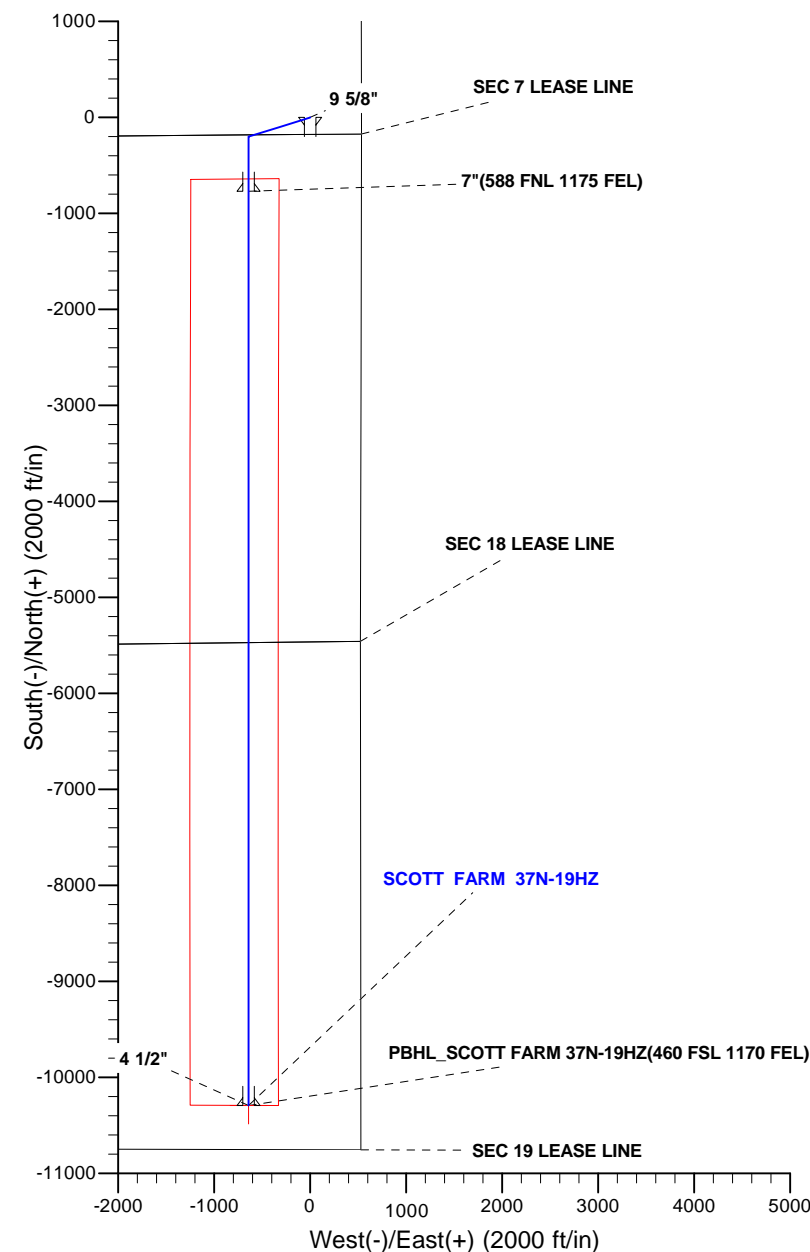


WELL DETAILS: SCOTT FARM 37N-19HZ											
GL 4926 & KB 17 @ 4943.00ft (ASSUMED)											
+N/-S		+E/-W		Northing		Easting		Latitude		Longitude	
0.00		0.00		1265066.02		3192473.29		40.0589470		-104.8123710	
SECTION DETAILS											
MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target		
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
1143.00	0.00	0.00	1143.00	0.00	0.00	0.00	0.00	0.00	0.00		
1643.12	10.00	252.66	1640.58	-12.97	-41.57	2.00	252.66	12.97			
5006.07	10.00	252.66	4952.42	-187.03	-599.14	0.00	0.00	187.03			
5506.19	0.00	0.00	5450.00	-200.00	-640.70	2.00	180.00	200.00			
6726.25	0.00	0.00	6670.06	-200.00	-640.70	0.00	0.00	200.00			
7621.43	89.52	180.00	7243.00	-768.14	-640.70	10.00	180.00	768.14			
17143.69	89.52	180.00	7323.00	10290.07	-640.70	0.00	0.00	10290.07	PBHL_SCOTT FARM 37N-19HZ(460 FSL 1170 FEL)		
CASING DETAILS							FORMATION TOP DETAILS				
TVD	MD	Name	Size				TVDPPath	MDPath	Formation	Inc	
943.00	943.00	9 5/8"	9.625				893.00	893.00	Fox Hills Base	0.00	
7243.00	7621.43	7"	7.000				4136.00	4177.05	Parkman	10.00	
7323.00	17143.69	4 1/2"	4.500				4531.00	4578.15	Sussex	10.00	
							7063.00	7159.24	Sharon Springs	43.30	
							7101.00	7214.00	Niobrara A	48.78	
							7214.00	7443.12	Niobrara B	71.69	
							7292.00	13453.93	Niobrara C	89.52	





# Scientific Drilling

## **US ROCKIES REGION PLANNING**

**COLORADO NORTHERN ZONE - 83**

**SCOTT FARM PAD 16C-19HZ**

**SCOTT FARM 37N-19HZ**

**OH**

**Plan: PLAN #1 PRELIMINARY**

## **Standard Planning Report**

**10 July, 2013**

<b>Database:</b>	EDM5000-RobertS-Local	<b>Local Co-ordinate Reference:</b>	Well SCOTT FARM 37N-19HZ
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	GL 4926 & KB 17 @ 4943.00ft (ASSUMED)
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>MD Reference:</b>	GL 4926 & KB 17 @ 4943.00ft (ASSUMED)
<b>Site:</b>	SCOTT FARM PAD 16C-19HZ	<b>North Reference:</b>	True
<b>Well:</b>	SCOTT FARM 37N-19HZ	<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>	SCOTT FARM PAD 16C-19HZ, SESE SECTION 7 T1N R66W			
<b>Site Position:</b>		<b>Northing:</b>	1,265,066.02 usft	<b>Latitude:</b> 40.0589470
<b>From:</b>	Lat/Long	<b>Easting:</b>	3,192,473.29 usft	<b>Longitude:</b> -104.8123710
<b>Position Uncertainty:</b>	0.00 ft	<b>Slot Radius:</b>	13.200 in	<b>Grid Convergence:</b> 0.44 °

<b>Well</b>	SCOTT FARM 37N-19HZ, 175' FSL 535' FEL			
<b>Well Position</b>	<b>+N/-S</b>	0.00 ft	<b>Northing:</b>	1,265,066.02 usft
	<b>+E/-W</b>	0.00 ft	<b>Easting:</b>	3,192,473.29 usft
<b>Position Uncertainty</b>		0.00 ft	<b>Wellhead Elevation:</b>	<b>Ground Level:</b> 4,926.00 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	2013/07/10	8.61	66.69	52,659

<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	180.00

<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	
1,143.00	0.00	0.00	1,143.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,643.12	10.00	252.66	1,640.58	-12.97	-41.57	2.00	2.00	0.00	252.66	
5,006.07	10.00	252.66	4,952.42	-187.03	-599.14	0.00	0.00	0.00	0.00	
5,506.19	0.00	0.00	5,450.00	-200.00	-640.70	2.00	-2.00	0.00	180.00	
6,726.25	0.00	0.00	6,670.06	-200.00	-640.70	0.00	0.00	0.00	0.00	
7,621.43	89.52	180.00	7,243.00	-768.14	-640.70	10.00	10.00	20.11	180.00	
17,143.70	89.52	180.00	7,323.00	-10,290.07	-640.70	0.00	0.00	0.00	0.00	PBHL_SCOTT FARM

<b>Database:</b>	EDM5000-RobertS-Local	<b>Local Co-ordinate Reference:</b>	Well SCOTT FARM 37N-19HZ
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	GL 4926 & KB 17 @ 4943.00ft (ASSUMED)
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>MD Reference:</b>	GL 4926 & KB 17 @ 4943.00ft (ASSUMED)
<b>Site:</b>	SCOTT FARM PAD 16C-19HZ	<b>North Reference:</b>	True
<b>Well:</b>	SCOTT FARM 37N-19HZ	<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 (°/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
893.00	0.00	0.00	893.00	0.00	0.00	0.00	0.00	0.00	0.00
Fox Hills Base									
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	0.00
943.00	0.00	0.00	943.00	0.00	0.00	0.00	0.00	0.00	0.00
9 5/8"									
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
1,143.00	0.00	0.00	1,143.00	0.00	0.00	0.00	0.00	0.00	0.00
Start Build 2.00									
1,200.00	1.14	252.66	1,200.00	-0.17	-0.54	0.17	2.00	2.00	0.00
1,300.00	3.14	252.66	1,299.92	-1.28	-4.11	1.28	2.00	2.00	0.00
1,400.00	5.14	252.66	1,399.66	-3.43	-11.00	3.43	2.00	2.00	0.00
1,500.00	7.14	252.66	1,499.08	-6.62	-21.21	6.62	2.00	2.00	0.00
1,600.00	9.14	252.66	1,598.06	-10.84	-34.72	10.84	2.00	2.00	0.00
1,642.83	10.00	252.66	1,640.29	-12.96	-41.52	12.96	2.00	2.00	0.00
Start 3189.84 hold at 1642.83 MD									
1,643.12	10.00	252.66	1,640.58	-12.97	-41.57	12.97	2.00	2.00	0.00
1,700.00	10.00	252.66	1,696.60	-15.92	-51.00	15.92	0.00	0.00	0.00
1,800.00	10.00	252.66	1,795.08	-21.09	-67.58	21.09	0.00	0.00	0.00
1,900.00	10.00	252.66	1,893.56	-26.27	-84.16	26.27	0.00	0.00	0.00
2,000.00	10.00	252.66	1,992.04	-31.45	-100.74	31.45	0.00	0.00	0.00
2,100.00	10.00	252.66	2,090.52	-36.62	-117.32	36.62	0.00	0.00	0.00
2,200.00	10.00	252.66	2,189.00	-41.80	-133.90	41.80	0.00	0.00	0.00
2,300.00	10.00	252.66	2,287.48	-46.97	-150.48	46.97	0.00	0.00	0.00
2,400.00	10.00	252.66	2,385.96	-52.15	-167.06	52.15	0.00	0.00	0.00
2,500.00	10.00	252.66	2,484.44	-57.32	-183.64	57.32	0.00	0.00	0.00
2,600.00	10.00	252.66	2,582.92	-62.50	-200.22	62.50	0.00	0.00	0.00
2,700.00	10.00	252.66	2,681.40	-67.67	-216.80	67.67	0.00	0.00	0.00
2,800.00	10.00	252.66	2,779.88	-72.85	-233.37	72.85	0.00	0.00	0.00
2,900.00	10.00	252.66	2,878.36	-78.03	-249.95	78.03	0.00	0.00	0.00
3,000.00	10.00	252.66	2,976.84	-83.20	-266.53	83.20	0.00	0.00	0.00
3,100.00	10.00	252.66	3,075.32	-88.38	-283.11	88.38	0.00	0.00	0.00
3,200.00	10.00	252.66	3,173.80	-93.55	-299.69	93.55	0.00	0.00	0.00
3,300.00	10.00	252.66	3,272.28	-98.73	-316.27	98.73	0.00	0.00	0.00
3,400.00	10.00	252.66	3,370.76	-103.90	-332.85	103.90	0.00	0.00	0.00
3,500.00	10.00	252.66	3,469.24	-109.08	-349.43	109.08	0.00	0.00	0.00
3,600.00	10.00	252.66	3,567.72	-114.25	-366.01	114.25	0.00	0.00	0.00
3,700.00	10.00	252.66	3,666.20	-119.43	-382.59	119.43	0.00	0.00	0.00
3,800.00	10.00	252.66	3,764.68	-124.60	-399.17	124.60	0.00	0.00	0.00
3,900.00	10.00	252.66	3,863.16	-129.78	-415.75	129.78	0.00	0.00	0.00
4,000.00	10.00	252.66	3,961.64	-134.96	-432.33	134.96	0.00	0.00	0.00
4,100.00	10.00	252.66	4,060.12	-140.13	-448.91	140.13	0.00	0.00	0.00
4,177.05	10.00	252.66	4,136.00	-144.12	-461.69	144.12	0.00	0.00	0.00
Parkman									
4,200.00	10.00	252.66	4,158.60	-145.31	-465.49	145.31	0.00	0.00	0.00

<b>Database:</b>	EDM5000-RobertS-Local	<b>Local Co-ordinate Reference:</b>	Well SCOTT FARM 37N-19HZ
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	GL 4926 & KB 17 @ 4943.00ft (ASSUMED)
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>MD Reference:</b>	GL 4926 & KB 17 @ 4943.00ft (ASSUMED)
<b>Site:</b>	SCOTT FARM PAD 16C-19HZ	<b>North Reference:</b>	True
<b>Well:</b>	SCOTT FARM 37N-19HZ	<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 (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
4,300.00	10.00	252.66	4,257.08	-150.48	-482.07	150.48	0.00	0.00	0.00
4,400.00	10.00	252.66	4,355.56	-155.66	-498.65	155.66	0.00	0.00	0.00
4,500.00	10.00	252.66	4,454.04	-160.83	-515.23	160.83	0.00	0.00	0.00
4,578.15	10.00	252.66	4,531.00	-164.88	-528.19	164.88	0.00	0.00	0.00
<b>Sussex</b>									
4,600.00	10.00	252.66	4,552.52	-166.01	-531.81	166.01	0.00	0.00	0.00
4,700.00	10.00	252.66	4,651.00	-171.18	-548.39	171.18	0.00	0.00	0.00
4,800.00	10.00	252.66	4,749.48	-176.36	-564.97	176.36	0.00	0.00	0.00
4,832.66	10.00	252.66	4,781.65	-178.05	-570.39	178.05	0.00	0.00	0.00
<b>Start Drop -2.00</b>									
4,900.00	10.00	252.66	4,847.96	-181.54	-581.55	181.54	0.00	0.00	0.00
5,000.00	10.00	252.66	4,946.44	-186.71	-598.13	186.71	0.00	0.00	0.00
5,006.07	10.00	252.66	4,952.42	-187.03	-599.14	187.03	0.00	0.00	0.00
5,100.00	8.12	252.66	5,045.17	-191.43	-613.26	191.43	2.00	-2.00	0.00
5,200.00	6.12	252.66	5,144.39	-195.13	-625.10	195.13	2.00	-2.00	0.00
5,300.00	4.12	252.66	5,243.99	-197.79	-633.62	197.79	2.00	-2.00	0.00
5,332.49	3.47	252.66	5,276.41	-198.43	-635.68	198.43	2.00	-2.00	0.00
<b>Start 1391.06 hold at 5332.49 MD</b>									
5,400.00	2.12	252.66	5,343.84	-199.41	-638.83	199.41	2.00	-2.00	0.00
5,500.00	0.12	252.66	5,443.81	-200.00	-640.70	200.00	2.00	-2.00	0.00
5,506.19	0.00	0.00	5,450.00	-200.00	-640.70	200.00	2.00	-2.00	0.00
5,600.00	0.00	0.00	5,543.81	-200.00	-640.70	200.00	0.00	0.00	0.00
5,700.00	0.00	0.00	5,643.81	-200.00	-640.70	200.00	0.00	0.00	0.00
5,800.00	0.00	0.00	5,743.81	-200.00	-640.70	200.00	0.00	0.00	0.00
5,900.00	0.00	0.00	5,843.81	-200.00	-640.70	200.00	0.00	0.00	0.00
6,000.00	0.00	0.00	5,943.81	-200.00	-640.70	200.00	0.00	0.00	0.00
6,100.00	0.00	0.00	6,043.81	-200.00	-640.70	200.00	0.00	0.00	0.00
6,200.00	0.00	0.00	6,143.81	-200.00	-640.70	200.00	0.00	0.00	0.00
6,300.00	0.00	0.00	6,243.81	-200.00	-640.70	200.00	0.00	0.00	0.00
6,400.00	0.00	0.00	6,343.81	-200.00	-640.70	200.00	0.00	0.00	0.00
6,500.00	0.00	0.00	6,443.81	-200.00	-640.70	200.00	0.00	0.00	0.00
6,600.00	0.00	0.00	6,543.81	-200.00	-640.70	200.00	0.00	0.00	0.00
6,700.00	0.00	0.00	6,643.81	-200.00	-640.70	200.00	0.00	0.00	0.00
6,723.55	0.00	0.00	6,667.36	-200.00	-640.70	200.00	0.00	0.00	0.00
<b>Start DLS 10.00 TFO 180.00</b>									
6,726.25	0.00	0.00	6,670.06	-200.00	-640.70	200.00	0.00	0.00	0.00
6,800.00	7.38	180.00	6,743.61	-204.74	-640.70	204.74	10.00	10.00	0.00
6,900.00	17.38	180.00	6,841.16	-226.14	-640.70	226.14	10.00	10.00	0.00
7,000.00	27.38	180.00	6,933.52	-264.16	-640.70	264.16	10.00	10.00	0.00
7,100.00	37.38	180.00	7,017.86	-317.64	-640.70	317.64	10.00	10.00	0.00
7,159.24	43.30	180.00	7,063.00	-355.97	-640.70	355.97	10.00	10.00	0.00
<b>Sharon Springs</b>									
7,200.00	47.38	180.00	7,091.64	-384.95	-640.70	384.95	10.00	10.00	0.00
7,214.00	48.78	180.00	7,101.00	-395.37	-640.70	395.37	10.00	10.00	0.00
<b>Niobrara A</b>									
7,300.00	57.38	180.00	7,152.62	-464.06	-640.70	464.06	10.00	10.00	0.00
7,400.00	67.38	180.00	7,198.93	-552.54	-640.70	552.54	10.00	10.00	0.00
7,443.12	71.69	180.00	7,214.00	-592.93	-640.70	592.93	10.00	10.00	0.00
<b>Niobrara B</b>									
7,500.00	77.38	180.00	7,229.17	-647.73	-640.70	647.73	10.00	10.00	0.00
7,600.00	87.38	180.00	7,242.42	-746.72	-640.70	746.72	10.00	10.00	0.00
7,618.84	89.26	180.00	7,242.97	-765.55	-640.70	765.55	10.00	10.00	0.00
<b>Start 9722.15 hold at 7618.84 MD</b>									

<b>Database:</b>	EDM5000-RobertS-Local	<b>Local Co-ordinate Reference:</b>	Well SCOTT FARM 37N-19HZ
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	GL 4926 & KB 17 @ 4943.00ft (ASSUMED)
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>MD Reference:</b>	GL 4926 & KB 17 @ 4943.00ft (ASSUMED)
<b>Site:</b>	SCOTT FARM PAD 16C-19HZ	<b>North Reference:</b>	True
<b>Well:</b>	SCOTT FARM 37N-19HZ	<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 (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
7,621.43	89.52	180.00	7,243.00	-768.14	-640.70	768.14	10.00	10.00	0.00
7"(588 FNL 1175 FEL)									
7,700.00	89.52	180.00	7,243.66	-846.71	-640.70	846.71	0.00	0.00	0.00
7,800.00	89.52	180.00	7,244.50	-946.70	-640.70	946.70	0.00	0.00	0.00
7,900.00	89.52	180.00	7,245.34	-1,046.70	-640.70	1,046.70	0.00	0.00	0.00
8,000.00	89.52	180.00	7,246.18	-1,146.70	-640.70	1,146.70	0.00	0.00	0.00
8,100.00	89.52	180.00	7,247.02	-1,246.69	-640.70	1,246.69	0.00	0.00	0.00
8,200.00	89.52	180.00	7,247.86	-1,346.69	-640.70	1,346.69	0.00	0.00	0.00
8,300.00	89.52	180.00	7,248.70	-1,446.69	-640.70	1,446.69	0.00	0.00	0.00
8,400.00	89.52	180.00	7,249.54	-1,546.68	-640.70	1,546.68	0.00	0.00	0.00
8,500.00	89.52	180.00	7,250.38	-1,646.68	-640.70	1,646.68	0.00	0.00	0.00
8,600.00	89.52	180.00	7,251.22	-1,746.68	-640.70	1,746.68	0.00	0.00	0.00
8,700.00	89.52	180.00	7,252.06	-1,846.67	-640.70	1,846.67	0.00	0.00	0.00
8,800.00	89.52	180.00	7,252.90	-1,946.67	-640.70	1,946.67	0.00	0.00	0.00
8,900.00	89.52	180.00	7,253.74	-2,046.66	-640.70	2,046.66	0.00	0.00	0.00
9,000.00	89.52	180.00	7,254.58	-2,146.66	-640.70	2,146.66	0.00	0.00	0.00
9,100.00	89.52	180.00	7,255.42	-2,246.66	-640.70	2,246.66	0.00	0.00	0.00
9,200.00	89.52	180.00	7,256.26	-2,346.65	-640.70	2,346.65	0.00	0.00	0.00
9,300.00	89.52	180.00	7,257.10	-2,446.65	-640.70	2,446.65	0.00	0.00	0.00
9,400.00	89.52	180.00	7,257.94	-2,546.65	-640.70	2,546.65	0.00	0.00	0.00
9,500.00	89.52	180.00	7,258.78	-2,646.64	-640.70	2,646.64	0.00	0.00	0.00
9,600.00	89.52	180.00	7,259.62	-2,746.64	-640.70	2,746.64	0.00	0.00	0.00
9,700.00	89.52	180.00	7,260.46	-2,846.64	-640.70	2,846.64	0.00	0.00	0.00
9,800.00	89.52	180.00	7,261.30	-2,946.63	-640.70	2,946.63	0.00	0.00	0.00
9,900.00	89.52	180.00	7,262.14	-3,046.63	-640.70	3,046.63	0.00	0.00	0.00
10,000.00	89.52	180.00	7,262.98	-3,146.63	-640.70	3,146.63	0.00	0.00	0.00
10,100.00	89.52	180.00	7,263.82	-3,246.62	-640.70	3,246.62	0.00	0.00	0.00
10,200.00	89.52	180.00	7,264.66	-3,346.62	-640.70	3,346.62	0.00	0.00	0.00
10,300.00	89.52	180.00	7,265.50	-3,446.62	-640.70	3,446.62	0.00	0.00	0.00
10,400.00	89.52	180.00	7,266.34	-3,546.61	-640.70	3,546.61	0.00	0.00	0.00
10,500.00	89.52	180.00	7,267.18	-3,646.61	-640.70	3,646.61	0.00	0.00	0.00
10,600.00	89.52	180.00	7,268.02	-3,746.60	-640.70	3,746.60	0.00	0.00	0.00
10,700.00	89.52	180.00	7,268.86	-3,846.60	-640.70	3,846.60	0.00	0.00	0.00
10,800.00	89.52	180.00	7,269.70	-3,946.60	-640.70	3,946.60	0.00	0.00	0.00
10,900.00	89.52	180.00	7,270.54	-4,046.59	-640.70	4,046.59	0.00	0.00	0.00
11,000.00	89.52	180.00	7,271.38	-4,146.59	-640.70	4,146.59	0.00	0.00	0.00
11,100.00	89.52	180.00	7,272.22	-4,246.59	-640.70	4,246.59	0.00	0.00	0.00
11,200.00	89.52	180.00	7,273.06	-4,346.58	-640.70	4,346.58	0.00	0.00	0.00
11,300.00	89.52	180.00	7,273.90	-4,446.58	-640.70	4,446.58	0.00	0.00	0.00
11,400.00	89.52	180.00	7,274.74	-4,546.58	-640.70	4,546.58	0.00	0.00	0.00
11,500.00	89.52	180.00	7,275.58	-4,646.57	-640.70	4,646.57	0.00	0.00	0.00
11,600.00	89.52	180.00	7,276.42	-4,746.57	-640.70	4,746.57	0.00	0.00	0.00
11,700.00	89.52	180.00	7,277.26	-4,846.57	-640.70	4,846.57	0.00	0.00	0.00
11,800.00	89.52	180.00	7,278.10	-4,946.56	-640.70	4,946.56	0.00	0.00	0.00
11,900.00	89.52	180.00	7,278.94	-5,046.56	-640.70	5,046.56	0.00	0.00	0.00
12,000.00	89.52	180.00	7,279.78	-5,146.56	-640.70	5,146.56	0.00	0.00	0.00
12,100.00	89.52	180.00	7,280.62	-5,246.55	-640.70	5,246.55	0.00	0.00	0.00
12,200.00	89.52	180.00	7,281.47	-5,346.55	-640.70	5,346.55	0.00	0.00	0.00
12,300.00	89.52	180.00	7,282.31	-5,446.54	-640.70	5,446.54	0.00	0.00	0.00
12,400.00	89.52	180.00	7,283.15	-5,546.54	-640.70	5,546.54	0.00	0.00	0.00
12,500.00	89.52	180.00	7,283.99	-5,646.54	-640.70	5,646.54	0.00	0.00	0.00
12,600.00	89.52	180.00	7,284.83	-5,746.53	-640.70	5,746.53	0.00	0.00	0.00
12,700.00	89.52	180.00	7,285.67	-5,846.53	-640.70	5,846.53	0.00	0.00	0.00

<b>Database:</b>	EDM5000-RobertS-Local	<b>Local Co-ordinate Reference:</b>	Well SCOTT FARM 37N-19HZ
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	GL 4926 & KB 17 @ 4943.00ft (ASSUMED)
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>MD Reference:</b>	GL 4926 & KB 17 @ 4943.00ft (ASSUMED)
<b>Site:</b>	SCOTT FARM PAD 16C-19HZ	<b>North Reference:</b>	True
<b>Well:</b>	SCOTT FARM 37N-19HZ	<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 (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
12,800.00	89.52	180.00	7,286.51	-5,946.53	-640.70	5,946.53	0.00	0.00	0.00
12,900.00	89.52	180.00	7,287.35	-6,046.52	-640.70	6,046.52	0.00	0.00	0.00
13,000.00	89.52	180.00	7,288.19	-6,146.52	-640.70	6,146.52	0.00	0.00	0.00
13,100.00	89.52	180.00	7,289.03	-6,246.52	-640.70	6,246.52	0.00	0.00	0.00
13,200.00	89.52	180.00	7,289.87	-6,346.51	-640.70	6,346.51	0.00	0.00	0.00
13,300.00	89.52	180.00	7,290.71	-6,446.51	-640.70	6,446.51	0.00	0.00	0.00
13,400.00	89.52	180.00	7,291.55	-6,546.51	-640.70	6,546.51	0.00	0.00	0.00
13,453.93	89.52	180.00	7,292.00	-6,600.43	-640.70	6,600.43	0.00	0.00	0.00
<b>Niobrara C</b>									
13,500.00	89.52	180.00	7,292.39	-6,646.50	-640.70	6,646.50	0.00	0.00	0.00
13,600.00	89.52	180.00	7,293.23	-6,746.50	-640.70	6,746.50	0.00	0.00	0.00
13,700.00	89.52	180.00	7,294.07	-6,846.50	-640.70	6,846.50	0.00	0.00	0.00
13,800.00	89.52	180.00	7,294.91	-6,946.49	-640.70	6,946.49	0.00	0.00	0.00
13,900.00	89.52	180.00	7,295.75	-7,046.49	-640.70	7,046.49	0.00	0.00	0.00
14,000.00	89.52	180.00	7,296.59	-7,146.48	-640.70	7,146.48	0.00	0.00	0.00
14,100.00	89.52	180.00	7,297.43	-7,246.48	-640.70	7,246.48	0.00	0.00	0.00
14,200.00	89.52	180.00	7,298.27	-7,346.48	-640.70	7,346.48	0.00	0.00	0.00
14,300.00	89.52	180.00	7,299.11	-7,446.47	-640.70	7,446.47	0.00	0.00	0.00
14,400.00	89.52	180.00	7,299.95	-7,546.47	-640.70	7,546.47	0.00	0.00	0.00
14,500.00	89.52	180.00	7,300.79	-7,646.47	-640.70	7,646.47	0.00	0.00	0.00
14,600.00	89.52	180.00	7,301.63	-7,746.46	-640.70	7,746.46	0.00	0.00	0.00
14,700.00	89.52	180.00	7,302.47	-7,846.46	-640.70	7,846.46	0.00	0.00	0.00
14,800.00	89.52	180.00	7,303.31	-7,946.46	-640.70	7,946.46	0.00	0.00	0.00
14,900.00	89.52	180.00	7,304.15	-8,046.45	-640.70	8,046.45	0.00	0.00	0.00
15,000.00	89.52	180.00	7,304.99	-8,146.45	-640.70	8,146.45	0.00	0.00	0.00
15,100.00	89.52	180.00	7,305.83	-8,246.45	-640.70	8,246.45	0.00	0.00	0.00
15,200.00	89.52	180.00	7,306.67	-8,346.44	-640.70	8,346.44	0.00	0.00	0.00
15,300.00	89.52	180.00	7,307.51	-8,446.44	-640.70	8,446.44	0.00	0.00	0.00
15,400.00	89.52	180.00	7,308.35	-8,546.44	-640.70	8,546.44	0.00	0.00	0.00
15,500.00	89.52	180.00	7,309.19	-8,646.43	-640.70	8,646.43	0.00	0.00	0.00
15,600.00	89.52	180.00	7,310.03	-8,746.43	-640.70	8,746.43	0.00	0.00	0.00
15,700.00	89.52	180.00	7,310.87	-8,846.42	-640.70	8,846.42	0.00	0.00	0.00
15,800.00	89.52	180.00	7,311.71	-8,946.42	-640.70	8,946.42	0.00	0.00	0.00
15,900.00	89.52	180.00	7,312.55	-9,046.42	-640.70	9,046.42	0.00	0.00	0.00
16,000.00	89.52	180.00	7,313.39	-9,146.41	-640.70	9,146.41	0.00	0.00	0.00
16,100.00	89.52	180.00	7,314.23	-9,246.41	-640.70	9,246.41	0.00	0.00	0.00
16,200.00	89.52	180.00	7,315.07	-9,346.41	-640.70	9,346.41	0.00	0.00	0.00
16,300.00	89.52	180.00	7,315.91	-9,446.40	-640.70	9,446.40	0.00	0.00	0.00
16,400.00	89.52	180.00	7,316.75	-9,546.40	-640.70	9,546.40	0.00	0.00	0.00
16,500.00	89.52	180.00	7,317.59	-9,646.40	-640.70	9,646.40	0.00	0.00	0.00
16,600.00	89.52	180.00	7,318.43	-9,746.39	-640.70	9,746.39	0.00	0.00	0.00
16,700.00	89.52	180.00	7,319.27	-9,846.39	-640.70	9,846.39	0.00	0.00	0.00
16,800.00	89.52	180.00	7,320.11	-9,946.39	-640.70	9,946.39	0.00	0.00	0.00
16,900.00	89.52	180.00	7,320.95	-10,046.38	-640.70	10,046.38	0.00	0.00	0.00
17,000.00	89.52	180.00	7,321.79	-10,146.38	-640.70	10,146.38	0.00	0.00	0.00
17,100.00	89.52	180.00	7,322.63	-10,246.38	-640.70	10,246.38	0.00	0.00	0.00
17,143.69	89.52	180.00	7,323.00	-10,290.06	-640.70	10,290.06	0.00	0.00	0.00
<b>4 1/2" - PBHL_SCOTT FARM 37N-19HZ(460 FSL 1170 FEL)</b>									

<b>Database:</b>	EDM5000-RobertS-Local	<b>Local Co-ordinate Reference:</b>	Well SCOTT FARM 37N-19HZ
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	GL 4926 & KB 17 @ 4943.00ft (ASSUMED)
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>MD Reference:</b>	GL 4926 & KB 17 @ 4943.00ft (ASSUMED)
<b>Site:</b>	SCOTT FARM PAD 16C-19HZ	<b>North Reference:</b>	True
<b>Well:</b>	SCOTT FARM 37N-19HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	PLAN #1 PRELIMINARY		

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_SCOTT FARM 37N-19HZ	0.00	0.00	7,323.00	-10,290.07	-640.70	1,254,771.31	3,191,912.40	40.0306990	-104.8146590
- plan hits target center									
- Point									

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)	
943.00	943.00	9 5/8"	9.625	12.250	
7,621.43	7,243.00	7"(588 FNL 1175 FEL)	7.000	7.500	
17,143.69	7,323.00	4 1/2"	4.500	6.125	

Formations					
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
893.00	894.00	Fox Hills Base			
4,177.05	4,137.00	Parkman			
4,578.15	4,532.00	Sussex			
7,159.24	7,064.00	Sharon Springs			
7,214.00	7,102.00	Niobrara A			
7,443.12	7,215.00	Niobrara B			
13,453.93	7,293.00	Niobrara C			

Plan Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
1,143.00	1,143.00	0.00	0.00	Start Build 2.00
1,642.83	1,640.29	-12.96	-41.52	Start 3189.84 hold at 1642.83 MD
4,832.66	4,781.65	-178.05	-570.39	Start Drop -2.00
5,332.49	5,276.41	-198.43	-635.68	Start 1391.06 hold at 5332.49 MD
6,723.55	6,667.36	-200.00	-640.70	Start DLS 10.00 TFO 180.00
7,618.84	7,242.97	-765.55	-640.70	Start 9722.15 hold at 7618.84 MD
17,340.99				TD at 17340.99