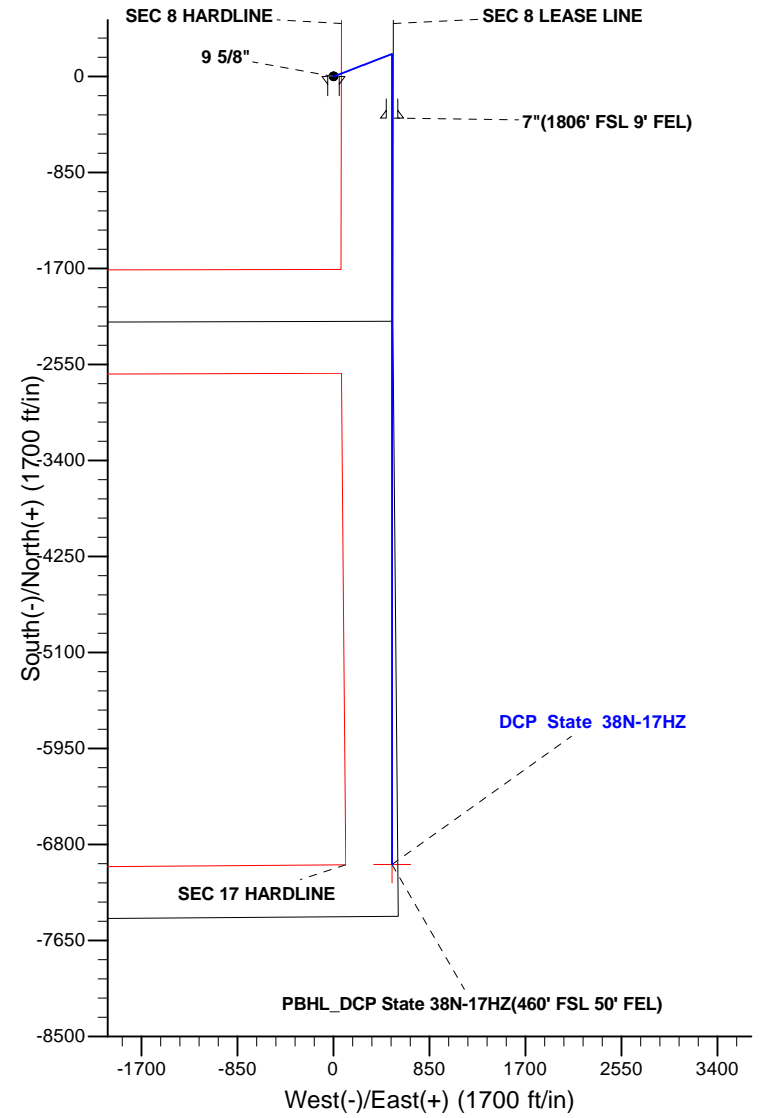
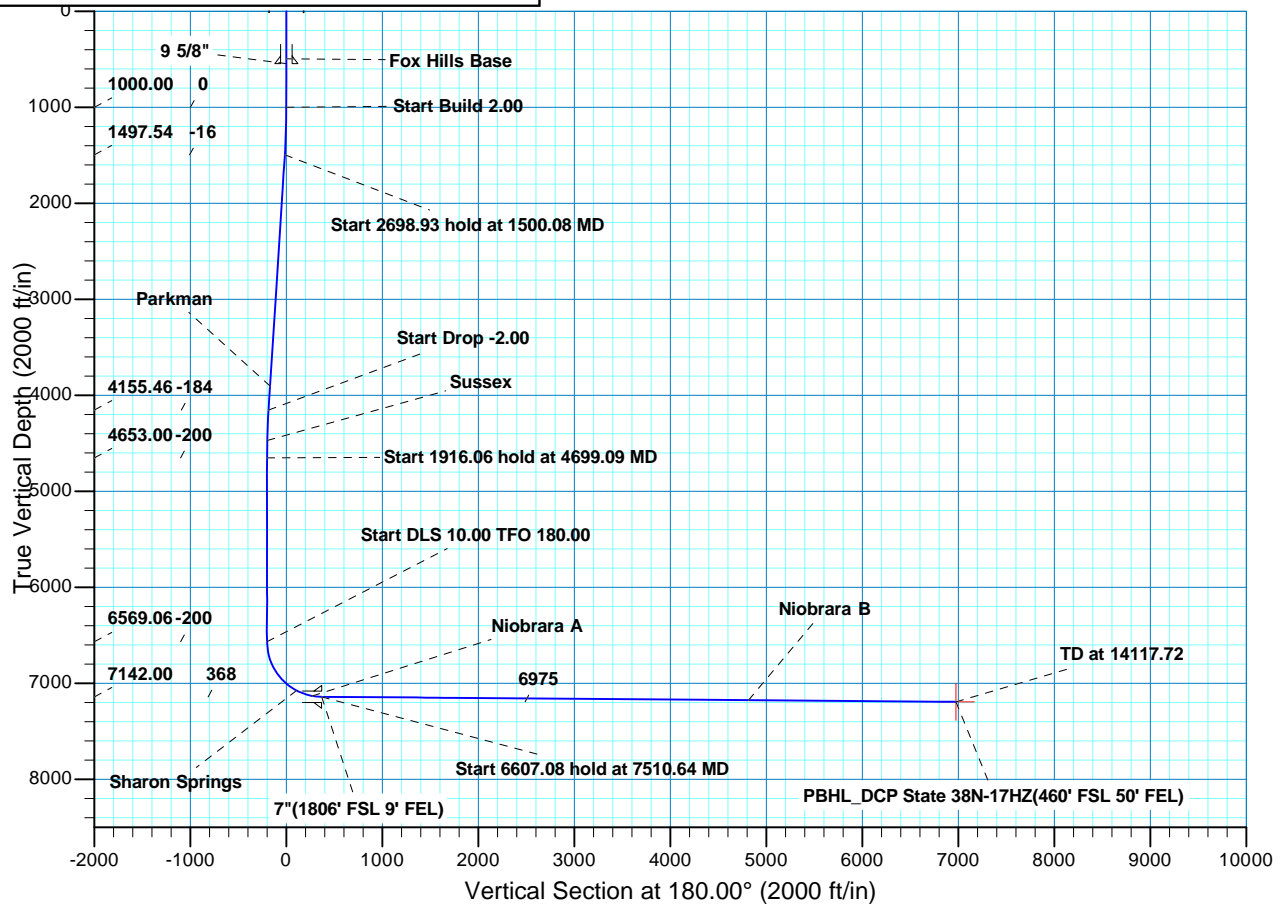


WELL DETAILS: DCP State 38N-17HZ									
GL 4855' & KB 17' @ 4872.00ft (ASSUMED)									
	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude			
	0.00	0.00	1330331.74	3197148.28	40.2380040	-104.7938130			
SECTION DETAILS									
MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSec	Target
0.00	0.00	0.00	0.00	0.00	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
1500.08	10.00	68.91	1497.54	15.67	40.62	2.00	68.91	-15.67	
4199.01	10.00	68.91	4155.46	184.33	477.96	0.00	0.00	-184.33	
4699.09	0.00	0.00	4653.00	200.00	518.58	2.00	180.00	-200.00	
6615.15	0.00	0.00	6569.06	200.00	518.58	0.00	0.00	-200.00	
7510.64	89.55	180.00	7142.00	-368.45	518.58	10.00	180.00	368.45	
14117.72	89.55	180.00	7194.00	-6975.32	518.58	0.00	0.006975.32		PBHL_DCP State 38N-17HZ(460' FSL 50' FEL)
FORMATION TOP DETAILS					CASING DETAILS				
TVDP	MD	Formation	Inc	TVD	MD	Name	Size		
496.00	496.00	Fox Hills Base	0.00	546.00	546.00	9 5/8"	9.625		
3904.00	3943.67	Parkman	10.00	7142.00	7510.64	7"	7.000		
4470.00	4515.96	Sussex	3.66						
7077.00	7239.54	Sharon Springs	62.44						
7133.00	7413.36	Niobrara A	79.82						
7177.00	11957.71	Niobrara B	89.55						





Scientific Drilling

US ROCKIES REGION PLANNING

COLORADO NORTHERN ZONE - 83

DCP 9-8HZ Pad

DCP State 38N-17HZ

OH

Plan: PLAN #1 PRELIMINARY

Standard Planning Report

07 May, 2013

Database:	EDM5000-RobertS-Local	Local Co-ordinate Reference:	Well DCP State 38N-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 State 38N-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 State 38N-17HZ, 2168' FSL 529' FEL					
Well Position	+N/-S	-0.01 ft	Northing:	1,330,331.73 usft	Latitude:	40.2380040
	+E/-W	29.87 ft	Easting:	3,197,148.28 usft	Longitude:	-104.7938130
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	
1,500.08	10.00	68.91	1,497.54	15.67	40.62	2.00	2.00	0.00	68.91	
4,199.01	10.00	68.91	4,155.46	184.33	477.96	0.00	0.00	0.00	0.00	
4,699.09	0.00	0.00	4,653.00	200.00	518.58	2.00	-2.00	0.00	180.00	
6,615.15	0.00	0.00	6,569.06	200.00	518.58	0.00	0.00	0.00	0.00	
7,510.64	89.55	180.00	7,142.00	-368.45	518.58	10.00	10.00	20.10	180.00	
14,117.72	89.55	180.00	7,194.00	-6,975.32	518.58	0.00	0.00	0.00	0.00	PBHL_DCP State 38†

Database:	EDM5000-RobertS-Local	Local Co-ordinate Reference:	Well DCP State 38N-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 State 38N-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
496.00	0.00	0.00	496.00	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
546.00	0.00	0.00	546.00	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	68.91	1,099.98	0.63	1.63	-0.63	2.00	2.00	0.00	0.00
1,200.00	4.00	68.91	1,199.84	2.51	6.51	-2.51	2.00	2.00	0.00	0.00
1,300.00	6.00	68.91	1,299.45	5.65	14.64	-5.65	2.00	2.00	0.00	0.00
1,400.00	8.00	68.91	1,398.70	10.03	26.01	-10.03	2.00	2.00	0.00	0.00
1,500.00	10.00	68.91	1,497.47	15.66	40.61	-15.66	2.00	2.00	0.00	0.00
1,500.08	10.00	68.91	1,497.54	15.67	40.62	-15.67	2.00	2.00	0.00	0.00
Start 2698.93 hold at 1500.08 MD										
1,600.00	10.00	68.91	1,595.95	21.91	56.81	-21.91	0.00	0.00	0.00	0.00
1,700.00	10.00	68.91	1,694.43	28.16	73.02	-28.16	0.00	0.00	0.00	0.00
1,800.00	10.00	68.91	1,792.91	34.41	89.22	-34.41	0.00	0.00	0.00	0.00
1,900.00	10.00	68.91	1,891.39	40.66	105.42	-40.66	0.00	0.00	0.00	0.00
2,000.00	10.00	68.91	1,989.87	46.91	121.63	-46.91	0.00	0.00	0.00	0.00
2,100.00	10.00	68.91	2,088.35	53.16	137.83	-53.16	0.00	0.00	0.00	0.00
2,200.00	10.00	68.91	2,186.83	59.41	154.04	-59.41	0.00	0.00	0.00	0.00
2,300.00	10.00	68.91	2,285.31	65.66	170.24	-65.66	0.00	0.00	0.00	0.00
2,400.00	10.00	68.91	2,383.79	71.91	186.44	-71.91	0.00	0.00	0.00	0.00
2,500.00	10.00	68.91	2,482.27	78.16	202.65	-78.16	0.00	0.00	0.00	0.00
2,600.00	10.00	68.91	2,580.75	84.40	218.85	-84.40	0.00	0.00	0.00	0.00
2,700.00	10.00	68.91	2,679.23	90.65	235.06	-90.65	0.00	0.00	0.00	0.00
2,800.00	10.00	68.91	2,777.71	96.90	251.26	-96.90	0.00	0.00	0.00	0.00
2,900.00	10.00	68.91	2,876.19	103.15	267.46	-103.15	0.00	0.00	0.00	0.00
3,000.00	10.00	68.91	2,974.67	109.40	283.67	-109.40	0.00	0.00	0.00	0.00
3,100.00	10.00	68.91	3,073.15	115.65	299.87	-115.65	0.00	0.00	0.00	0.00
3,200.00	10.00	68.91	3,171.63	121.90	316.08	-121.90	0.00	0.00	0.00	0.00
3,300.00	10.00	68.91	3,270.11	128.15	332.28	-128.15	0.00	0.00	0.00	0.00
3,400.00	10.00	68.91	3,368.59	134.40	348.48	-134.40	0.00	0.00	0.00	0.00
3,500.00	10.00	68.91	3,467.07	140.65	364.69	-140.65	0.00	0.00	0.00	0.00
3,600.00	10.00	68.91	3,565.55	146.90	380.89	-146.90	0.00	0.00	0.00	0.00
3,700.00	10.00	68.91	3,664.03	153.15	397.10	-153.15	0.00	0.00	0.00	0.00
3,800.00	10.00	68.91	3,762.51	159.40	413.30	-159.40	0.00	0.00	0.00	0.00
3,900.00	10.00	68.91	3,860.99	165.65	429.51	-165.65	0.00	0.00	0.00	0.00
3,943.67	10.00	68.91	3,904.00	168.38	436.58	-168.38	0.00	0.00	0.00	0.00
Parkman										
4,000.00	10.00	68.91	3,959.47	171.90	445.71	-171.90	0.00	0.00	0.00	0.00
4,100.00	10.00	68.91	4,057.95	178.15	461.91	-178.15	0.00	0.00	0.00	0.00
4,199.01	10.00	68.91	4,155.46	184.33	477.96	-184.33	0.00	0.00	0.00	0.00
Start Drop -2.00										

Database:	EDM5000-RobertS-Local	Local Co-ordinate Reference:	Well DCP State 38N-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 State 38N-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)	
4,200.00	9.98	68.91	4,156.43	184.40	478.12	-184.40	2.00	-2.00	0.00	
4,300.00	7.98	68.91	4,255.20	190.01	492.68	-190.01	2.00	-2.00	0.00	
4,400.00	5.98	68.91	4,354.46	194.39	504.02	-194.39	2.00	-2.00	0.00	
4,500.00	3.98	68.91	4,454.07	197.51	512.12	-197.51	2.00	-2.00	0.00	
4,515.96	3.66	68.91	4,470.00	197.89	513.12	-197.89	2.00	-2.00	0.00	
Sussex										
4,600.00	1.98	68.91	4,553.93	199.38	516.98	-199.38	2.00	-2.00	0.00	
4,699.09	0.00	0.00	4,653.00	200.00	518.58	-200.00	2.00	-2.00	0.00	
Start 1916.06 hold at 4699.09 MD										
4,700.00	0.00	0.00	4,653.91	200.00	518.58	-200.00	0.00	0.00	0.00	
4,800.00	0.00	0.00	4,753.91	200.00	518.58	-200.00	0.00	0.00	0.00	
4,900.00	0.00	0.00	4,853.91	200.00	518.58	-200.00	0.00	0.00	0.00	
5,000.00	0.00	0.00	4,953.91	200.00	518.58	-200.00	0.00	0.00	0.00	
5,100.00	0.00	0.00	5,053.91	200.00	518.58	-200.00	0.00	0.00	0.00	
5,200.00	0.00	0.00	5,153.91	200.00	518.58	-200.00	0.00	0.00	0.00	
5,300.00	0.00	0.00	5,253.91	200.00	518.58	-200.00	0.00	0.00	0.00	
5,400.00	0.00	0.00	5,353.91	200.00	518.58	-200.00	0.00	0.00	0.00	
5,500.00	0.00	0.00	5,453.91	200.00	518.58	-200.00	0.00	0.00	0.00	
5,600.00	0.00	0.00	5,553.91	200.00	518.58	-200.00	0.00	0.00	0.00	
5,700.00	0.00	0.00	5,653.91	200.00	518.58	-200.00	0.00	0.00	0.00	
5,800.00	0.00	0.00	5,753.91	200.00	518.58	-200.00	0.00	0.00	0.00	
5,900.00	0.00	0.00	5,853.91	200.00	518.58	-200.00	0.00	0.00	0.00	
6,000.00	0.00	0.00	5,953.91	200.00	518.58	-200.00	0.00	0.00	0.00	
6,100.00	0.00	0.00	6,053.91	200.00	518.58	-200.00	0.00	0.00	0.00	
6,200.00	0.00	0.00	6,153.91	200.00	518.58	-200.00	0.00	0.00	0.00	
6,300.00	0.00	0.00	6,253.91	200.00	518.58	-200.00	0.00	0.00	0.00	
6,400.00	0.00	0.00	6,353.91	200.00	518.58	-200.00	0.00	0.00	0.00	
6,500.00	0.00	0.00	6,453.91	200.00	518.58	-200.00	0.00	0.00	0.00	
6,600.00	0.00	0.00	6,553.91	200.00	518.58	-200.00	0.00	0.00	0.00	
6,615.15	0.00	0.00	6,569.06	200.00	518.58	-200.00	0.00	0.00	0.00	
Start DLS 10.00 TFO 180.00										
6,700.00	8.49	180.00	6,653.60	193.73	518.58	-193.73	10.00	10.00	0.00	
6,800.00	18.49	180.00	6,750.72	170.44	518.58	-170.44	10.00	10.00	0.00	
6,900.00	28.49	180.00	6,842.32	130.64	518.58	-130.64	10.00	10.00	0.00	
7,000.00	38.49	180.00	6,925.62	75.54	518.58	-75.54	10.00	10.00	0.00	
7,100.00	48.49	180.00	6,998.08	6.81	518.58	-6.81	10.00	10.00	0.00	
7,200.00	58.49	180.00	7,057.51	-73.46	518.58	73.46	10.00	10.00	0.00	
7,239.54	62.44	180.00	7,077.00	-107.86	518.58	107.86	10.00	10.00	0.00	
Sharon Springs										
7,300.00	68.49	180.00	7,102.10	-162.83	518.58	162.83	10.00	10.00	0.00	
7,400.00	78.49	180.00	7,130.49	-258.58	518.58	258.58	10.00	10.00	0.00	
7,413.36	79.82	180.00	7,133.00	-271.70	518.58	271.70	10.00	10.00	0.00	
Niobrara A										
7,500.00	88.49	180.00	7,141.82	-357.81	518.58	357.81	10.00	10.00	0.00	
7,510.64	89.55	180.00	7,142.00	-368.45	518.58	368.45	10.00	10.00	0.00	
Start 6607.08 hold at 7510.64 MD - 7"(1806' FSL 9' FEL)										
7,600.00	89.55	180.00	7,142.70	-457.81	518.58	457.81	0.00	0.00	0.00	
7,700.00	89.55	180.00	7,143.49	-557.81	518.58	557.81	0.00	0.00	0.00	
7,800.00	89.55	180.00	7,144.28	-657.80	518.58	657.80	0.00	0.00	0.00	
7,900.00	89.55	180.00	7,145.06	-757.80	518.58	757.80	0.00	0.00	0.00	
8,000.00	89.55	180.00	7,145.85	-857.80	518.58	857.80	0.00	0.00	0.00	
8,100.00	89.55	180.00	7,146.64	-957.79	518.58	957.79	0.00	0.00	0.00	
8,200.00	89.55	180.00	7,147.43	-1,057.79	518.58	1,057.79	0.00	0.00	0.00	

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Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	GL 4855' & KB 17' @ 4872.00ft (ASSUMED)
Site:	DCP 9-8HZ Pad	North Reference:	True
Well:	DCP State 38N-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)	
8,300.00	89.55	180.00	7,148.21	-1,157.79	518.58	1,157.79	0.00	0.00	0.00	
8,400.00	89.55	180.00	7,149.00	-1,257.78	518.58	1,257.78	0.00	0.00	0.00	
8,500.00	89.55	180.00	7,149.79	-1,357.78	518.58	1,357.78	0.00	0.00	0.00	
8,600.00	89.55	180.00	7,150.57	-1,457.78	518.58	1,457.78	0.00	0.00	0.00	
8,700.00	89.55	180.00	7,151.36	-1,557.77	518.58	1,557.77	0.00	0.00	0.00	
8,800.00	89.55	180.00	7,152.15	-1,657.77	518.58	1,657.77	0.00	0.00	0.00	
8,900.00	89.55	180.00	7,152.93	-1,757.77	518.58	1,757.77	0.00	0.00	0.00	
9,000.00	89.55	180.00	7,153.72	-1,857.76	518.58	1,857.76	0.00	0.00	0.00	
9,100.00	89.55	180.00	7,154.51	-1,957.76	518.58	1,957.76	0.00	0.00	0.00	
9,200.00	89.55	180.00	7,155.30	-2,057.76	518.58	2,057.76	0.00	0.00	0.00	
9,300.00	89.55	180.00	7,156.08	-2,157.76	518.58	2,157.76	0.00	0.00	0.00	
9,400.00	89.55	180.00	7,156.87	-2,257.75	518.58	2,257.75	0.00	0.00	0.00	
9,500.00	89.55	180.00	7,157.66	-2,357.75	518.58	2,357.75	0.00	0.00	0.00	
9,600.00	89.55	180.00	7,158.44	-2,457.75	518.58	2,457.75	0.00	0.00	0.00	
9,700.00	89.55	180.00	7,159.23	-2,557.74	518.58	2,557.74	0.00	0.00	0.00	
9,800.00	89.55	180.00	7,160.02	-2,657.74	518.58	2,657.74	0.00	0.00	0.00	
9,900.00	89.55	180.00	7,160.81	-2,757.74	518.58	2,757.74	0.00	0.00	0.00	
10,000.00	89.55	180.00	7,161.59	-2,857.73	518.58	2,857.73	0.00	0.00	0.00	
10,100.00	89.55	180.00	7,162.38	-2,957.73	518.58	2,957.73	0.00	0.00	0.00	
10,200.00	89.55	180.00	7,163.17	-3,057.73	518.58	3,057.73	0.00	0.00	0.00	
10,300.00	89.55	180.00	7,163.95	-3,157.72	518.58	3,157.72	0.00	0.00	0.00	
10,400.00	89.55	180.00	7,164.74	-3,257.72	518.58	3,257.72	0.00	0.00	0.00	
10,500.00	89.55	180.00	7,165.53	-3,357.72	518.58	3,357.72	0.00	0.00	0.00	
10,600.00	89.55	180.00	7,166.31	-3,457.72	518.58	3,457.72	0.00	0.00	0.00	
10,700.00	89.55	180.00	7,167.10	-3,557.71	518.58	3,557.71	0.00	0.00	0.00	
10,800.00	89.55	180.00	7,167.89	-3,657.71	518.58	3,657.71	0.00	0.00	0.00	
10,900.00	89.55	180.00	7,168.68	-3,757.71	518.58	3,757.71	0.00	0.00	0.00	
11,000.00	89.55	180.00	7,169.46	-3,857.70	518.58	3,857.70	0.00	0.00	0.00	
11,100.00	89.55	180.00	7,170.25	-3,957.70	518.58	3,957.70	0.00	0.00	0.00	
11,200.00	89.55	180.00	7,171.04	-4,057.70	518.58	4,057.70	0.00	0.00	0.00	
11,300.00	89.55	180.00	7,171.82	-4,157.69	518.58	4,157.69	0.00	0.00	0.00	
11,400.00	89.55	180.00	7,172.61	-4,257.69	518.58	4,257.69	0.00	0.00	0.00	
11,500.00	89.55	180.00	7,173.40	-4,357.69	518.58	4,357.69	0.00	0.00	0.00	
11,600.00	89.55	180.00	7,174.18	-4,457.68	518.58	4,457.68	0.00	0.00	0.00	
11,700.00	89.55	180.00	7,174.97	-4,557.68	518.58	4,557.68	0.00	0.00	0.00	
11,800.00	89.55	180.00	7,175.76	-4,657.68	518.58	4,657.68	0.00	0.00	0.00	
11,900.00	89.55	180.00	7,176.55	-4,757.68	518.58	4,757.68	0.00	0.00	0.00	
11,957.71	89.55	180.00	7,177.00	-4,815.38	518.58	4,815.38	0.00	0.00	0.00	
Niobrara B										
12,000.00	89.55	180.00	7,177.33	-4,857.67	518.58	4,857.67	0.00	0.00	0.00	
12,100.00	89.55	180.00	7,178.12	-4,957.67	518.58	4,957.67	0.00	0.00	0.00	
12,200.00	89.55	180.00	7,178.91	-5,057.67	518.58	5,057.67	0.00	0.00	0.00	
12,300.00	89.55	180.00	7,179.69	-5,157.66	518.58	5,157.66	0.00	0.00	0.00	
12,400.00	89.55	180.00	7,180.48	-5,257.66	518.58	5,257.66	0.00	0.00	0.00	
12,500.00	89.55	180.00	7,181.27	-5,357.66	518.58	5,357.66	0.00	0.00	0.00	
12,600.00	89.55	180.00	7,182.06	-5,457.65	518.58	5,457.65	0.00	0.00	0.00	
12,700.00	89.55	180.00	7,182.84	-5,557.65	518.58	5,557.65	0.00	0.00	0.00	
12,800.00	89.55	180.00	7,183.63	-5,657.65	518.58	5,657.65	0.00	0.00	0.00	
12,900.00	89.55	180.00	7,184.42	-5,757.64	518.58	5,757.64	0.00	0.00	0.00	
13,000.00	89.55	180.00	7,185.20	-5,857.64	518.58	5,857.64	0.00	0.00	0.00	
13,100.00	89.55	180.00	7,185.99	-5,957.64	518.58	5,957.64	0.00	0.00	0.00	
13,200.00	89.55	180.00	7,186.78	-6,057.63	518.58	6,057.63	0.00	0.00	0.00	
13,300.00	89.55	180.00	7,187.56	-6,157.63	518.58	6,157.63	0.00	0.00	0.00	

Database:	EDM5000-RobertS-Local	Local Co-ordinate Reference:	Well DCP State 38N-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 State 38N-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)
13,400.00	89.55	180.00	7,188.35	-6,257.63	518.58	6,257.63	0.00	0.00	0.00
13,500.00	89.55	180.00	7,189.14	-6,357.63	518.58	6,357.63	0.00	0.00	0.00
13,600.00	89.55	180.00	7,189.93	-6,457.62	518.58	6,457.62	0.00	0.00	0.00
13,700.00	89.55	180.00	7,190.71	-6,557.62	518.58	6,557.62	0.00	0.00	0.00
13,800.00	89.55	180.00	7,191.50	-6,657.62	518.58	6,657.62	0.00	0.00	0.00
13,900.00	89.55	180.00	7,192.29	-6,757.61	518.58	6,757.61	0.00	0.00	0.00
14,000.00	89.55	180.00	7,193.07	-6,857.61	518.58	6,857.61	0.00	0.00	0.00
14,100.00	89.55	180.00	7,193.86	-6,957.61	518.58	6,957.61	0.00	0.00	0.00
14,117.72	89.55	180.00	7,194.00	-6,975.32	518.58	6,975.32	0.00	0.00	0.00
TD at 14117.72 - PBHL_DCP State 38N-17HZ(460' FSL 50' 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 State 38N-1 - hit/miss target - Shape - Point	0.00	0.00	7,194.00	-6,975.32	518.58	1,323,360.78	3,197,722.39	40.2188560	-104.7919560

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)	
546.00	546.00	9 5/8"	9.625	12.250	
7,510.64	7,142.00	7"(1806' FSL 9' FEL)	7.000	7.500	

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
496.00	496.00	Fox Hills Base				
3,943.67	3,904.00	Parkman				
4,515.96	4,470.00	Sussex				
7,239.54	7,077.00	Sharon Springs				
7,413.36	7,133.00	Niobrara A				
11,957.71	7,177.00	Niobrara B				

Database:	EDM5000-RobertS-Local	Local Co-ordinate Reference:	Well DCP State 38N-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 State 38N-17HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	PLAN #1 PRELIMINARY		

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment	
		+N/-S (ft)	+E/-W (ft)		
1,000.00	1,000.00	0.00	0.00	Start Build 2.00	
1,500.08	1,497.54	15.67	40.62	Start 2698.93 hold at 1500.08 MD	
4,199.01	4,155.46	184.33	477.96	Start Drop -2.00	
4,699.09	4,653.00	200.00	518.58	Start 1916.06 hold at 4699.09 MD	
6,615.15	6,569.06	200.00	518.58	Start DLS 10.00 TFO 180.00	
7,510.64	7,142.00	-368.45	518.58	Start 6607.08 hold at 7510.64 MD	
14,117.72	7,194.00	-6,975.32	518.58	TD at 14117.72	