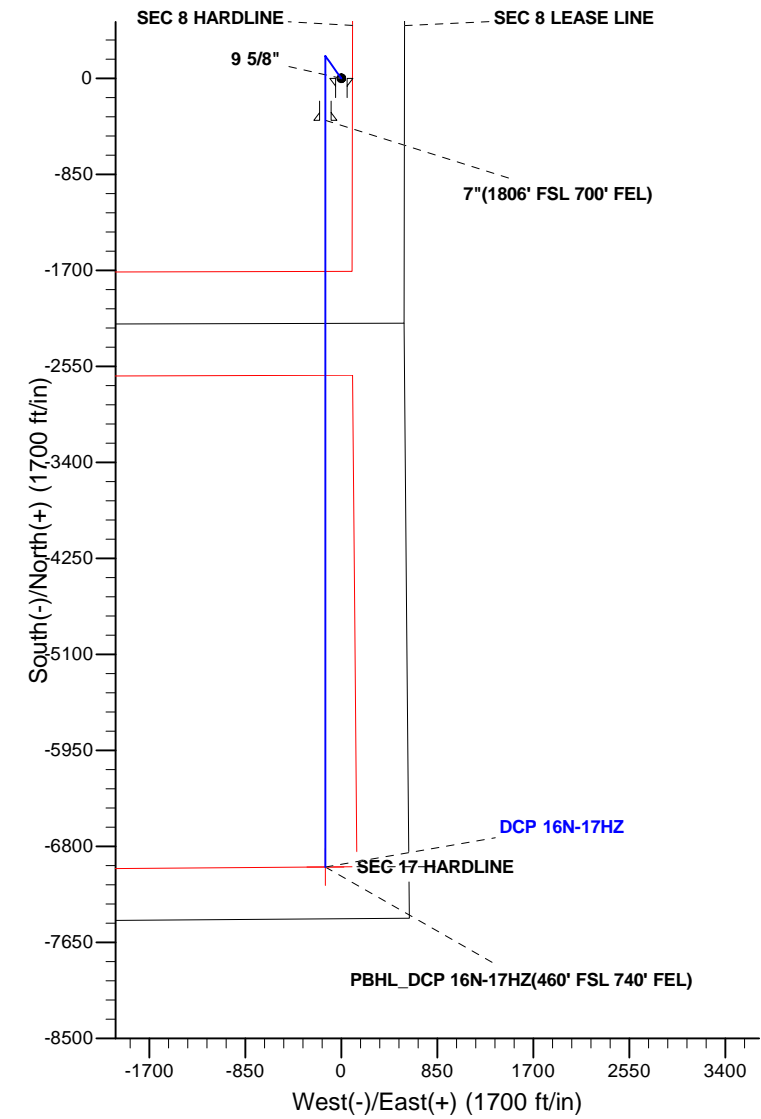
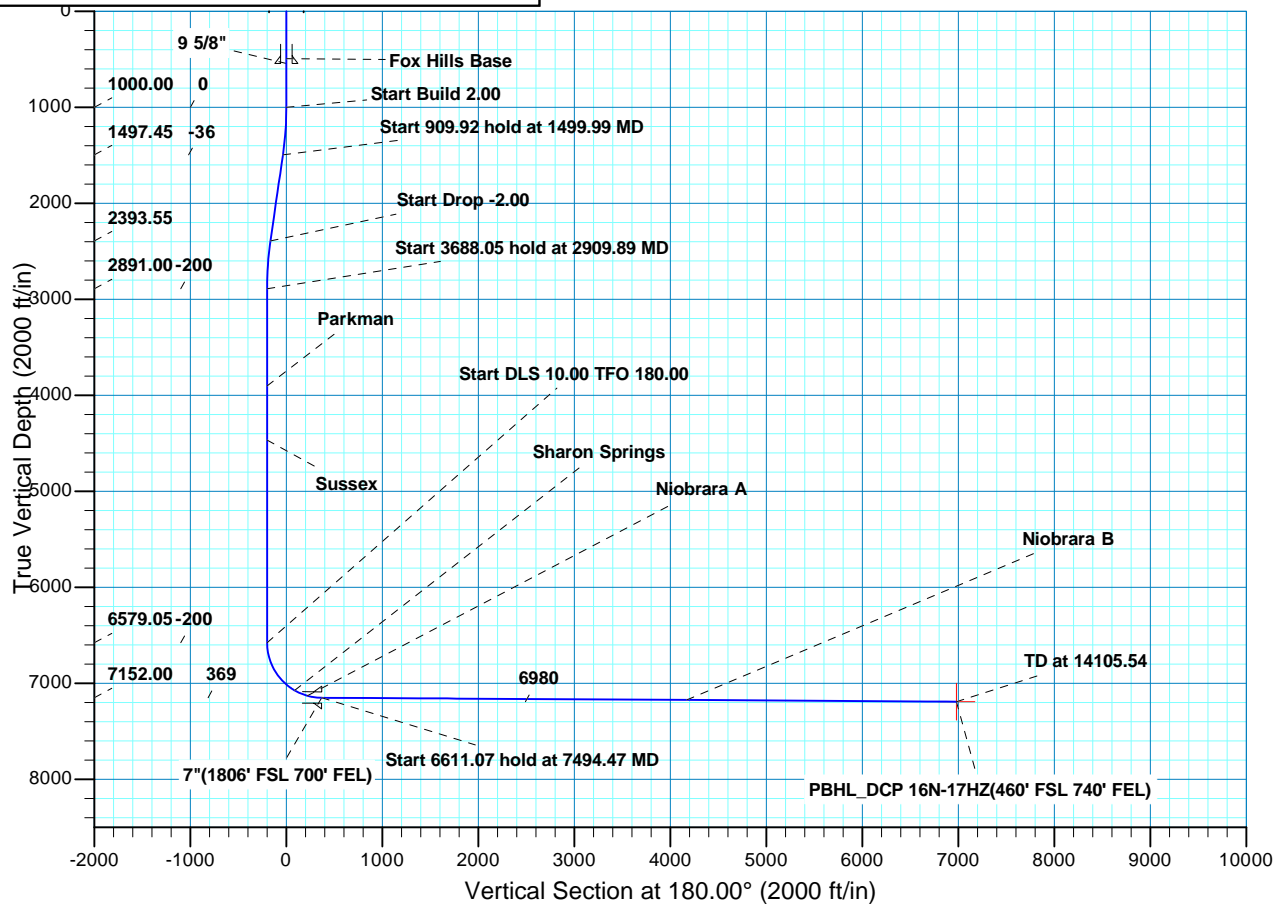


WELL DETAILS: DCP 16N-17HZ										
GL 4855 & KB 17 @ 4872.00ft (ASSUMED)										
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude					
0.00	0.00	1330331.51	3197118.41	40.2380040	-104.7939200					
SECTION DETAILS										
MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	V Sect	Target	
0.00	0.00	0.00	0.00	0.00	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	0.00	
1499.99	10.00	324.70	1497.45	35.52	-25.15	2.00	324.70	-35.52		
2409.91	10.00	324.70	2393.55	164.48	-116.44	0.00	0.00	-164.48		
2909.89	0.00	0.00	2891.00	200.00	-141.58	2.00	180.00	-200.00		
6597.94	0.00	0.00	6579.05	200.00	-141.58	0.00	0.00	-200.00		
7494.47	89.65	180.00	7152.00	-369.49	-141.58	10.00	180.00	369.49		
14105.54	89.65	180.00	7192.00	-6980.44	-141.58	0.00	0.006980.44			PBHL_DCP 16N-17HZ(460' FSL 740' FEL)
FORMATION TOP DETAILS					CASING DETAILS					
TVDPath	MDPath	Formation	Inc	TVD	MD	Name	Size			
494.00	494.00	Fox Hills Base	0.00	544.00	544.00	9 5/8"	9.625			
3902.00	3920.89	Parkman	0.00	7152.00	7494.47	7"	7.000			
4468.00	4486.89	Sussex	0.00							
7075.00	7197.45	Sharon Springs	59.95							
7131.00	7342.31	Niobrara A	74.44							
7175.00	11296.03	Niobrara B	89.65							





Scientific Drilling

US ROCKIES REGION PLANNING

COLORADO NORTHERN ZONE - 83

DCP 9-8HZ Pad

DCP 16N-17HZ

OH

Plan: PLAN #1 PRELIMINARY

Standard Planning Report

07 May, 2013

Database:	EDM5000-RobertS-Local	Local Co-ordinate Reference:	Well DCP 16N-17HZ
Company:	US ROCKIES REGION PLANNING	TVD Reference:	GL 4855 & KB 17 @ 4872.00ft (ASSUMED)
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	GL 4855 & KB 17 @ 4872.00ft (ASSUMED)
Site:	DCP 9-8HZ Pad	North Reference:	True
Well:	DCP 16N-17HZ	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	DCP 9-8HZ Pad, SECTION 8 T3N R66W				
Site Position:	Northing:	1,330,331.51 usft	Latitude:	40.2380040	
From:	Lat/Long	Easting:	3,197,118.41 usft	Longitude:	-104.7939200
Position Uncertainty:	0.00 ft	Slot Radius:	13.200 in	Grid Convergence:	0.46 °

Well	DCP 16N-17HZ, 2168' FSL 559' FEL					
Well Position	+N/-S	0.00 ft	Northing:	1,330,331.51 usft	Latitude:	40.2380040
	+E/-W	0.00 ft	Easting:	3,197,118.41 usft	Longitude:	-104.7939200
Position Uncertainty		0.00 ft	Wellhead Elevation:		Ground Level:	4,855.00 ft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	BGGM2012	2013/05/07	8.66	66.82	52,745

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	
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,499.99	10.00	324.70	1,497.45	35.52	-25.15	2.00	2.00	0.00	324.70	
2,409.91	10.00	324.70	2,393.55	164.48	-116.44	0.00	0.00	0.00	0.00	
2,909.89	0.00	0.00	2,891.00	200.00	-141.58	2.00	-2.00	0.00	180.00	
6,597.94	0.00	0.00	6,579.05	200.00	-141.58	0.00	0.00	0.00	0.00	
7,494.48	89.65	180.00	7,152.00	-369.49	-141.58	10.00	10.00	20.08	180.00	
14,105.55	89.65	180.00	7,192.00	-6,980.44	-141.58	0.00	0.00	0.00	0.00	PBHL_DCP 16N-17H

Database:	EDM5000-RobertS-Local	Local Co-ordinate Reference:	Well DCP 16N-17HZ
Company:	US ROCKIES REGION PLANNING	TVD Reference:	GL 4855 & KB 17 @ 4872.00ft (ASSUMED)
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	GL 4855 & KB 17 @ 4872.00ft (ASSUMED)
Site:	DCP 9-8HZ Pad	North Reference:	True
Well:	DCP 16N-17HZ	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
494.00	0.00	0.00	494.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fox Hills Base										
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
544.00	0.00	0.00	544.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9 5/8"										
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
Start Build 2.00										
1,100.00	2.00	324.70	1,099.98	1.42	-1.01	-1.42	2.00	2.00	0.00	0.00
1,200.00	4.00	324.70	1,199.84	5.70	-4.03	-5.70	2.00	2.00	0.00	0.00
1,300.00	6.00	324.70	1,299.45	12.81	-9.07	-12.81	2.00	2.00	0.00	0.00
1,400.00	8.00	324.70	1,398.70	22.76	-16.11	-22.76	2.00	2.00	0.00	0.00
1,499.99	10.00	324.70	1,497.45	35.52	-25.15	-35.52	2.00	2.00	0.00	0.00
Start 909.92 hold at 1499.99 MD										
1,500.00	10.00	324.70	1,497.47	35.52	-25.15	-35.52	0.00	0.00	0.00	0.00
1,600.00	10.00	324.70	1,595.95	49.70	-35.18	-49.70	0.00	0.00	0.00	0.00
1,700.00	10.00	324.70	1,694.43	63.87	-45.21	-63.87	0.00	0.00	0.00	0.00
1,800.00	10.00	324.70	1,792.91	78.04	-55.25	-78.04	0.00	0.00	0.00	0.00
1,900.00	10.00	324.70	1,891.39	92.21	-65.28	-92.21	0.00	0.00	0.00	0.00
2,000.00	10.00	324.70	1,989.87	106.39	-75.31	-106.39	0.00	0.00	0.00	0.00
2,100.00	10.00	324.70	2,088.35	120.56	-85.34	-120.56	0.00	0.00	0.00	0.00
2,200.00	10.00	324.70	2,186.83	134.73	-95.38	-134.73	0.00	0.00	0.00	0.00
2,300.00	10.00	324.70	2,285.31	148.90	-105.41	-148.90	0.00	0.00	0.00	0.00
2,400.00	10.00	324.70	2,383.79	163.08	-115.44	-163.08	0.00	0.00	0.00	0.00
2,409.91	10.00	324.70	2,393.55	164.48	-116.44	-164.48	0.00	0.00	0.00	0.00
Start Drop -2.00										
2,500.00	8.20	324.70	2,482.51	176.11	-124.67	-176.11	2.00	-2.00	0.00	0.00
2,600.00	6.20	324.70	2,581.71	186.33	-131.91	-186.33	2.00	-2.00	0.00	0.00
2,700.00	4.20	324.70	2,681.30	193.73	-137.14	-193.73	2.00	-2.00	0.00	0.00
2,800.00	2.20	324.70	2,781.14	198.28	-140.36	-198.28	2.00	-2.00	0.00	0.00
2,900.00	0.20	324.70	2,881.11	199.99	-141.57	-199.99	2.00	-2.00	0.00	0.00
2,909.89	0.00	0.00	2,891.00	200.00	-141.58	-200.00	2.00	-2.00	0.00	0.00
Start 3688.05 hold at 2909.89 MD										
3,000.00	0.00	0.00	2,981.11	200.00	-141.58	-200.00	0.00	0.00	0.00	0.00
3,100.00	0.00	0.00	3,081.11	200.00	-141.58	-200.00	0.00	0.00	0.00	0.00
3,200.00	0.00	0.00	3,181.11	200.00	-141.58	-200.00	0.00	0.00	0.00	0.00
3,300.00	0.00	0.00	3,281.11	200.00	-141.58	-200.00	0.00	0.00	0.00	0.00
3,400.00	0.00	0.00	3,381.11	200.00	-141.58	-200.00	0.00	0.00	0.00	0.00
3,500.00	0.00	0.00	3,481.11	200.00	-141.58	-200.00	0.00	0.00	0.00	0.00
3,600.00	0.00	0.00	3,581.11	200.00	-141.58	-200.00	0.00	0.00	0.00	0.00
3,700.00	0.00	0.00	3,681.11	200.00	-141.58	-200.00	0.00	0.00	0.00	0.00
3,800.00	0.00	0.00	3,781.11	200.00	-141.58	-200.00	0.00	0.00	0.00	0.00
3,900.00	0.00	0.00	3,881.11	200.00	-141.58	-200.00	0.00	0.00	0.00	0.00
3,920.89	0.00	0.00	3,902.00	200.00	-141.58	-200.00	0.00	0.00	0.00	0.00
Parkman										

Database:	EDM5000-RobertS-Local	Local Co-ordinate Reference:	Well DCP 16N-17HZ
Company:	US ROCKIES REGION PLANNING	TVD Reference:	GL 4855 & KB 17 @ 4872.00ft (ASSUMED)
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	GL 4855 & KB 17 @ 4872.00ft (ASSUMED)
Site:	DCP 9-8HZ Pad	North Reference:	True
Well:	DCP 16N-17HZ	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)
4,000.00	0.00	0.00	3,981.11	200.00	-141.58	-200.00	0.00	0.00	0.00
4,100.00	0.00	0.00	4,081.11	200.00	-141.58	-200.00	0.00	0.00	0.00
4,200.00	0.00	0.00	4,181.11	200.00	-141.58	-200.00	0.00	0.00	0.00
4,300.00	0.00	0.00	4,281.11	200.00	-141.58	-200.00	0.00	0.00	0.00
4,400.00	0.00	0.00	4,381.11	200.00	-141.58	-200.00	0.00	0.00	0.00
4,486.89	0.00	0.00	4,468.00	200.00	-141.58	-200.00	0.00	0.00	0.00
Sussex									
4,500.00	0.00	0.00	4,481.11	200.00	-141.58	-200.00	0.00	0.00	0.00
4,600.00	0.00	0.00	4,581.11	200.00	-141.58	-200.00	0.00	0.00	0.00
4,700.00	0.00	0.00	4,681.11	200.00	-141.58	-200.00	0.00	0.00	0.00
4,800.00	0.00	0.00	4,781.11	200.00	-141.58	-200.00	0.00	0.00	0.00
4,900.00	0.00	0.00	4,881.11	200.00	-141.58	-200.00	0.00	0.00	0.00
5,000.00	0.00	0.00	4,981.11	200.00	-141.58	-200.00	0.00	0.00	0.00
5,100.00	0.00	0.00	5,081.11	200.00	-141.58	-200.00	0.00	0.00	0.00
5,200.00	0.00	0.00	5,181.11	200.00	-141.58	-200.00	0.00	0.00	0.00
5,300.00	0.00	0.00	5,281.11	200.00	-141.58	-200.00	0.00	0.00	0.00
5,400.00	0.00	0.00	5,381.11	200.00	-141.58	-200.00	0.00	0.00	0.00
5,500.00	0.00	0.00	5,481.11	200.00	-141.58	-200.00	0.00	0.00	0.00
5,600.00	0.00	0.00	5,581.11	200.00	-141.58	-200.00	0.00	0.00	0.00
5,700.00	0.00	0.00	5,681.11	200.00	-141.58	-200.00	0.00	0.00	0.00
5,800.00	0.00	0.00	5,781.11	200.00	-141.58	-200.00	0.00	0.00	0.00
5,900.00	0.00	0.00	5,881.11	200.00	-141.58	-200.00	0.00	0.00	0.00
6,000.00	0.00	0.00	5,981.11	200.00	-141.58	-200.00	0.00	0.00	0.00
6,100.00	0.00	0.00	6,081.11	200.00	-141.58	-200.00	0.00	0.00	0.00
6,200.00	0.00	0.00	6,181.11	200.00	-141.58	-200.00	0.00	0.00	0.00
6,300.00	0.00	0.00	6,281.11	200.00	-141.58	-200.00	0.00	0.00	0.00
6,400.00	0.00	0.00	6,381.11	200.00	-141.58	-200.00	0.00	0.00	0.00
6,500.00	0.00	0.00	6,481.11	200.00	-141.58	-200.00	0.00	0.00	0.00
6,597.94	0.00	0.00	6,579.05	200.00	-141.58	-200.00	0.00	0.00	0.00
Start DLS 10.00 TFO 180.00									
6,600.00	0.21	180.00	6,581.11	200.00	-141.58	-200.00	10.00	10.00	0.00
6,700.00	10.21	180.00	6,680.57	190.93	-141.58	-190.93	10.00	10.00	0.00
6,800.00	20.21	180.00	6,776.95	164.74	-141.58	-164.74	10.00	10.00	0.00
6,900.00	30.21	180.00	6,867.31	122.21	-141.58	-122.21	10.00	10.00	0.00
7,000.00	40.21	180.00	6,948.91	64.63	-141.58	-64.63	10.00	10.00	0.00
7,100.00	50.21	180.00	7,019.28	-6.25	-141.58	6.25	10.00	10.00	0.00
7,197.45	59.95	180.00	7,075.00	-86.05	-141.58	86.05	10.00	10.00	0.00
Sharon Springs									
7,200.00	60.21	180.00	7,076.27	-88.26	-141.58	88.26	10.00	10.00	0.00
7,300.00	70.21	180.00	7,118.15	-178.93	-141.58	178.93	10.00	10.00	0.00
7,342.31	74.44	180.00	7,131.00	-219.23	-141.58	219.23	10.00	10.00	0.00
Niobrara A									
7,400.00	80.21	180.00	7,143.66	-275.49	-141.58	275.49	10.00	10.00	0.00
7,494.47	89.65	180.00	7,152.00	-369.49	-141.58	369.49	10.00	10.00	0.00
Start 6611.07 hold at 7494.47 MD - 7"(1806' FSL 700' FEL)									
7,500.00	89.65	180.00	7,152.03	-375.02	-141.58	375.02	0.01	0.01	0.00
7,600.00	89.65	180.00	7,152.64	-475.01	-141.58	475.01	0.00	0.00	0.00
7,700.00	89.65	180.00	7,153.24	-575.01	-141.58	575.01	0.00	0.00	0.00
7,800.00	89.65	180.00	7,153.85	-675.01	-141.58	675.01	0.00	0.00	0.00
7,900.00	89.65	180.00	7,154.45	-775.01	-141.58	775.01	0.00	0.00	0.00
8,000.00	89.65	180.00	7,155.06	-875.01	-141.58	875.01	0.00	0.00	0.00
8,100.00	89.65	180.00	7,155.66	-975.00	-141.58	975.00	0.00	0.00	0.00
8,200.00	89.65	180.00	7,156.27	-1,075.00	-141.58	1,075.00	0.00	0.00	0.00
8,300.00	89.65	180.00	7,156.87	-1,175.00	-141.58	1,175.00	0.00	0.00	0.00

Database:	EDM5000-RobertS-Local	Local Co-ordinate Reference:	Well DCP 16N-17HZ
Company:	US ROCKIES REGION PLANNING	TVD Reference:	GL 4855 & KB 17 @ 4872.00ft (ASSUMED)
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	GL 4855 & KB 17 @ 4872.00ft (ASSUMED)
Site:	DCP 9-8HZ Pad	North Reference:	True
Well:	DCP 16N-17HZ	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)
8,400.00	89.65	180.00	7,157.48	-1,275.00	-141.58	1,275.00	0.00	0.00	0.00
8,500.00	89.65	180.00	7,158.08	-1,375.00	-141.58	1,375.00	0.00	0.00	0.00
8,600.00	89.65	180.00	7,158.69	-1,475.00	-141.58	1,475.00	0.00	0.00	0.00
8,700.00	89.65	180.00	7,159.29	-1,574.99	-141.58	1,574.99	0.00	0.00	0.00
8,800.00	89.65	180.00	7,159.90	-1,674.99	-141.58	1,674.99	0.00	0.00	0.00
8,900.00	89.65	180.00	7,160.50	-1,774.99	-141.58	1,774.99	0.00	0.00	0.00
9,000.00	89.65	180.00	7,161.11	-1,874.99	-141.58	1,874.99	0.00	0.00	0.00
9,100.00	89.65	180.00	7,161.71	-1,974.99	-141.58	1,974.99	0.00	0.00	0.00
9,200.00	89.65	180.00	7,162.32	-2,074.98	-141.58	2,074.98	0.00	0.00	0.00
9,300.00	89.65	180.00	7,162.92	-2,174.98	-141.58	2,174.98	0.00	0.00	0.00
9,400.00	89.65	180.00	7,163.53	-2,274.98	-141.58	2,274.98	0.00	0.00	0.00
9,500.00	89.65	180.00	7,164.13	-2,374.98	-141.58	2,374.98	0.00	0.00	0.00
9,600.00	89.65	180.00	7,164.74	-2,474.98	-141.58	2,474.98	0.00	0.00	0.00
9,700.00	89.65	180.00	7,165.34	-2,574.98	-141.58	2,574.98	0.00	0.00	0.00
9,800.00	89.65	180.00	7,165.95	-2,674.97	-141.58	2,674.97	0.00	0.00	0.00
9,900.00	89.65	180.00	7,166.55	-2,774.97	-141.58	2,774.97	0.00	0.00	0.00
10,000.00	89.65	180.00	7,167.16	-2,874.97	-141.58	2,874.97	0.00	0.00	0.00
10,100.00	89.65	180.00	7,167.76	-2,974.97	-141.58	2,974.97	0.00	0.00	0.00
10,200.00	89.65	180.00	7,168.37	-3,074.97	-141.58	3,074.97	0.00	0.00	0.00
10,300.00	89.65	180.00	7,168.97	-3,174.96	-141.58	3,174.96	0.00	0.00	0.00
10,400.00	89.65	180.00	7,169.58	-3,274.96	-141.58	3,274.96	0.00	0.00	0.00
10,500.00	89.65	180.00	7,170.18	-3,374.96	-141.58	3,374.96	0.00	0.00	0.00
10,600.00	89.65	180.00	7,170.79	-3,474.96	-141.58	3,474.96	0.00	0.00	0.00
10,700.00	89.65	180.00	7,171.39	-3,574.96	-141.58	3,574.96	0.00	0.00	0.00
10,800.00	89.65	180.00	7,172.00	-3,674.96	-141.58	3,674.96	0.00	0.00	0.00
10,900.00	89.65	180.00	7,172.60	-3,774.95	-141.58	3,774.95	0.00	0.00	0.00
11,000.00	89.65	180.00	7,173.21	-3,874.95	-141.58	3,874.95	0.00	0.00	0.00
11,100.00	89.65	180.00	7,173.81	-3,974.95	-141.58	3,974.95	0.00	0.00	0.00
11,200.00	89.65	180.00	7,174.42	-4,074.95	-141.58	4,074.95	0.00	0.00	0.00
11,296.03	89.65	180.00	7,175.00	-4,170.98	-141.58	4,170.98	0.00	0.00	0.00
Niobrara B									
11,300.00	89.65	180.00	7,175.02	-4,174.95	-141.58	4,174.95	0.00	0.00	0.00
11,400.00	89.65	180.00	7,175.63	-4,274.94	-141.58	4,274.94	0.00	0.00	0.00
11,500.00	89.65	180.00	7,176.23	-4,374.94	-141.58	4,374.94	0.00	0.00	0.00
11,600.00	89.65	180.00	7,176.84	-4,474.94	-141.58	4,474.94	0.00	0.00	0.00
11,700.00	89.65	180.00	7,177.44	-4,574.94	-141.58	4,574.94	0.00	0.00	0.00
11,800.00	89.65	180.00	7,178.05	-4,674.94	-141.58	4,674.94	0.00	0.00	0.00
11,900.00	89.65	180.00	7,178.65	-4,774.94	-141.58	4,774.94	0.00	0.00	0.00
12,000.00	89.65	180.00	7,179.26	-4,874.93	-141.58	4,874.93	0.00	0.00	0.00
12,100.00	89.65	180.00	7,179.86	-4,974.93	-141.58	4,974.93	0.00	0.00	0.00
12,200.00	89.65	180.00	7,180.47	-5,074.93	-141.58	5,074.93	0.00	0.00	0.00
12,300.00	89.65	180.00	7,181.08	-5,174.93	-141.58	5,174.93	0.00	0.00	0.00
12,400.00	89.65	180.00	7,181.68	-5,274.93	-141.58	5,274.93	0.00	0.00	0.00
12,500.00	89.65	180.00	7,182.29	-5,374.92	-141.58	5,374.92	0.00	0.00	0.00
12,600.00	89.65	180.00	7,182.89	-5,474.92	-141.58	5,474.92	0.00	0.00	0.00
12,700.00	89.65	180.00	7,183.50	-5,574.92	-141.58	5,574.92	0.00	0.00	0.00
12,800.00	89.65	180.00	7,184.10	-5,674.92	-141.58	5,674.92	0.00	0.00	0.00
12,900.00	89.65	180.00	7,184.71	-5,774.92	-141.58	5,774.92	0.00	0.00	0.00
13,000.00	89.65	180.00	7,185.31	-5,874.92	-141.58	5,874.92	0.00	0.00	0.00
13,100.00	89.65	180.00	7,185.92	-5,974.91	-141.58	5,974.91	0.00	0.00	0.00
13,200.00	89.65	180.00	7,186.52	-6,074.91	-141.58	6,074.91	0.00	0.00	0.00
13,300.00	89.65	180.00	7,187.13	-6,174.91	-141.58	6,174.91	0.00	0.00	0.00
13,400.00	89.65	180.00	7,187.73	-6,274.91	-141.58	6,274.91	0.00	0.00	0.00

Database:	EDM5000-RobertS-Local	Local Co-ordinate Reference:	Well DCP 16N-17HZ
Company:	US ROCKIES REGION PLANNING	TVD Reference:	GL 4855 & KB 17 @ 4872.00ft (ASSUMED)
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	GL 4855 & KB 17 @ 4872.00ft (ASSUMED)
Site:	DCP 9-8HZ Pad	North Reference:	True
Well:	DCP 16N-17HZ	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)	
13,500.00	89.65	180.00	7,188.34	-6,374.91	-141.58	6,374.91	0.00	0.00	0.00	
13,600.00	89.65	180.00	7,188.94	-6,474.90	-141.58	6,474.90	0.00	0.00	0.00	
13,700.00	89.65	180.00	7,189.55	-6,574.90	-141.58	6,574.90	0.00	0.00	0.00	
13,800.00	89.65	180.00	7,190.15	-6,674.90	-141.58	6,674.90	0.00	0.00	0.00	
13,900.00	89.65	180.00	7,190.76	-6,774.90	-141.58	6,774.90	0.00	0.00	0.00	
14,000.00	89.65	180.00	7,191.36	-6,874.90	-141.58	6,874.90	0.00	0.00	0.00	
14,100.00	89.65	180.00	7,191.97	-6,974.90	-141.58	6,974.90	0.00	0.00	0.00	
14,105.55	89.65	180.00	7,192.00	-6,980.44	-141.58	6,980.44	0.00	0.00	0.00	
TD at 14105.54 - PBHL_DCP 16N-17HZ(460' FSL 740' FEL)										

Design Targets										
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude	
PBHL_DCP 16N-17HZ(460' FSL 740' FEL)	0.00	0.00	7,192.00	-6,980.44	-141.58	1,323,350.18	3,197,032.42	40.2188420	-104.7944270	
- hit/miss target										
- Shape										
- plan hits target center										
- Point										

Casing Points						
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)		
544.00	544.00	9 5/8"	9.625	12.250		
7,494.47	7,152.00	7"(1806' FSL 700' FEL)	7.000	7.500		

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
494.00	494.00	Fox Hills Base				
3,920.89	3,902.00	Parkman				
4,486.89	4,468.00	Sussex				
7,197.45	7,075.00	Sharon Springs				
7,342.31	7,131.00	Niobrara A				
11,296.03	7,175.00	Niobrara B				

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Comment	
1,000.00	1,000.00	0.00	0.00	Start Build 2.00	
1,499.99	1,497.45	35.52	-25.15	Start 909.92 hold at 1499.99 MD	
2,409.91	2,393.55	164.48	-116.44	Start Drop -2.00	
2,909.89	2,891.00	200.00	-141.58	Start 3688.05 hold at 2909.89 MD	
6,597.94	6,579.05	200.00	-141.58	Start DLS 10.00 TFO 180.00	
7,494.48	7,152.00	-369.49	-141.58	Start 6611.07 hold at 7494.47 MD	
14,105.55	7,192.00	-6,980.44	-141.58	TD at 14105.54	