

# **US ROCKIES REGION PLANNING**

**COLORADO NORTHERN ZONE - 83**

**WELD\_BARCLAY 15-27 PAD**

**BARCLAY 2N-27HZ**

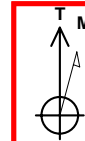
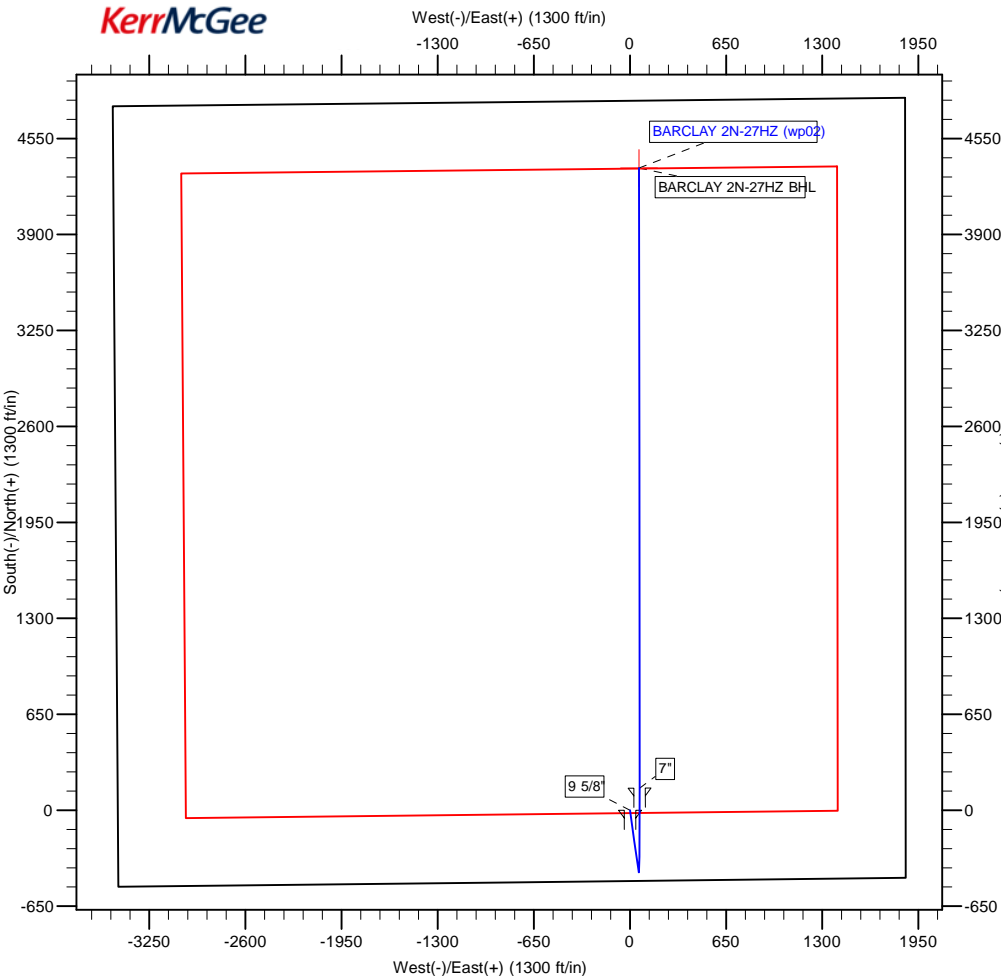
**BARCLAY 2N-27HZ**

**Plan: BARCLAY 2N-27HZ (wp01)**

## **Standard Planning Report**

**15 August, 2011**





Azimuths to True North  
Magnetic North: 8.83°  
Magnetic Field  
Strength: 53008.9nT  
Dip Angle: 66.88°  
Date: 7/25/2011  
Model: IGRF2010

Project: COLORADO NORTHERN ZONE - 83  
Site: WELD BARCLAY 15-27 PAD  
Well: BARCLAY 2N-27HZ  
Wellbore: BARCLAY 2N-27HZ  
Section:  
SHL:  
Design: BARCLAY 2N-27HZ (wp01)  
Latitude: 40.190206  
Longitude: -104.760466  
GL: 4956.00  
KB: 17' RKB + 4956' GL @ 4973.00ft

#### WELL DETAILS: BARCLAY 2N-27HZ

+N/-S	+E/-W	Northing	Ground Level: Easting	4956.00 Latitude	Longitude	Slot
0.00	0.00	1312996.18	3206602.86	40.190206	-104.760466	

#### WELLBORE TARGET DETAILS (MAP CO-ORDINATES AND LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
BARCLAY 2N-27HZ BHL	7176.00	4349.56	62.29	40.202146	-104.760243	Point

#### 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	
1000.00	0.00	0.00	1000.00	0.00	0.00	0.00	0.00	0.00	
1222.98	4.46	171.90	1222.76	-8.59	1.22	2.00	171.90	-8.57	
6563.36	4.46	171.90	6546.97	-419.69	59.76	0.00	0.00	-418.79	
7505.95	89.84	359.95	7164.00	150.00	66.00	10.00	-171.92	150.93	
7506.62	89.84	359.95	7164.00	150.67	66.00	1.00	-162.82	151.60	
11705.52	89.84	359.95	7176.00	4349.56	62.29	0.00	0.00	4350.01	BARCLAY 2N-27HZ BHL

#### FORMATION TOP DETAILS

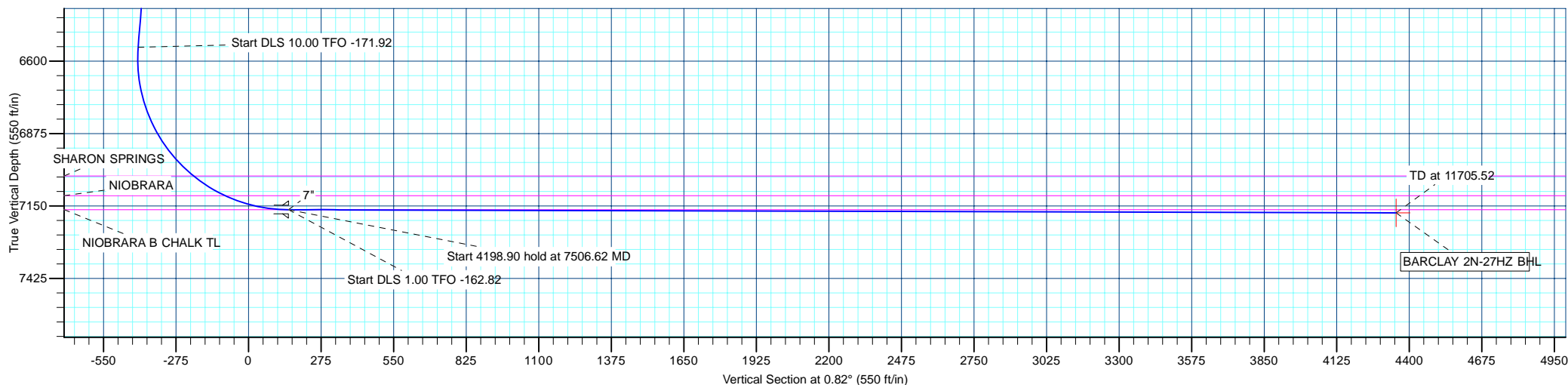
TVDPath	MDPath	Formation
3208.00	3214.25	PARKMAN
4386.00	4395.83	SUSSEX
5028.00	5039.78	SHANNON
7036.00	7117.00	SHARON SPRINGS
7111.00	7259.12	NIOBRARA
7164.00	7505.95	NIOBRARA B CHALK TL

#### CASING DETAILS

TVD	MD	Name	Size
850.00	850.00	9 5/8"	9-5/8
7164.00	7505.95	7"	7



Weatherford®



<b>Database:</b>	edm5000p	<b>Local Co-ordinate Reference:</b>	Well BARCLAY 2N-27HZ
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	17' RKB + 4956' GL @ 4973.00ft
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>MD Reference:</b>	17' RKB + 4956' GL @ 4973.00ft
<b>Site:</b>	WELD_BARCLAY 15-27 PAD	<b>North Reference:</b>	True
<b>Well:</b>	BARCLAY 2N-27HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	BARCLAY 2N-27HZ		
<b>Design:</b>	BARCLAY 2N-27HZ (wp01)		

<b>Project</b>	COLORADO NORTHERN ZONE - 83		
<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>	WELD_BARCLAY 15-27 PAD			
<b>Site Position:</b>		<b>Northing:</b>	1,312,996.10 ft	<b>Latitude:</b> 40.190205
<b>From:</b>	Lat/Long	<b>Easting:</b>	3,206,634.99 ft	<b>Longitude:</b> -104.760351
<b>Position Uncertainty:</b>	0.00 ft	<b>Slot Radius:</b>	0 "	<b>Grid Convergence:</b> 0.48 °

<b>Well</b>	BARCLAY 2N-27HZ			
<b>Well Position</b>	<b>+N/-S</b>	0.34 ft	<b>Northing:</b>	1,312,996.18 ft
	<b>+E/-W</b>	-32.13 ft	<b>Easting:</b>	3,206,602.86 ft
<b>Position Uncertainty</b>		0.00 ft	<b>Wellhead Elevation:</b>	
			<b>Ground Level:</b>	4,956.00 ft

<b>Wellbore</b>	BARCLAY 2N-27HZ				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2010	7/25/2011	8.83	66.88	53,009

<b>Design</b>	BARCLAY 2N-27HZ (wp01)			
<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)</b>	<b>+N/-S</b>	<b>+E/-W</b>	<b>Direction</b>
	(ft)	(ft)	(ft)	(°)
	0.00	0.00	0.00	0.82

<b>Plan Sections</b>										
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	
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,222.98	4.46	171.90	1,222.76	-8.59	1.22	2.00	2.00	0.00	171.90	
6,563.36	4.46	171.90	6,546.97	-419.69	59.76	0.00	0.00	0.00	0.00	
7,505.95	89.84	359.95	7,164.00	150.00	66.00	10.00	9.06	-18.24	-171.92	
7,506.62	89.84	359.95	7,164.00	150.67	66.00	1.00	-0.96	-0.30	-162.82	
11,705.52	89.84	359.95	7,176.00	4,349.56	62.29	0.00	0.00	0.00	0.00	BARCLAY 2N-27HZ E

<b>Database:</b>	edm5000p	<b>Local Co-ordinate Reference:</b>	Well BARCLAY 2N-27HZ
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	17' RKB + 4956' GL @ 4973.00ft
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>MD Reference:</b>	17' RKB + 4956' GL @ 4973.00ft
<b>Site:</b>	WELD_BARCLAY 15-27 PAD	<b>North Reference:</b>	True
<b>Well:</b>	BARCLAY 2N-27HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	BARCLAY 2N-27HZ		
<b>Design:</b>	BARCLAY 2N-27HZ (wp01)		

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
850.00	0.00	0.00	850.00	0.00	0.00	0.00	0.00	0.00	0.00
9 5/8"									
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
Start Build 2.00									
1,100.00	2.00	171.90	1,099.98	-1.73	0.25	-1.72	2.00	2.00	0.00
1,200.00	4.00	171.90	1,199.84	-6.91	0.98	-6.89	2.00	2.00	0.00
1,222.98	4.46	171.90	1,222.76	-8.59	1.22	-8.57	2.00	2.00	0.00
Start 5340.38 hold at 1222.98 MD									
1,300.00	4.46	171.90	1,299.54	-14.52	2.07	-14.48	0.00	0.00	0.00
1,400.00	4.46	171.90	1,399.24	-22.21	3.16	-22.17	0.00	0.00	0.00
1,500.00	4.46	171.90	1,498.94	-29.91	4.26	-29.85	0.00	0.00	0.00
1,600.00	4.46	171.90	1,598.63	-37.61	5.36	-37.53	0.00	0.00	0.00
1,700.00	4.46	171.90	1,698.33	-45.31	6.45	-45.21	0.00	0.00	0.00
1,800.00	4.46	171.90	1,798.03	-53.01	7.55	-52.89	0.00	0.00	0.00
1,900.00	4.46	171.90	1,897.73	-60.70	8.64	-60.57	0.00	0.00	0.00
2,000.00	4.46	171.90	1,997.42	-68.40	9.74	-68.26	0.00	0.00	0.00
2,100.00	4.46	171.90	2,097.12	-76.10	10.84	-75.94	0.00	0.00	0.00
2,200.00	4.46	171.90	2,196.82	-83.80	11.93	-83.62	0.00	0.00	0.00
2,300.00	4.46	171.90	2,296.51	-91.50	13.03	-91.30	0.00	0.00	0.00
2,400.00	4.46	171.90	2,396.21	-99.19	14.12	-98.98	0.00	0.00	0.00
2,500.00	4.46	171.90	2,495.91	-106.89	15.22	-106.66	0.00	0.00	0.00
2,600.00	4.46	171.90	2,595.61	-114.59	16.32	-114.34	0.00	0.00	0.00
2,700.00	4.46	171.90	2,695.30	-122.29	17.41	-122.03	0.00	0.00	0.00
2,800.00	4.46	171.90	2,795.00	-129.99	18.51	-129.71	0.00	0.00	0.00
2,900.00	4.46	171.90	2,894.70	-137.68	19.60	-137.39	0.00	0.00	0.00
3,000.00	4.46	171.90	2,994.39	-145.38	20.70	-145.07	0.00	0.00	0.00
3,100.00	4.46	171.90	3,094.09	-153.08	21.80	-152.75	0.00	0.00	0.00
3,200.00	4.46	171.90	3,193.79	-160.78	22.89	-160.43	0.00	0.00	0.00
3,214.25	4.46	171.90	3,208.00	-161.88	23.05	-161.53	0.00	0.00	0.00
PARKMAN									
3,300.00	4.46	171.90	3,293.49	-168.48	23.99	-168.12	0.00	0.00	0.00
3,400.00	4.46	171.90	3,393.18	-176.17	25.09	-175.80	0.00	0.00	0.00
3,500.00	4.46	171.90	3,492.88	-183.87	26.18	-183.48	0.00	0.00	0.00
3,600.00	4.46	171.90	3,592.58	-191.57	27.28	-191.16	0.00	0.00	0.00
3,700.00	4.46	171.90	3,692.28	-199.27	28.37	-198.84	0.00	0.00	0.00
3,800.00	4.46	171.90	3,791.97	-206.97	29.47	-206.52	0.00	0.00	0.00
3,900.00	4.46	171.90	3,891.67	-214.66	30.57	-214.20	0.00	0.00	0.00
4,000.00	4.46	171.90	3,991.37	-222.36	31.66	-221.89	0.00	0.00	0.00
4,100.00	4.46	171.90	4,091.06	-230.06	32.76	-229.57	0.00	0.00	0.00
4,200.00	4.46	171.90	4,190.76	-237.76	33.85	-237.25	0.00	0.00	0.00
4,300.00	4.46	171.90	4,290.46	-245.46	34.95	-244.93	0.00	0.00	0.00
4,395.83	4.46	171.90	4,386.00	-252.83	36.00	-252.29	0.00	0.00	0.00
SUSSEX									
4,400.00	4.46	171.90	4,390.16	-253.15	36.05	-252.61	0.00	0.00	0.00

<b>Database:</b>	edm5000p	<b>Local Co-ordinate Reference:</b>	Well BARCLAY 2N-27HZ
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	17' RKB + 4956' GL @ 4973.00ft
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>MD Reference:</b>	17' RKB + 4956' GL @ 4973.00ft
<b>Site:</b>	WELD_BARCLAY 15-27 PAD	<b>North Reference:</b>	True
<b>Well:</b>	BARCLAY 2N-27HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	BARCLAY 2N-27HZ		
<b>Design:</b>	BARCLAY 2N-27HZ (wp01)		

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	4.46	171.90	4,489.85	-260.85	37.14	-260.29	0.00	0.00	0.00
4,600.00	4.46	171.90	4,589.55	-268.55	38.24	-267.98	0.00	0.00	0.00
4,700.00	4.46	171.90	4,689.25	-276.25	39.33	-275.66	0.00	0.00	0.00
4,800.00	4.46	171.90	4,788.95	-283.95	40.43	-283.34	0.00	0.00	0.00
4,900.00	4.46	171.90	4,888.64	-291.64	41.53	-291.02	0.00	0.00	0.00
5,000.00	4.46	171.90	4,988.34	-299.34	42.62	-298.70	0.00	0.00	0.00
5,039.78	4.46	171.90	5,028.00	-302.40	43.06	-301.76	0.00	0.00	0.00
<b>SHANNON</b>									
5,100.00	4.46	171.90	5,088.04	-307.04	43.72	-306.38	0.00	0.00	0.00
5,200.00	4.46	171.90	5,187.73	-314.74	44.81	-314.06	0.00	0.00	0.00
5,300.00	4.46	171.90	5,287.43	-322.44	45.91	-321.75	0.00	0.00	0.00
5,400.00	4.46	171.90	5,387.13	-330.13	47.01	-329.43	0.00	0.00	0.00
5,500.00	4.46	171.90	5,486.83	-337.83	48.10	-337.11	0.00	0.00	0.00
5,600.00	4.46	171.90	5,586.52	-345.53	49.20	-344.79	0.00	0.00	0.00
5,700.00	4.46	171.90	5,686.22	-353.23	50.30	-352.47	0.00	0.00	0.00
5,800.00	4.46	171.90	5,785.92	-360.93	51.39	-360.15	0.00	0.00	0.00
5,900.00	4.46	171.90	5,885.61	-368.62	52.49	-367.83	0.00	0.00	0.00
6,000.00	4.46	171.90	5,985.31	-376.32	53.58	-375.52	0.00	0.00	0.00
6,100.00	4.46	171.90	6,085.01	-384.02	54.68	-383.20	0.00	0.00	0.00
6,200.00	4.46	171.90	6,184.71	-391.72	55.78	-390.88	0.00	0.00	0.00
6,300.00	4.46	171.90	6,284.40	-399.42	56.87	-398.56	0.00	0.00	0.00
6,400.00	4.46	171.90	6,384.10	-407.11	57.97	-406.24	0.00	0.00	0.00
6,500.00	4.46	171.90	6,483.80	-414.81	59.06	-413.92	0.00	0.00	0.00
6,563.36	4.46	171.90	6,546.97	-419.69	59.76	-418.79	0.00	0.00	0.00
<b>Start DLS 10.00 TFO -171.92</b>									
6,600.00	0.98	140.17	6,583.56	-421.34	60.16	-420.44	10.00	-9.50	-86.59
6,700.00	9.27	3.79	6,683.15	-413.94	61.24	-413.02	10.00	8.29	-136.38
6,800.00	19.26	1.74	6,779.95	-389.36	62.28	-388.43	10.00	9.99	-2.05
6,900.00	29.25	1.07	6,871.01	-348.34	63.24	-347.40	10.00	10.00	-0.67
7,000.00	39.25	0.72	6,953.56	-292.14	64.09	-291.19	10.00	10.00	-0.35
7,100.00	49.25	0.49	7,025.09	-222.45	64.81	-221.50	10.00	10.00	-0.23
7,117.00	50.95	0.46	7,036.00	-209.40	64.92	-208.45	10.00	10.00	-0.19
<b>SHARON SPRINGS</b>									
7,200.00	59.25	0.32	7,083.44	-141.39	65.38	-140.44	10.00	10.00	-0.16
7,259.12	65.16	0.24	7,111.00	-89.11	65.63	-88.17	10.00	10.00	-0.14
<b>NIOBRARA</b>									
7,300.00	69.25	0.19	7,126.83	-51.44	65.77	-50.49	10.00	10.00	-0.13
7,400.00	79.25	0.07	7,153.94	44.68	65.98	45.62	10.00	10.00	-0.12
7,500.00	89.25	359.96	7,163.95	144.05	66.00	144.98	10.00	10.00	-0.11
7,505.95	89.84	359.95	7,164.00	150.00	66.00	150.93	10.00	10.00	-0.11
<b>Start DLS 1.00 TFO -162.82 - NIOBRARA B CHALK TL - 7"</b>									
7,506.62	89.84	359.95	7,164.00	150.67	66.00	151.60	0.99	-0.94	-0.30
<b>Start 4198.90 hold at 7506.62 MD</b>									
7,600.00	89.84	359.95	7,164.27	244.05	65.92	244.97	0.00	0.00	0.00
7,700.00	89.84	359.95	7,164.55	344.05	65.83	344.96	0.00	0.00	0.00
7,800.00	89.84	359.95	7,164.84	444.05	65.74	444.95	0.00	0.00	0.00
7,900.00	89.84	359.95	7,165.13	544.05	65.65	544.94	0.00	0.00	0.00
8,000.00	89.84	359.95	7,165.41	644.05	65.56	644.92	0.00	0.00	0.00
8,100.00	89.84	359.95	7,165.70	744.05	65.48	744.91	0.00	0.00	0.00
8,200.00	89.84	359.95	7,165.98	844.05	65.39	844.90	0.00	0.00	0.00
8,300.00	89.84	359.95	7,166.27	944.05	65.30	944.89	0.00	0.00	0.00
8,400.00	89.84	359.95	7,166.55	1,044.05	65.21	1,044.88	0.00	0.00	0.00
8,500.00	89.84	359.95	7,166.84	1,144.05	65.12	1,144.86	0.00	0.00	0.00

<b>Database:</b>	edm5000p	<b>Local Co-ordinate Reference:</b>	Well BARCLAY 2N-27HZ
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	17' RKB + 4956' GL @ 4973.00ft
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>MD Reference:</b>	17' RKB + 4956' GL @ 4973.00ft
<b>Site:</b>	WELD_BARCLAY 15-27 PAD	<b>North Reference:</b>	True
<b>Well:</b>	BARCLAY 2N-27HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	BARCLAY 2N-27HZ		
<b>Design:</b>	BARCLAY 2N-27HZ (wp01)		

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)	
8,600.00	89.84	359.95	7,167.13	1,244.05	65.03	1,244.85	0.00	0.00	0.00	
8,700.00	89.84	359.95	7,167.41	1,344.05	64.94	1,344.84	0.00	0.00	0.00	
8,800.00	89.84	359.95	7,167.70	1,444.05	64.86	1,444.83	0.00	0.00	0.00	
8,900.00	89.84	359.95	7,167.98	1,544.05	64.77	1,544.82	0.00	0.00	0.00	
9,000.00	89.84	359.95	7,168.27	1,644.05	64.68	1,644.81	0.00	0.00	0.00	
9,100.00	89.84	359.95	7,168.56	1,744.05	64.59	1,744.79	0.00	0.00	0.00	
9,200.00	89.84	359.95	7,168.84	1,844.05	64.50	1,844.78	0.00	0.00	0.00	
9,300.00	89.84	359.95	7,169.13	1,944.05	64.41	1,944.77	0.00	0.00	0.00	
9,400.00	89.84	359.95	7,169.41	2,044.05	64.33	2,044.76	0.00	0.00	0.00	
9,500.00	89.84	359.95	7,169.70	2,144.05	64.24	2,144.75	0.00	0.00	0.00	
9,600.00	89.84	359.95	7,169.98	2,244.04	64.15	2,244.73	0.00	0.00	0.00	
9,700.00	89.84	359.95	7,170.27	2,344.04	64.06	2,344.72	0.00	0.00	0.00	
9,800.00	89.84	359.95	7,170.56	2,444.04	63.97	2,444.71	0.00	0.00	0.00	
9,900.00	89.84	359.95	7,170.84	2,544.04	63.88	2,544.70	0.00	0.00	0.00	
10,000.00	89.84	359.95	7,171.13	2,644.04	63.80	2,644.69	0.00	0.00	0.00	
10,100.00	89.84	359.95	7,171.41	2,744.04	63.71	2,744.67	0.00	0.00	0.00	
10,200.00	89.84	359.95	7,171.70	2,844.04	63.62	2,844.66	0.00	0.00	0.00	
10,300.00	89.84	359.95	7,171.98	2,944.04	63.53	2,944.65	0.00	0.00	0.00	
10,400.00	89.84	359.95	7,172.27	3,044.04	63.44	3,044.64	0.00	0.00	0.00	
10,500.00	89.84	359.95	7,172.56	3,144.04	63.35	3,144.63	0.00	0.00	0.00	
10,600.00	89.84	359.95	7,172.84	3,244.04	63.27	3,244.61	0.00	0.00	0.00	
10,700.00	89.84	359.95	7,173.13	3,344.04	63.18	3,344.60	0.00	0.00	0.00	
10,800.00	89.84	359.95	7,173.41	3,444.04	63.09	3,444.59	0.00	0.00	0.00	
10,900.00	89.84	359.95	7,173.70	3,544.04	63.00	3,544.58	0.00	0.00	0.00	
11,000.00	89.84	359.95	7,173.98	3,644.04	62.91	3,644.57	0.00	0.00	0.00	
11,100.00	89.84	359.95	7,174.27	3,744.04	62.82	3,744.55	0.00	0.00	0.00	
11,200.00	89.84	359.95	7,174.56	3,844.04	62.74	3,844.54	0.00	0.00	0.00	
11,300.00	89.84	359.95	7,174.84	3,944.04	62.65	3,944.53	0.00	0.00	0.00	
11,400.00	89.84	359.95	7,175.13	4,044.04	62.56	4,044.52	0.00	0.00	0.00	
11,500.00	89.84	359.95	7,175.41	4,144.04	62.47	4,144.51	0.00	0.00	0.00	
11,600.00	89.84	359.95	7,175.70	4,244.04	62.38	4,244.49	0.00	0.00	0.00	
11,700.00	89.84	359.95	7,175.98	4,344.04	62.29	4,344.48	0.00	0.00	0.00	
11,705.52	89.84	359.95	7,176.00	4,349.56	62.29	4,350.01	0.00	0.00	0.00	
TD at 11705.52 - BARCLAY 2N-27HZ BHL										

Design Targets										
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude	
- hit/miss target										
- Shape										
BARCLAY 2N-27HZ BH	0.00	0.00	7,176.00	4,349.56	62.29	1,317,346.10	3,206,628.88	40.202146	-104.760243	
- plan hits target center										
- Point										

Casing Points						
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")		
850.00	850.00	9 5/8"	9-5/8	12-1/4		
7,505.95	7,164.00	7"	7	8-3/4		

<b>Database:</b>	edm5000p	<b>Local Co-ordinate Reference:</b>	Well BARCLAY 2N-27HZ
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	17' RKB + 4956' GL @ 4973.00ft
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>MD Reference:</b>	17' RKB + 4956' GL @ 4973.00ft
<b>Site:</b>	WELD_BARCLAY 15-27 PAD	<b>North Reference:</b>	True
<b>Well:</b>	BARCLAY 2N-27HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	BARCLAY 2N-27HZ		
<b>Design:</b>	BARCLAY 2N-27HZ (wp01)		

Formations					
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
3,214.25	3,208.00	PARKMAN		0.00	
4,395.83	4,386.00	SUSSEX		0.00	
5,039.78	5,028.00	SHANNON		0.00	
7,117.00	7,036.00	SHARON SPRINGS		0.00	
7,259.12	7,111.00	NIOBRARA		0.00	
7,505.95	7,164.00	NIOBRARA B CHALK TL		0.00	

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates			
		+N/-S (ft)	+E/-W (ft)	Comment	
1,000.00	1,000.00	0.00	0.00	Start Build 2.00	
1,222.98	1,222.76	-8.59	1.22	Start 5340.38 hold at 1222.98 MD	
6,563.36	6,546.97	-419.69	59.76	Start DLS 10.00 TFO -171.92	
7,505.95	7,164.00	150.00	66.00	Start DLS 1.00 TFO -162.82	
7,506.62	7,164.00	150.67	66.00	Start 4198.90 hold at 7506.62 MD	
11,705.52	7,176.00	4,349.56	62.29	TD at 11705.52	