 TFO 270.00
7,829.10	7,246.00	221.93	970.75	Start 5666.64 hold at 7829.10 MD
13,495.74	7,253.00	221.94	-4,695.88	TD at 13495.74