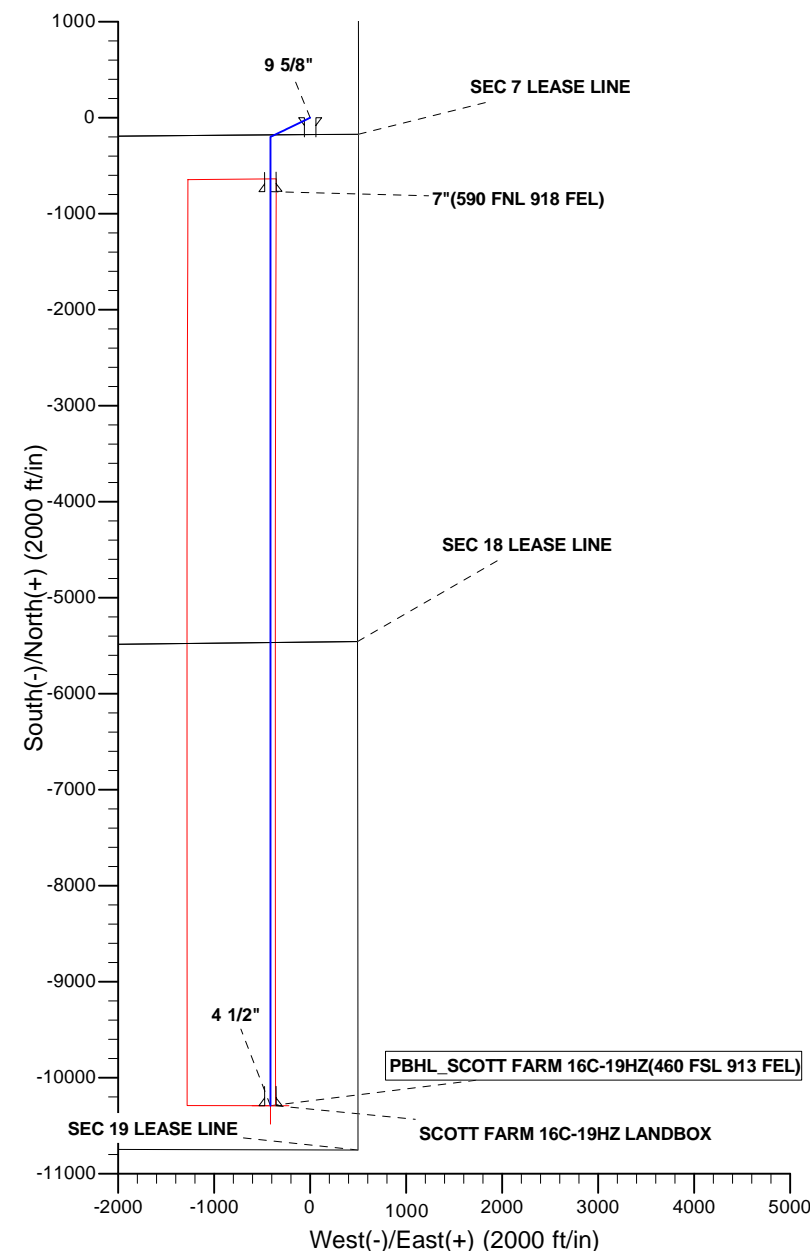
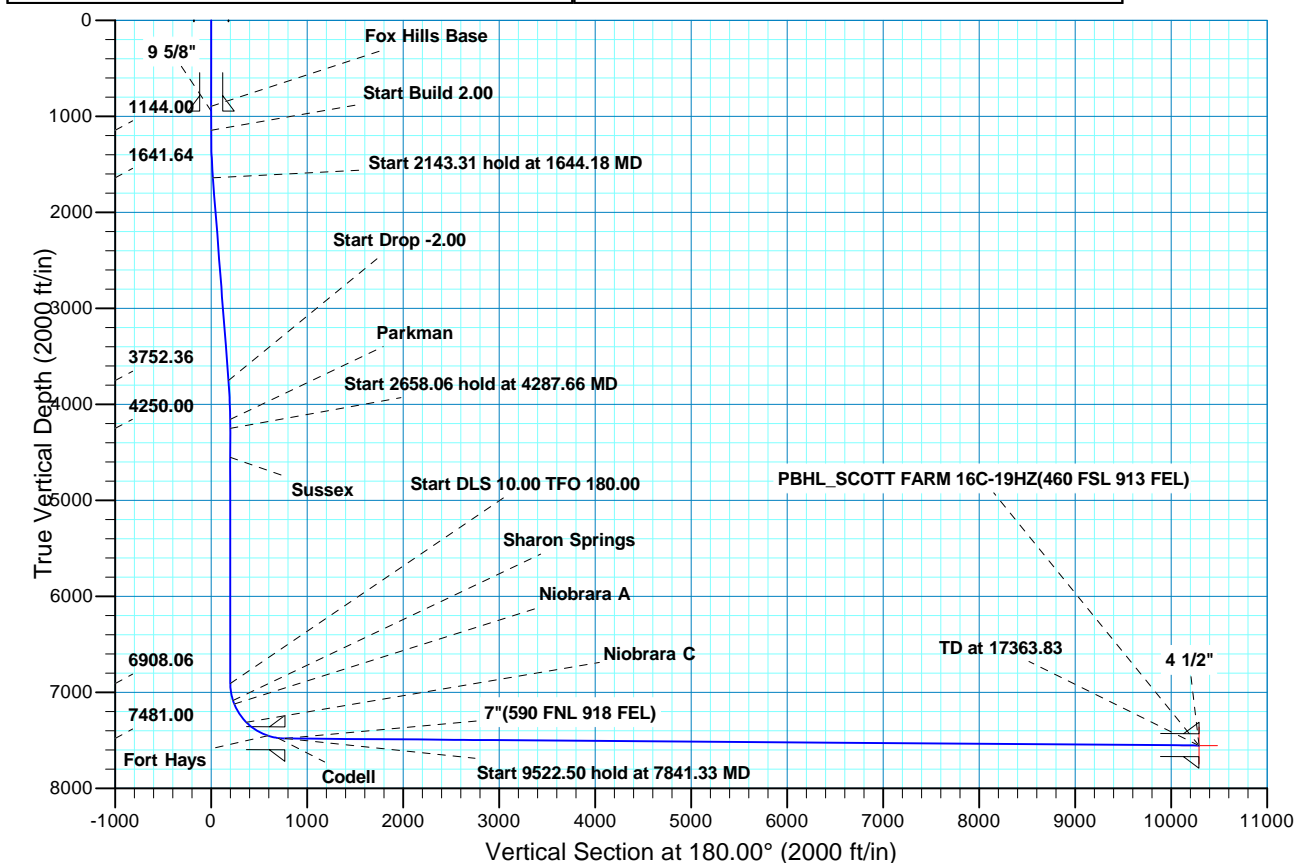


WELL DETAILS: SCOTT FARM 16C-19HZ											
GL 4927 & KB 17 @ 4944.00ft (ASSUMED)											
+N/-S		+E/-W		Northing		Easting		Latitude		Longitude	
0.00		0.00		1265066.60		3192503.24		40.0589479		-104.8122640	
SECTION DETAILS											
MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target		
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			
1144.00	0.00	0.00	1144.00	0.00	0.00	0.00	0.00	0.00			
1644.18	10.00	244.19	1641.64	-18.96	-39.21	2.00	244.19	18.96			
3787.48	10.00	244.19	3752.36	-181.04	-374.39	0.00	0.00	181.04			
4287.66	0.00	0.00	4250.00	-200.00	-413.60	2.00	180.00	200.00			
6945.72	0.00	0.00	6908.06	-200.00	-413.60	0.00	0.00	200.00			
7841.33	89.56	180.00	7481.00	-768.56	-413.60	10.00	180.00	768.56			
17363.83	89.56	180.00	7554.00	10290.79	-413.60	0.00	0.00	10290.79	PBHL_SCOTT FARM 16C-19HZ(460 FSL 913 FEL)		
CASING DETAILS						FORMATION TOP DETAILS					
TVD	MD	Name	Size			TVDPath	MDPath	Formation	Inc		
944.00	944.00	9 5/8"	9.625			894.00	894.00	Fox Hills Base	0.00		
7481.00	7841.33	7"	7.000			4157.00	4194.64	Parkman	1.86		
7554.00	17363.83	4 1/2"	4.500			4552.00	4589.66	Sussex	0.00		
						7084.00	7124.55	Sharon Springs	17.88		
						7122.00	7164.97	Niobrara A	21.93		
						7235.00	7293.65	Niobrara B	34.79		
						7313.00	7395.43	Niobrara C	44.97		
						7452.00	7662.59	Fort Hays	71.69		
						7476.00	7769.84	Codell	82.41		





Scientific Drilling

US ROCKIES REGION PLANNING

COLORADO NORTHERN ZONE - 83

SCOTT FARM PAD 16C-19HZ

SCOTT FARM 16C-19HZ

OH

Plan: PLAN #1 PRELIMINARY

Standard Planning Report

10 July, 2013

Database:	EDM5000-RobertS-Local	Local Co-ordinate Reference:	Well SCOTT FARM 16C-19HZ
Company:	US ROCKIES REGION PLANNING	TVD Reference:	GL 4927 & KB 17 @ 4944.00ft (ASSUMED)
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	GL 4927 & KB 17 @ 4944.00ft (ASSUMED)
Site:	SCOTT FARM PAD 16C-19HZ	North Reference:	True
Well:	SCOTT FARM 16C-19HZ	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	SCOTT FARM PAD 16C-19HZ, SESE SECTION 7 T1N R66W			
Site Position:		Northing:	1,265,066.02 usft	Latitude: 40.0589470
From:	Lat/Long	Easting:	3,192,473.29 usft	Longitude: -104.8123710
Position Uncertainty:	0.00 ft	Slot Radius:	13.200 in	Grid Convergence: 0.44 °

Well	SCOTT FARM 16C-19HZ, 175' FSL 505' FEL			
Well Position	+N/-S	0.35 ft	Northing:	1,265,066.60 usft
	+E/-W	29.95 ft	Easting:	3,192,503.24 usft
Position Uncertainty		0.00 ft	Wellhead Elevation:	Ground Level: 4,927.00 ft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	BGGM2013	2013/07/10	8.61	66.69	52,659

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	
1,144.00	0.00	0.00	1,144.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,644.18	10.00	244.19	1,641.64	-18.96	-39.21	2.00	2.00	0.00	244.19	
3,787.48	10.00	244.19	3,752.36	-181.04	-374.39	0.00	0.00	0.00	0.00	
4,287.66	0.00	0.00	4,250.00	-200.00	-413.60	2.00	-2.00	0.00	180.00	
6,945.72	0.00	0.00	6,908.06	-200.00	-413.60	0.00	0.00	0.00	0.00	
7,841.33	89.56	180.00	7,481.00	-768.56	-413.60	10.00	10.00	20.10	180.00	
17,363.83	89.56	180.00	7,554.00	-10,290.79	-413.60	0.00	0.00	0.00	0.00	PBHL_SCOTT FARM

Database:	EDM5000-RobertS-Local	Local Co-ordinate Reference:	Well SCOTT FARM 16C-19HZ
Company:	US ROCKIES REGION PLANNING	TVD Reference:	GL 4927 & KB 17 @ 4944.00ft (ASSUMED)
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	GL 4927 & KB 17 @ 4944.00ft (ASSUMED)
Site:	SCOTT FARM PAD 16C-19HZ	North Reference:	True
Well:	SCOTT FARM 16C-19HZ	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
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
894.00	0.00	0.00	894.00	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
944.00	0.00	0.00	944.00	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
1,144.00	0.00	0.00	1,144.00	0.00	0.00	0.00	0.00	0.00	0.00
Start Build 2.00									
1,200.00	1.12	244.19	1,200.00	-0.24	-0.49	0.24	2.00	2.00	0.00
1,300.00	3.12	244.19	1,299.92	-1.85	-3.82	1.85	2.00	2.00	0.00
1,400.00	5.12	244.19	1,399.66	-4.98	-10.29	4.98	2.00	2.00	0.00
1,500.00	7.12	244.19	1,499.08	-9.62	-19.89	9.62	2.00	2.00	0.00
1,600.00	9.12	244.19	1,598.08	-15.77	-32.60	15.77	2.00	2.00	0.00
1,644.18	10.00	244.19	1,641.64	-18.96	-39.21	18.96	2.00	2.00	0.00
Start 2143.31 hold at 1644.18 MD									
1,700.00	10.00	244.19	1,696.61	-23.18	-47.94	23.18	0.00	0.00	0.00
1,800.00	10.00	244.19	1,795.09	-30.74	-63.58	30.74	0.00	0.00	0.00
1,900.00	10.00	244.19	1,893.57	-38.31	-79.22	38.31	0.00	0.00	0.00
2,000.00	10.00	244.19	1,992.05	-45.87	-94.86	45.87	0.00	0.00	0.00
2,100.00	10.00	244.19	2,090.53	-53.43	-110.49	53.43	0.00	0.00	0.00
2,200.00	10.00	244.19	2,189.01	-60.99	-126.13	60.99	0.00	0.00	0.00
2,300.00	10.00	244.19	2,287.49	-68.55	-141.77	68.55	0.00	0.00	0.00
2,400.00	10.00	244.19	2,385.97	-76.11	-157.41	76.11	0.00	0.00	0.00
2,500.00	10.00	244.19	2,484.45	-83.68	-173.05	83.68	0.00	0.00	0.00
2,600.00	10.00	244.19	2,582.93	-91.24	-188.69	91.24	0.00	0.00	0.00
2,700.00	10.00	244.19	2,681.41	-98.80	-204.33	98.80	0.00	0.00	0.00
2,800.00	10.00	244.19	2,779.89	-106.36	-219.96	106.36	0.00	0.00	0.00
2,900.00	10.00	244.19	2,878.37	-113.92	-235.60	113.92	0.00	0.00	0.00
3,000.00	10.00	244.19	2,976.85	-121.49	-251.24	121.49	0.00	0.00	0.00
3,100.00	10.00	244.19	3,075.33	-129.05	-266.88	129.05	0.00	0.00	0.00
3,200.00	10.00	244.19	3,173.81	-136.61	-282.52	136.61	0.00	0.00	0.00
3,300.00	10.00	244.19	3,272.29	-144.17	-298.16	144.17	0.00	0.00	0.00
3,400.00	10.00	244.19	3,370.77	-151.73	-313.79	151.73	0.00	0.00	0.00
3,500.00	10.00	244.19	3,469.25	-159.30	-329.43	159.30	0.00	0.00	0.00
3,600.00	10.00	244.19	3,567.73	-166.86	-345.07	166.86	0.00	0.00	0.00
3,700.00	10.00	244.19	3,666.21	-174.42	-360.71	174.42	0.00	0.00	0.00
3,787.48	10.00	244.19	3,752.36	-181.04	-374.39	181.04	0.00	0.00	0.00
Start Drop -2.00									
3,800.00	9.75	244.19	3,764.69	-181.97	-376.32	181.97	2.00	-2.00	0.00
3,900.00	7.75	244.19	3,863.52	-188.60	-390.02	188.60	2.00	-2.00	0.00
4,000.00	5.75	244.19	3,962.82	-193.71	-400.61	193.71	2.00	-2.00	0.00
4,100.00	3.75	244.19	4,062.48	-197.32	-408.07	197.32	2.00	-2.00	0.00
4,194.64	1.86	244.19	4,157.00	-199.34	-412.24	199.34	2.00	-2.00	0.00

Database:	EDM5000-RobertS-Local	Local Co-ordinate Reference:	Well SCOTT FARM 16C-19HZ
Company:	US ROCKIES REGION PLANNING	TVD Reference:	GL 4927 & KB 17 @ 4944.00ft (ASSUMED)
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	GL 4927 & KB 17 @ 4944.00ft (ASSUMED)
Site:	SCOTT FARM PAD 16C-19HZ	North Reference:	True
Well:	SCOTT FARM 16C-19HZ	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)	
Parkman										
4,200.00	1.75	244.19	4,162.35	-199.41	-412.39	199.41	2.00	-2.00	0.00	
4,287.66	0.00	0.00	4,250.00	-200.00	-413.60	200.00	2.00	-2.00	0.00	
Start 2658.06 hold at 4287.66 MD										
4,300.00	0.00	0.00	4,262.34	-200.00	-413.60	200.00	0.00	0.00	0.00	
4,400.00	0.00	0.00	4,362.34	-200.00	-413.60	200.00	0.00	0.00	0.00	
4,500.00	0.00	0.00	4,462.34	-200.00	-413.60	200.00	0.00	0.00	0.00	
4,589.66	0.00	0.00	4,552.00	-200.00	-413.60	200.00	0.00	0.00	0.00	
Sussex										
4,600.00	0.00	0.00	4,562.34	-200.00	-413.60	200.00	0.00	0.00	0.00	
4,700.00	0.00	0.00	4,662.34	-200.00	-413.60	200.00	0.00	0.00	0.00	
4,800.00	0.00	0.00	4,762.34	-200.00	-413.60	200.00	0.00	0.00	0.00	
4,900.00	0.00	0.00	4,862.34	-200.00	-413.60	200.00	0.00	0.00	0.00	
5,000.00	0.00	0.00	4,962.34	-200.00	-413.60	200.00	0.00	0.00	0.00	
5,100.00	0.00	0.00	5,062.34	-200.00	-413.60	200.00	0.00	0.00	0.00	
5,200.00	0.00	0.00	5,162.34	-200.00	-413.60	200.00	0.00	0.00	0.00	
5,300.00	0.00	0.00	5,262.34	-200.00	-413.60	200.00	0.00	0.00	0.00	
5,400.00	0.00	0.00	5,362.34	-200.00	-413.60	200.00	0.00	0.00	0.00	
5,500.00	0.00	0.00	5,462.34	-200.00	-413.60	200.00	0.00	0.00	0.00	
5,600.00	0.00	0.00	5,562.34	-200.00	-413.60	200.00	0.00	0.00	0.00	
5,700.00	0.00	0.00	5,662.34	-200.00	-413.60	200.00	0.00	0.00	0.00	
5,800.00	0.00	0.00	5,762.34	-200.00	-413.60	200.00	0.00	0.00	0.00	
5,900.00	0.00	0.00	5,862.34	-200.00	-413.60	200.00	0.00	0.00	0.00	
6,000.00	0.00	0.00	5,962.34	-200.00	-413.60	200.00	0.00	0.00	0.00	
6,100.00	0.00	0.00	6,062.34	-200.00	-413.60	200.00	0.00	0.00	0.00	
6,200.00	0.00	0.00	6,162.34	-200.00	-413.60	200.00	0.00	0.00	0.00	
6,300.00	0.00	0.00	6,262.34	-200.00	-413.60	200.00	0.00	0.00	0.00	
6,400.00	0.00	0.00	6,362.34	-200.00	-413.60	200.00	0.00	0.00	0.00	
6,500.00	0.00	0.00	6,462.34	-200.00	-413.60	200.00	0.00	0.00	0.00	
6,600.00	0.00	0.00	6,562.34	-200.00	-413.60	200.00	0.00	0.00	0.00	
6,700.00	0.00	0.00	6,662.34	-200.00	-413.60	200.00	0.00	0.00	0.00	
6,800.00	0.00	0.00	6,762.34	-200.00	-413.60	200.00	0.00	0.00	0.00	
6,900.00	0.00	0.00	6,862.34	-200.00	-413.60	200.00	0.00	0.00	0.00	
6,945.72	0.00	0.00	6,908.06	-200.00	-413.60	200.00	0.00	0.00	0.00	
Start DLS 10.00 TFO 180.00										
7,000.00	5.43	180.00	6,962.26	-202.57	-413.60	202.57	10.00	10.00	0.00	
7,100.00	15.43	180.00	7,060.48	-220.64	-413.60	220.64	10.00	10.00	0.00	
7,124.55	17.88	180.00	7,084.00	-227.68	-413.60	227.68	10.00	10.00	0.00	
Sharon Springs										
7,164.97	21.93	180.00	7,122.00	-241.44	-413.60	241.44	10.00	10.00	0.00	
Niobrara A										
7,200.00	25.43	180.00	7,154.08	-255.50	-413.60	255.50	10.00	10.00	0.00	
7,293.65	34.79	180.00	7,235.00	-302.43	-413.60	302.43	10.00	10.00	0.00	
Niobrara B										
7,300.00	35.43	180.00	7,240.19	-306.08	-413.60	306.08	10.00	10.00	0.00	
7,395.43	44.97	180.00	7,313.00	-367.61	-413.60	367.61	10.00	10.00	0.00	
Niobrara C										
7,400.00	45.43	180.00	7,316.22	-370.85	-413.60	370.85	10.00	10.00	0.00	
7,500.00	55.43	180.00	7,379.84	-447.83	-413.60	447.83	10.00	10.00	0.00	
7,600.00	65.43	180.00	7,429.13	-534.70	-413.60	534.70	10.00	10.00	0.00	
7,662.59	71.69	180.00	7,452.00	-592.93	-413.60	592.93	10.00	10.00	0.00	
Fort Hays										
7,700.00	75.43	180.00	7,462.59	-628.80	-413.60	628.80	10.00	10.00	0.00	

Database:	EDM5000-RobertS-Local	Local Co-ordinate Reference:	Well SCOTT FARM 16C-19HZ
Company:	US ROCKIES REGION PLANNING	TVD Reference:	GL 4927 & KB 17 @ 4944.00ft (ASSUMED)
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	GL 4927 & KB 17 @ 4944.00ft (ASSUMED)
Site:	SCOTT FARM PAD 16C-19HZ	North Reference:	True
Well:	SCOTT FARM 16C-19HZ	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)
7,769.84	82.41	180.00	7,476.00	-697.29	-413.60	697.29	10.00	10.00	0.00
Codell									
7,800.00	85.43	180.00	7,479.19	-727.28	-413.60	727.28	10.00	10.00	0.00
7,841.33	89.56	180.00	7,481.00	-768.56	-413.60	768.56	10.00	10.00	0.00
Start 9522.50 hold at 7841.33 MD - 7"(590 FNL 918 FEL)									
7,900.00	89.56	180.00	7,481.45	-827.23	-413.60	827.23	0.00	0.00	0.00
8,000.00	89.56	180.00	7,482.22	-927.23	-413.60	927.23	0.00	0.00	0.00
8,100.00	89.56	180.00	7,482.98	-1,027.23	-413.60	1,027.23	0.00	0.00	0.00
8,200.00	89.56	180.00	7,483.75	-1,127.22	-413.60	1,127.22	0.00	0.00	0.00
8,300.00	89.56	180.00	7,484.52	-1,227.22	-413.60	1,227.22	0.00	0.00	0.00
8,400.00	89.56	180.00	7,485.28	-1,327.22	-413.60	1,327.22	0.00	0.00	0.00
8,500.00	89.56	180.00	7,486.05	-1,427.22	-413.60	1,427.22	0.00	0.00	0.00
8,600.00	89.56	180.00	7,486.82	-1,527.21	-413.60	1,527.21	0.00	0.00	0.00
8,700.00	89.56	180.00	7,487.58	-1,627.21	-413.60	1,627.21	0.00	0.00	0.00
8,800.00	89.56	180.00	7,488.35	-1,727.21	-413.60	1,727.21	0.00	0.00	0.00
8,900.00	89.56	180.00	7,489.12	-1,827.20	-413.60	1,827.20	0.00	0.00	0.00
9,000.00	89.56	180.00	7,489.88	-1,927.20	-413.60	1,927.20	0.00	0.00	0.00
9,100.00	89.56	180.00	7,490.65	-2,027.20	-413.60	2,027.20	0.00	0.00	0.00
9,200.00	89.56	180.00	7,491.42	-2,127.19	-413.60	2,127.19	0.00	0.00	0.00
9,300.00	89.56	180.00	7,492.18	-2,227.19	-413.60	2,227.19	0.00	0.00	0.00
9,400.00	89.56	180.00	7,492.95	-2,327.19	-413.60	2,327.19	0.00	0.00	0.00
9,500.00	89.56	180.00	7,493.72	-2,427.19	-413.60	2,427.19	0.00	0.00	0.00
9,600.00	89.56	180.00	7,494.48	-2,527.18	-413.60	2,527.18	0.00	0.00	0.00
9,700.00	89.56	180.00	7,495.25	-2,627.18	-413.60	2,627.18	0.00	0.00	0.00
9,800.00	89.56	180.00	7,496.02	-2,727.18	-413.60	2,727.18	0.00	0.00	0.00
9,900.00	89.56	180.00	7,496.78	-2,827.17	-413.60	2,827.17	0.00	0.00	0.00
10,000.00	89.56	180.00	7,497.55	-2,927.17	-413.60	2,927.17	0.00	0.00	0.00
10,100.00	89.56	180.00	7,498.32	-3,027.17	-413.60	3,027.17	0.00	0.00	0.00
10,200.00	89.56	180.00	7,499.08	-3,127.17	-413.60	3,127.17	0.00	0.00	0.00
10,300.00	89.56	180.00	7,499.85	-3,227.16	-413.60	3,227.16	0.00	0.00	0.00
10,400.00	89.56	180.00	7,500.62	-3,327.16	-413.60	3,327.16	0.00	0.00	0.00
10,500.00	89.56	180.00	7,501.38	-3,427.16	-413.60	3,427.16	0.00	0.00	0.00
10,600.00	89.56	180.00	7,502.15	-3,527.15	-413.60	3,527.15	0.00	0.00	0.00
10,700.00	89.56	180.00	7,502.92	-3,627.15	-413.60	3,627.15	0.00	0.00	0.00
10,800.00	89.56	180.00	7,503.68	-3,727.15	-413.60	3,727.15	0.00	0.00	0.00
10,900.00	89.56	180.00	7,504.45	-3,827.14	-413.60	3,827.14	0.00	0.00	0.00
11,000.00	89.56	180.00	7,505.22	-3,927.14	-413.60	3,927.14	0.00	0.00	0.00
11,100.00	89.56	180.00	7,505.98	-4,027.14	-413.60	4,027.14	0.00	0.00	0.00
11,200.00	89.56	180.00	7,506.75	-4,127.14	-413.60	4,127.14	0.00	0.00	0.00
11,300.00	89.56	180.00	7,507.52	-4,227.13	-413.60	4,227.13	0.00	0.00	0.00
11,400.00	89.56	180.00	7,508.28	-4,327.13	-413.60	4,327.13	0.00	0.00	0.00
11,500.00	89.56	180.00	7,509.05	-4,427.13	-413.60	4,427.13	0.00	0.00	0.00
11,600.00	89.56	180.00	7,509.81	-4,527.12	-413.60	4,527.12	0.00	0.00	0.00
11,700.00	89.56	180.00	7,510.58	-4,627.12	-413.60	4,627.12	0.00	0.00	0.00
11,800.00	89.56	180.00	7,511.35	-4,727.12	-413.60	4,727.12	0.00	0.00	0.00
11,900.00	89.56	180.00	7,512.11	-4,827.12	-413.60	4,827.12	0.00	0.00	0.00
12,000.00	89.56	180.00	7,512.88	-4,927.11	-413.60	4,927.11	0.00	0.00	0.00
12,100.00	89.56	180.00	7,513.65	-5,027.11	-413.60	5,027.11	0.00	0.00	0.00
12,200.00	89.56	180.00	7,514.41	-5,127.11	-413.60	5,127.11	0.00	0.00	0.00
12,300.00	89.56	180.00	7,515.18	-5,227.10	-413.60	5,227.10	0.00	0.00	0.00
12,400.00	89.56	180.00	7,515.95	-5,327.10	-413.60	5,327.10	0.00	0.00	0.00
12,500.00	89.56	180.00	7,516.71	-5,427.10	-413.60	5,427.10	0.00	0.00	0.00
12,600.00	89.56	180.00	7,517.48	-5,527.09	-413.60	5,527.09	0.00	0.00	0.00
12,700.00	89.56	180.00	7,518.25	-5,627.09	-413.60	5,627.09	0.00	0.00	0.00

Database:	EDM5000-RobertS-Local	Local Co-ordinate Reference:	Well SCOTT FARM 16C-19HZ
Company:	US ROCKIES REGION PLANNING	TVD Reference:	GL 4927 & KB 17 @ 4944.00ft (ASSUMED)
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	GL 4927 & KB 17 @ 4944.00ft (ASSUMED)
Site:	SCOTT FARM PAD 16C-19HZ	North Reference:	True
Well:	SCOTT FARM 16C-19HZ	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)
12,800.00	89.56	180.00	7,519.01	-5,727.09	-413.60	5,727.09	0.00	0.00	0.00
12,900.00	89.56	180.00	7,519.78	-5,827.09	-413.60	5,827.09	0.00	0.00	0.00
13,000.00	89.56	180.00	7,520.55	-5,927.08	-413.60	5,927.08	0.00	0.00	0.00
13,100.00	89.56	180.00	7,521.31	-6,027.08	-413.60	6,027.08	0.00	0.00	0.00
13,200.00	89.56	180.00	7,522.08	-6,127.08	-413.60	6,127.08	0.00	0.00	0.00
13,300.00	89.56	180.00	7,522.85	-6,227.07	-413.60	6,227.07	0.00	0.00	0.00
13,400.00	89.56	180.00	7,523.61	-6,327.07	-413.60	6,327.07	0.00	0.00	0.00
13,500.00	89.56	180.00	7,524.38	-6,427.07	-413.60	6,427.07	0.00	0.00	0.00
13,600.00	89.56	180.00	7,525.15	-6,527.07	-413.60	6,527.07	0.00	0.00	0.00
13,700.00	89.56	180.00	7,525.91	-6,627.06	-413.60	6,627.06	0.00	0.00	0.00
13,800.00	89.56	180.00	7,526.68	-6,727.06	-413.60	6,727.06	0.00	0.00	0.00
13,900.00	89.56	180.00	7,527.45	-6,827.06	-413.60	6,827.06	0.00	0.00	0.00
14,000.00	89.56	180.00	7,528.21	-6,927.05	-413.60	6,927.05	0.00	0.00	0.00
14,100.00	89.56	180.00	7,528.98	-7,027.05	-413.60	7,027.05	0.00	0.00	0.00
14,200.00	89.56	180.00	7,529.75	-7,127.05	-413.60	7,127.05	0.00	0.00	0.00
14,300.00	89.56	180.00	7,530.51	-7,227.04	-413.60	7,227.04	0.00	0.00	0.00
14,400.00	89.56	180.00	7,531.28	-7,327.04	-413.60	7,327.04	0.00	0.00	0.00
14,500.00	89.56	180.00	7,532.05	-7,427.04	-413.60	7,427.04	0.00	0.00	0.00
14,600.00	89.56	180.00	7,532.81	-7,527.04	-413.60	7,527.04	0.00	0.00	0.00
14,700.00	89.56	180.00	7,533.58	-7,627.03	-413.60	7,627.03	0.00	0.00	0.00
14,800.00	89.56	180.00	7,534.35	-7,727.03	-413.60	7,727.03	0.00	0.00	0.00
14,900.00	89.56	180.00	7,535.11	-7,827.03	-413.60	7,827.03	0.00	0.00	0.00
15,000.00	89.56	180.00	7,535.88	-7,927.02	-413.60	7,927.02	0.00	0.00	0.00
15,100.00	89.56	180.00	7,536.65	-8,027.02	-413.60	8,027.02	0.00	0.00	0.00
15,200.00	89.56	180.00	7,537.41	-8,127.02	-413.60	8,127.02	0.00	0.00	0.00
15,300.00	89.56	180.00	7,538.18	-8,227.02	-413.60	8,227.02	0.00	0.00	0.00
15,400.00	89.56	180.00	7,538.95	-8,327.01	-413.60	8,327.01	0.00	0.00	0.00
15,500.00	89.56	180.00	7,539.71	-8,427.01	-413.60	8,427.01	0.00	0.00	0.00
15,600.00	89.56	180.00	7,540.48	-8,527.01	-413.60	8,527.01	0.00	0.00	0.00
15,700.00	89.56	180.00	7,541.25	-8,627.00	-413.60	8,627.00	0.00	0.00	0.00
15,800.00	89.56	180.00	7,542.01	-8,727.00	-413.60	8,727.00	0.00	0.00	0.00
15,900.00	89.56	180.00	7,542.78	-8,827.00	-413.60	8,827.00	0.00	0.00	0.00
16,000.00	89.56	180.00	7,543.55	-8,926.99	-413.60	8,926.99	0.00	0.00	0.00
16,100.00	89.56	180.00	7,544.31	-9,026.99	-413.60	9,026.99	0.00	0.00	0.00
16,200.00	89.56	180.00	7,545.08	-9,126.99	-413.60	9,126.99	0.00	0.00	0.00
16,300.00	89.56	180.00	7,545.84	-9,226.99	-413.60	9,226.99	0.00	0.00	0.00
16,400.00	89.56	180.00	7,546.61	-9,326.98	-413.60	9,326.98	0.00	0.00	0.00
16,500.00	89.56	180.00	7,547.38	-9,426.98	-413.60	9,426.98	0.00	0.00	0.00
16,600.00	89.56	180.00	7,548.14	-9,526.98	-413.60	9,526.98	0.00	0.00	0.00
16,700.00	89.56	180.00	7,548.91	-9,626.97	-413.60	9,626.97	0.00	0.00	0.00
16,800.00	89.56	180.00	7,549.68	-9,726.97	-413.60	9,726.97	0.00	0.00	0.00
16,900.00	89.56	180.00	7,550.44	-9,826.97	-413.60	9,826.97	0.00	0.00	0.00
17,000.00	89.56	180.00	7,551.21	-9,926.97	-413.60	9,926.97	0.00	0.00	0.00
17,100.00	89.56	180.00	7,551.98	-10,026.96	-413.60	10,026.96	0.00	0.00	0.00
17,200.00	89.56	180.00	7,552.74	-10,126.96	-413.60	10,126.96	0.00	0.00	0.00
17,300.00	89.56	180.00	7,553.51	-10,226.96	-413.60	10,226.96	0.00	0.00	0.00
17,363.83	89.56	180.00	7,554.00	-10,290.78	-413.60	10,290.78	0.00	0.00	0.00
TD at 17363.83 - 4 1/2" - PBHL_SCOTT FARM 16C-19HZ(460 FSL 913 FEL)									

Database:	EDM5000-RobertS-Local	Local Co-ordinate Reference:	Well SCOTT FARM 16C-19HZ
Company:	US ROCKIES REGION PLANNING	TVD Reference:	GL 4927 & KB 17 @ 4944.00ft (ASSUMED)
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	GL 4927 & KB 17 @ 4944.00ft (ASSUMED)
Site:	SCOTT FARM PAD 16C-19HZ	North Reference:	True
Well:	SCOTT FARM 16C-19HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	PLAN #1 PRELIMINARY		

Design Targets									
Target Name	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- hit/miss target	(°)	(°)	(ft)	(ft)	(ft)	(usft)	(usft)		
- Shape									
PBHL_SCOTT FARM 16C-19HZ	0.00	0.00	7,554.00	-10,290.79	-413.60	1,254,772.93	3,192,169.46	40.0306980	-104.8137410
- plan hits target center									
- Point									

Casing Points					
Measured Depth	Vertical Depth	Name		Casing Diameter	Hole Diameter
(ft)	(ft)			(in)	(in)
944.00	944.00	9 5/8"		9.625	12.250
7,841.33	7,481.00	7"(590 FNL 918 FEL)		7.000	7.500
17,363.83	7,554.00	4 1/2"		4.500	6.125

Formations					
Measured Depth	Vertical Depth	Name	Lithology	Dip	Dip Direction
(ft)	(ft)			(°)	(°)
894.00	894.00	Fox Hills Base			
4,194.64	4,157.00	Parkman			
4,589.66	4,552.00	Sussex			
7,124.55	7,084.00	Sharon Springs			
7,164.97	7,122.00	Niobrara A			
7,293.65	7,235.00	Niobrara B			
7,395.43	7,313.00	Niobrara C			
7,662.59	7,452.00	Fort Hays			
7,769.84	7,476.00	Codell			

Plan Annotations				
Measured Depth	Vertical Depth	Local Coordinates		Comment
(ft)	(ft)	+N/-S	+E/-W	
(ft)	(ft)	(ft)	(ft)	
1,144.00	1,144.00	0.00	0.00	Start Build 2.00
1,644.18	1,641.64	-18.96	-39.21	Start 2143.31 hold at 1644.18 MD
3,787.48	3,752.36	-181.04	-374.39	Start Drop -2.00
4,287.66	4,250.00	-200.00	-413.60	Start 2658.06 hold at 4287.66 MD
6,945.72	6,908.06	-200.00	-413.60	Start DLS 10.00 TFO 180.00
7,841.33	7,481.00	-768.56	-413.60	Start 9522.50 hold at 7841.33 MD
17,363.83	7,554.00	-10,290.79	-413.60	TD at 17363.83