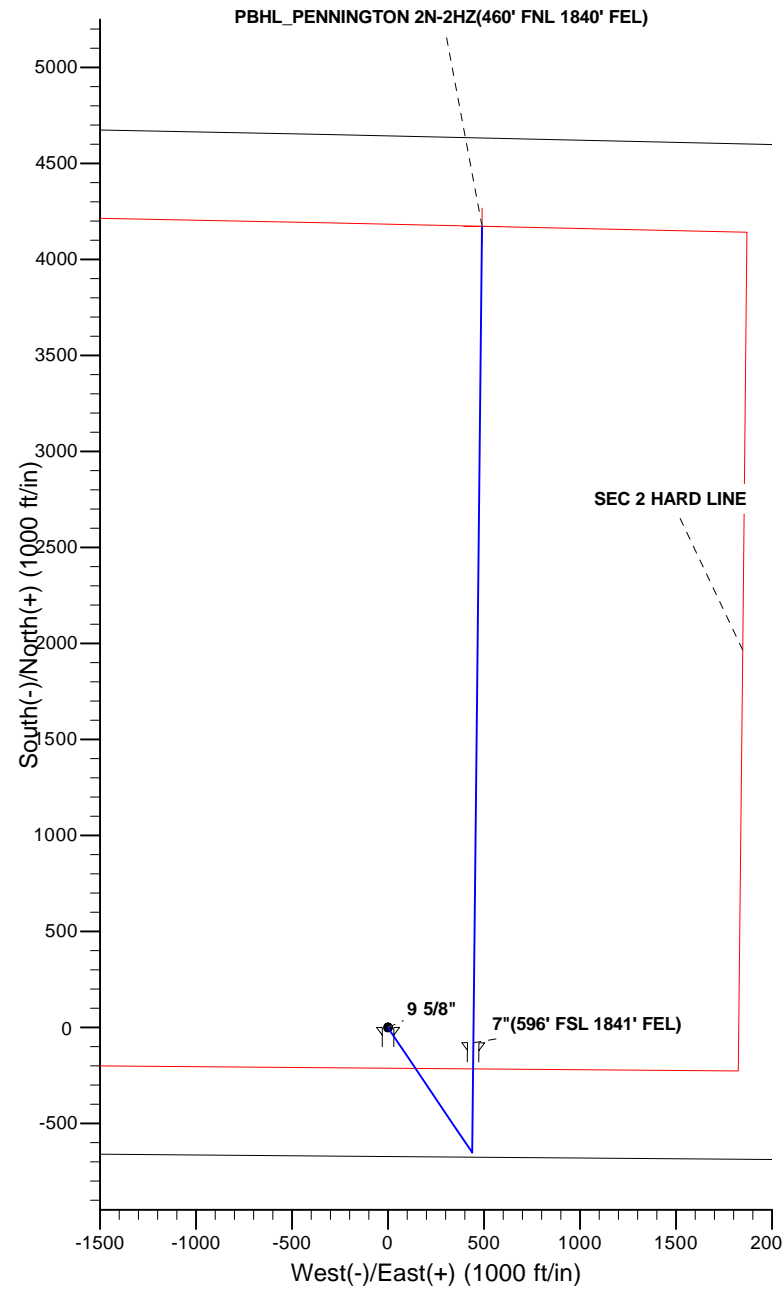
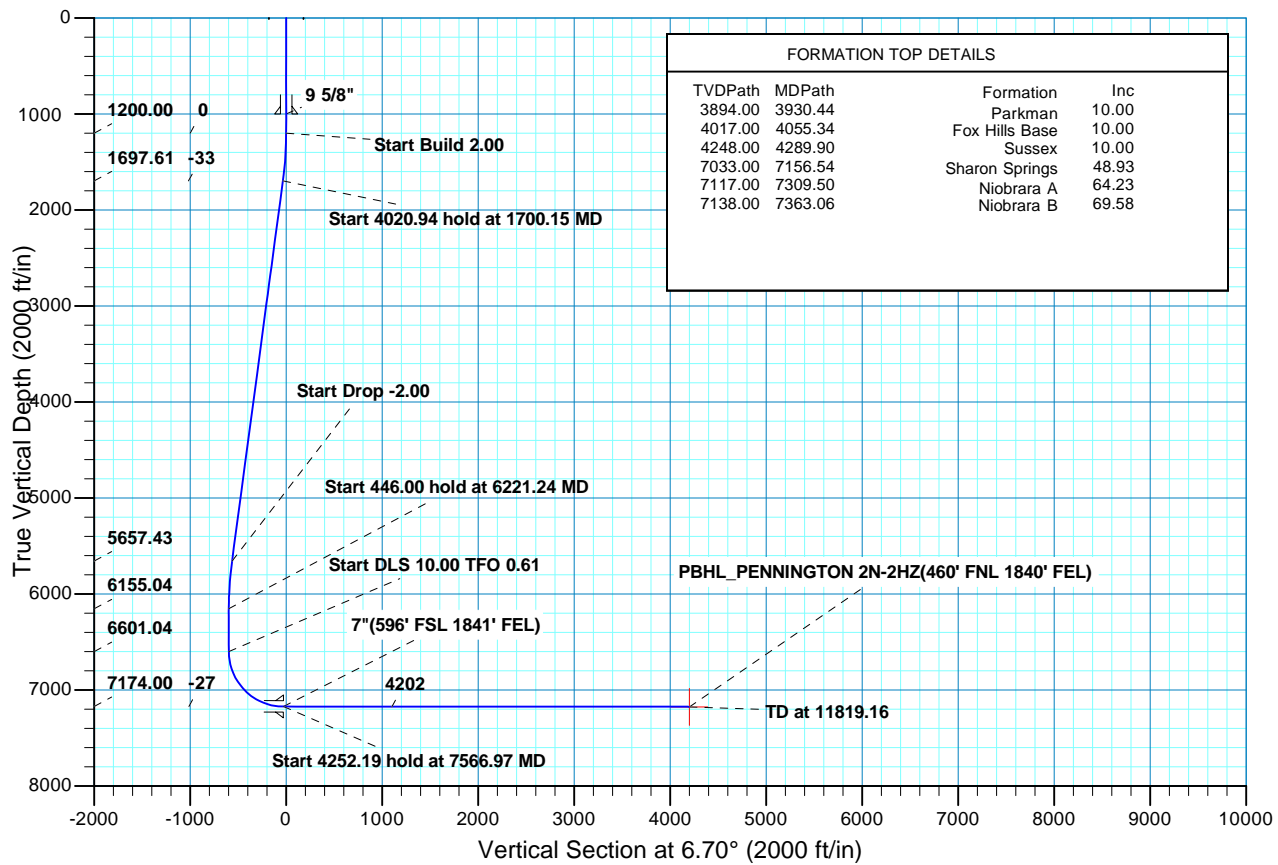


WELL DETAILS: PENNINGTON 2N-2HZ									
GL 4860' & KB 17' @ 4877.00ft (ASSUMED)									
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude				
0.00	0.00	1302373.31	3179819.83	40.1616190	-104.8566080				
SECTION DETAILS									
MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSEct	Target
0.00	0.00	0.00	0.00	0.00	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	
1700.15	10.00	146.07	1697.61	-36.13	24.31	2.00	146.07	-33.05	
5721.09	10.00	146.07	5657.43	-615.62	414.19	0.00	0.00	-563.10	
6221.24	0.00	0.00	6155.04	-651.75	438.50	2.00	180.00	-596.15	
6667.24	0.00	0.00	6601.04	-651.75	438.50	0.00	0.00	-596.15	
7566.97	89.97	0.61	7174.00	-79.09	444.63	10.00	0.61	-26.69	
11819.16	89.97	0.61	7176.00	4172.86	490.14	0.00	0.004201.54		PBHL_PENNINGTON 2N-2HZ(460' FNL 1840' FEL)

CASING DETAILS			
TVD	MD	Name	Size
1000.00	1000.00	9 5/8"	9.625
7174.00	7566.97	7"	7.000





Scientific Drilling

US ROCKIES REGION PLANNING

COLORADO NORTHERN ZONE - 83

PENNINGTON 15-2HZ

PENNINGTON 2N-2HZ

OH

Plan: PLAN #2 PRELIMINARY

Standard Planning Report

30 May, 2013

Database:	EDM5000-RobertS-Local	Local Co-ordinate Reference:	Well PENNINGTON 2N-2HZ
Company:	US ROCKIES REGION PLANNING	TVD Reference:	GL 4860' & KB 17' @ 4877.00ft (ASSUMED)
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	GL 4860' & KB 17' @ 4877.00ft (ASSUMED)
Site:	PENNINGTON 15-2HZ	North Reference:	True
Well:	PENNINGTON 2N-2HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	PLAN #2 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	PENNINGTON 15-2HZ, SECTION 2 T2N R67W				
Site Position:	Northing:	1,302,373.31 usft	Latitude:	40.1616190	
From:	Lat/Long	Easting:	3,179,819.83 usft	Longitude:	-104.8566080
Position Uncertainty:	0.00 ft	Slot Radius:	13.200 in	Grid Convergence:	0.42 °

Well	PENNINGTON 2N-2HZ, 672' FSL 2287' FEL					
Well Position	+N/-S	0.00 ft	Northing:	1,302,373.31 usft	Latitude:	40.1616190
	+E/-W	0.00 ft	Easting:	3,179,819.83 usft	Longitude:	-104.8566080
Position Uncertainty		0.00 ft	Wellhead Elevation:		Ground Level:	0.00 ft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	BGGM2012	2013/05/24	8.68	66.75	52,692

Design	PLAN #2 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	6.70

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	
1,700.15	10.00	146.07	1,697.61	-36.13	24.31	2.00	2.00	0.00	146.07	
5,721.09	10.00	146.07	5,657.43	-615.62	414.19	0.00	0.00	0.00	0.00	
6,221.24	0.00	0.00	6,155.04	-651.75	438.50	2.00	-2.00	0.00	180.00	
6,667.24	0.00	0.00	6,601.04	-651.75	438.50	0.00	0.00	0.00	0.00	
7,566.97	89.97	0.61	7,174.00	-79.09	444.63	10.00	10.00	0.07	0.61	
11,819.16	89.97	0.61	7,176.00	4,172.86	490.14	0.00	0.00	0.00	0.00	PBHL_PENNINGTON

Database:	EDM5000-RobertS-Local	Local Co-ordinate Reference:	Well PENNINGTON 2N-2HZ
Company:	US ROCKIES REGION PLANNING	TVD Reference:	GL 4860' & KB 17' @ 4877.00ft (ASSUMED)
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	GL 4860' & KB 17' @ 4877.00ft (ASSUMED)
Site:	PENNINGTON 15-2HZ	North Reference:	True
Well:	PENNINGTON 2N-2HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	PLAN #2 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
500.00	0.00	0.00	500.00	0.00	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	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
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	0.00
1,200.00	0.00	0.00	1,200.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Start Build 2.00										
1,300.00	2.00	146.07	1,299.98	-1.45	0.97	-1.32	2.00	2.00	0.00	0.00
1,400.00	4.00	146.07	1,399.84	-5.79	3.90	-5.30	2.00	2.00	0.00	0.00
1,500.00	6.00	146.07	1,499.45	-13.02	8.76	-11.91	2.00	2.00	0.00	0.00
1,600.00	8.00	146.07	1,598.70	-23.13	15.56	-21.16	2.00	2.00	0.00	0.00
1,700.00	10.00	146.07	1,697.47	-36.11	24.30	-33.03	2.00	2.00	0.00	0.00
1,700.15	10.00	146.07	1,697.61	-36.13	24.31	-33.05	2.00	2.00	0.00	0.00
Start 4020.94 hold at 1700.15 MD										
1,800.00	10.00	146.07	1,795.95	-50.52	33.99	-46.21	0.00	0.00	0.00	0.00
1,900.00	10.00	146.07	1,894.43	-64.93	43.69	-59.39	0.00	0.00	0.00	0.00
2,000.00	10.00	146.07	1,992.91	-79.35	53.38	-72.58	0.00	0.00	0.00	0.00
2,100.00	10.00	146.07	2,091.38	-93.76	63.08	-85.76	0.00	0.00	0.00	0.00
2,200.00	10.00	146.07	2,189.86	-108.17	72.78	-98.94	0.00	0.00	0.00	0.00
2,300.00	10.00	146.07	2,288.34	-122.58	82.47	-112.12	0.00	0.00	0.00	0.00
2,400.00	10.00	146.07	2,386.82	-136.99	92.17	-125.30	0.00	0.00	0.00	0.00
2,500.00	10.00	146.07	2,485.30	-151.40	101.87	-138.49	0.00	0.00	0.00	0.00
2,600.00	10.00	146.07	2,583.78	-165.82	111.56	-151.67	0.00	0.00	0.00	0.00
2,700.00	10.00	146.07	2,682.26	-180.23	121.26	-164.85	0.00	0.00	0.00	0.00
2,800.00	10.00	146.07	2,780.74	-194.64	130.95	-178.03	0.00	0.00	0.00	0.00
2,900.00	10.00	146.07	2,879.22	-209.05	140.65	-191.22	0.00	0.00	0.00	0.00
3,000.00	10.00	146.07	2,977.70	-223.46	150.35	-204.40	0.00	0.00	0.00	0.00
3,100.00	10.00	146.07	3,076.18	-237.87	160.04	-217.58	0.00	0.00	0.00	0.00
3,200.00	10.00	146.07	3,174.66	-252.29	169.74	-230.76	0.00	0.00	0.00	0.00
3,300.00	10.00	146.07	3,273.14	-266.70	179.44	-243.94	0.00	0.00	0.00	0.00
3,400.00	10.00	146.07	3,371.62	-281.11	189.13	-257.13	0.00	0.00	0.00	0.00
3,500.00	10.00	146.07	3,470.10	-295.52	198.83	-270.31	0.00	0.00	0.00	0.00
3,600.00	10.00	146.07	3,568.58	-309.93	208.52	-283.49	0.00	0.00	0.00	0.00
3,700.00	10.00	146.07	3,667.06	-324.34	218.22	-296.67	0.00	0.00	0.00	0.00
3,800.00	10.00	146.07	3,765.54	-338.76	227.92	-309.86	0.00	0.00	0.00	0.00
3,900.00	10.00	146.07	3,864.02	-353.17	237.61	-323.04	0.00	0.00	0.00	0.00
3,930.44	10.00	146.07	3,894.00	-357.56	240.56	-327.05	0.00	0.00	0.00	0.00
Parkman										
4,000.00	10.00	146.07	3,962.50	-367.58	247.31	-336.22	0.00	0.00	0.00	0.00
4,055.34	10.00	146.07	4,017.00	-375.56	252.67	-343.51	0.00	0.00	0.00	0.00
Fox Hills Base										
4,100.00	10.00	146.07	4,060.98	-381.99	257.01	-349.40	0.00	0.00	0.00	0.00
4,200.00	10.00	146.07	4,159.46	-396.40	266.70	-362.58	0.00	0.00	0.00	0.00
4,289.90	10.00	146.07	4,248.00	-409.36	275.42	-374.44	0.00	0.00	0.00	0.00
Sussex										

Database:	EDM5000-RobertS-Local	Local Co-ordinate Reference:	Well PENNINGTON 2N-2HZ
Company:	US ROCKIES REGION PLANNING	TVD Reference:	GL 4860' & KB 17' @ 4877.00ft (ASSUMED)
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	GL 4860' & KB 17' @ 4877.00ft (ASSUMED)
Site:	PENNINGTON 15-2HZ	North Reference:	True
Well:	PENNINGTON 2N-2HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	PLAN #2 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)
4,300.00	10.00	146.07	4,257.94	-410.81	276.40	-375.77	0.00	0.00	0.00
4,400.00	10.00	146.07	4,356.42	-425.23	286.09	-388.95	0.00	0.00	0.00
4,500.00	10.00	146.07	4,454.90	-439.64	295.79	-402.13	0.00	0.00	0.00
4,600.00	10.00	146.07	4,553.38	-454.05	305.49	-415.31	0.00	0.00	0.00
4,700.00	10.00	146.07	4,651.86	-468.46	315.18	-428.49	0.00	0.00	0.00
4,800.00	10.00	146.07	4,750.34	-482.87	324.88	-441.68	0.00	0.00	0.00
4,900.00	10.00	146.07	4,848.82	-497.29	334.58	-454.86	0.00	0.00	0.00
5,000.00	10.00	146.07	4,947.30	-511.70	344.27	-468.04	0.00	0.00	0.00
5,100.00	10.00	146.07	5,045.78	-526.11	353.97	-481.22	0.00	0.00	0.00
5,200.00	10.00	146.07	5,144.26	-540.52	363.66	-494.41	0.00	0.00	0.00
5,300.00	10.00	146.07	5,242.74	-554.93	373.36	-507.59	0.00	0.00	0.00
5,400.00	10.00	146.07	5,341.22	-569.34	383.06	-520.77	0.00	0.00	0.00
5,500.00	10.00	146.07	5,439.70	-583.76	392.75	-533.95	0.00	0.00	0.00
5,600.00	10.00	146.07	5,538.18	-598.17	402.45	-547.13	0.00	0.00	0.00
5,700.00	10.00	146.07	5,636.66	-612.58	412.15	-560.32	0.00	0.00	0.00
5,721.09	10.00	146.07	5,657.43	-615.62	414.19	-563.10	0.00	0.00	0.00
Start Drop -2.00									
5,800.00	8.42	146.07	5,735.32	-626.10	421.24	-572.68	2.00	-2.00	0.00
5,900.00	6.42	146.07	5,834.48	-636.82	428.46	-582.49	2.00	-2.00	0.00
6,000.00	4.42	146.07	5,934.02	-644.67	433.73	-589.67	2.00	-2.00	0.00
6,100.00	2.42	146.07	6,033.84	-649.62	437.07	-594.20	2.00	-2.00	0.00
6,200.00	0.42	146.07	6,133.80	-651.68	438.46	-596.09	2.00	-2.00	0.00
6,221.24	0.00	0.00	6,155.04	-651.75	438.50	-596.15	2.00	-2.00	0.00
Start 446.00 hold at 6221.24 MD									
6,300.00	0.00	0.00	6,233.80	-651.75	438.50	-596.15	0.00	0.00	0.00
6,400.00	0.00	0.00	6,333.80	-651.75	438.50	-596.15	0.00	0.00	0.00
6,500.00	0.00	0.00	6,433.80	-651.75	438.50	-596.15	0.00	0.00	0.00
6,600.00	0.00	0.00	6,533.80	-651.75	438.50	-596.15	0.00	0.00	0.00
6,667.24	0.00	0.00	6,601.04	-651.75	438.50	-596.15	0.00	0.00	0.00
Start DLS 10.00 TFO 0.61									
6,700.00	3.28	0.61	6,633.78	-650.81	438.51	-595.21	10.00	10.00	0.00
6,800.00	13.28	0.61	6,732.62	-636.44	438.66	-580.92	10.00	10.00	0.00
6,900.00	23.28	0.61	6,827.45	-605.12	439.00	-549.78	10.00	10.00	0.00
7,000.00	33.28	0.61	6,915.41	-557.81	439.51	-502.73	10.00	10.00	0.00
7,100.00	43.28	0.61	6,993.81	-495.95	440.17	-441.21	10.00	10.00	0.00
7,156.54	48.93	0.61	7,033.00	-455.22	440.60	-400.71	10.00	10.00	0.00
Sharon Springs									
7,200.00	53.28	0.61	7,060.28	-421.41	440.97	-367.09	10.00	10.00	0.00
7,300.00	63.28	0.61	7,112.80	-336.46	441.87	-282.62	10.00	10.00	0.00
7,309.50	64.23	0.61	7,117.00	-327.94	441.97	-274.14	10.00	10.00	0.00
Niobrara A									
7,363.06	69.58	0.61	7,138.00	-278.70	442.49	-225.18	10.00	10.00	0.00
Niobrara B									
7,400.00	73.28	0.61	7,149.76	-243.69	442.87	-190.36	10.00	10.00	0.00
7,500.00	83.28	0.61	7,170.06	-145.90	443.91	-93.12	10.00	10.00	0.00
7,566.97	89.97	0.61	7,174.00	-79.09	444.63	-26.68	10.00	10.00	0.00
Start 4252.19 hold at 7566.97 MD - 7"(596' FSL 1841' FEL)									
7,600.00	89.97	0.61	7,174.01	-46.06	444.98	6.16	0.00	0.00	0.00
7,700.00	89.97	0.61	7,174.06	53.93	446.05	105.60	0.00	0.00	0.00
7,800.00	89.97	0.61	7,174.11	153.92	447.12	205.03	0.00	0.00	0.00
7,900.00	89.97	0.61	7,174.15	253.92	448.19	304.47	0.00	0.00	0.00
8,000.00	89.97	0.61	7,174.20	353.91	449.26	403.91	0.00	0.00	0.00
8,100.00	89.97	0.61	7,174.25	453.91	450.34	503.34	0.00	0.00	0.00

Database:	EDM5000-RobertS-Local	Local Co-ordinate Reference:	Well PENNINGTON 2N-2HZ
Company:	US ROCKIES REGION PLANNING	TVD Reference:	GL 4860' & KB 17' @ 4877.00ft (ASSUMED)
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	GL 4860' & KB 17' @ 4877.00ft (ASSUMED)
Site:	PENNINGTON 15-2HZ	North Reference:	True
Well:	PENNINGTON 2N-2HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	PLAN #2 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)
8,200.00	89.97	0.61	7,174.30	553.90	451.41	602.78	0.00	0.00	0.00
8,300.00	89.97	0.61	7,174.34	653.90	452.48	702.22	0.00	0.00	0.00
8,400.00	89.97	0.61	7,174.39	753.89	453.55	801.65	0.00	0.00	0.00
8,500.00	89.97	0.61	7,174.44	853.88	454.62	901.09	0.00	0.00	0.00
8,600.00	89.97	0.61	7,174.48	953.88	455.69	1,000.52	0.00	0.00	0.00
8,700.00	89.97	0.61	7,174.53	1,053.87	456.76	1,099.96	0.00	0.00	0.00
8,800.00	89.97	0.61	7,174.58	1,153.87	457.83	1,199.40	0.00	0.00	0.00
8,900.00	89.97	0.61	7,174.63	1,253.86	458.90	1,298.83	0.00	0.00	0.00
9,000.00	89.97	0.61	7,174.67	1,353.86	459.97	1,398.27	0.00	0.00	0.00
9,100.00	89.97	0.61	7,174.72	1,453.85	461.04	1,497.71	0.00	0.00	0.00
9,200.00	89.97	0.61	7,174.77	1,553.84	462.11	1,597.14	0.00	0.00	0.00
9,300.00	89.97	0.61	7,174.81	1,653.84	463.18	1,696.58	0.00	0.00	0.00
9,400.00	89.97	0.61	7,174.86	1,753.83	464.25	1,796.02	0.00	0.00	0.00
9,500.00	89.97	0.61	7,174.91	1,853.83	465.32	1,895.45	0.00	0.00	0.00
9,600.00	89.97	0.61	7,174.96	1,953.82	466.39	1,994.89	0.00	0.00	0.00
9,700.00	89.97	0.61	7,175.00	2,053.82	467.46	2,094.33	0.00	0.00	0.00
9,800.00	89.97	0.61	7,175.05	2,153.81	468.53	2,193.76	0.00	0.00	0.00
9,900.00	89.97	0.61	7,175.10	2,253.80	469.60	2,293.20	0.00	0.00	0.00
10,000.00	89.97	0.61	7,175.14	2,353.80	470.67	2,392.63	0.00	0.00	0.00
10,100.00	89.97	0.61	7,175.19	2,453.79	471.74	2,492.07	0.00	0.00	0.00
10,200.00	89.97	0.61	7,175.24	2,553.79	472.81	2,591.51	0.00	0.00	0.00
10,300.00	89.97	0.61	7,175.28	2,653.78	473.88	2,690.94	0.00	0.00	0.00
10,400.00	89.97	0.61	7,175.33	2,753.78	474.95	2,790.38	0.00	0.00	0.00
10,500.00	89.97	0.61	7,175.38	2,853.77	476.02	2,889.82	0.00	0.00	0.00
10,600.00	89.97	0.61	7,175.43	2,953.76	477.09	2,989.25	0.00	0.00	0.00
10,700.00	89.97	0.61	7,175.47	3,053.76	478.16	3,088.69	0.00	0.00	0.00
10,800.00	89.97	0.61	7,175.52	3,153.75	479.23	3,188.13	0.00	0.00	0.00
10,900.00	89.97	0.61	7,175.57	3,253.75	480.31	3,287.56	0.00	0.00	0.00
11,000.00	89.97	0.61	7,175.61	3,353.74	481.38	3,387.00	0.00	0.00	0.00
11,100.00	89.97	0.61	7,175.66	3,453.73	482.45	3,486.43	0.00	0.00	0.00
11,200.00	89.97	0.61	7,175.71	3,553.73	483.52	3,585.87	0.00	0.00	0.00
11,300.00	89.97	0.61	7,175.76	3,653.72	484.59	3,685.31	0.00	0.00	0.00
11,400.00	89.97	0.61	7,175.80	3,753.72	485.66	3,784.74	0.00	0.00	0.00
11,500.00	89.97	0.61	7,175.85	3,853.71	486.73	3,884.18	0.00	0.00	0.00
11,600.00	89.97	0.61	7,175.90	3,953.71	487.80	3,983.62	0.00	0.00	0.00
11,700.00	89.97	0.61	7,175.94	4,053.70	488.87	4,083.05	0.00	0.00	0.00
11,800.00	89.97	0.61	7,175.99	4,153.69	489.94	4,182.49	0.00	0.00	0.00
11,819.16	89.97	0.61	7,176.00	4,172.86	490.14	4,201.54	0.00	0.00	0.00
TD at 11819.16 - PBHL_PENNINGTON 2N-2HZ(460' FNL 1840' FEL)									

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
PBHL_PENNINGTON 2 - hit/miss target - Shape - Point	0.00	0.00	7,176.00	4,172.86	490.14	1,306,549.60	3,180,279.69	40.1730740	-104.8548540

Database:	EDM5000-RobertS-Local	Local Co-ordinate Reference:	Well PENNINGTON 2N-2HZ
Company:	US ROCKIES REGION PLANNING	TVD Reference:	GL 4860' & KB 17' @ 4877.00ft (ASSUMED)
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	GL 4860' & KB 17' @ 4877.00ft (ASSUMED)
Site:	PENNINGTON 15-2HZ	North Reference:	True
Well:	PENNINGTON 2N-2HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	PLAN #2 PRELIMINARY		

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)	
1,000.00	1,000.00	9 5/8"	9.625	12.250	
7,566.97	7,174.00	7"(596' FSL 1841' FEL)	7.000	7.500	

Formations					
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
3,930.44	3,894.00	Parkman			
4,055.34	4,017.00	Fox Hills Base			
4,289.90	4,248.00	Sussex			
7,156.54	7,033.00	Sharon Springs			
7,309.50	7,117.00	Niobrara A			
7,363.06	7,138.00	Niobrara B			

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	
1,700.15	1,697.61	-36.13	24.31	Start 4020.94 hold at 1700.15 MD	
5,721.09	5,657.43	-615.62	414.19	Start Drop -2.00	
6,221.24	6,155.04	-651.75	438.50	Start 446.00 hold at 6221.24 MD	
6,667.24	6,601.04	-651.75	438.50	Start DLS 10.00 TFO 0.61	
7,566.97	7,174.00	-79.09	444.63	Start 4252.19 hold at 7566.97 MD	
11,819.16	7,176.00	4,172.86	490.14	TD at 11819.16	