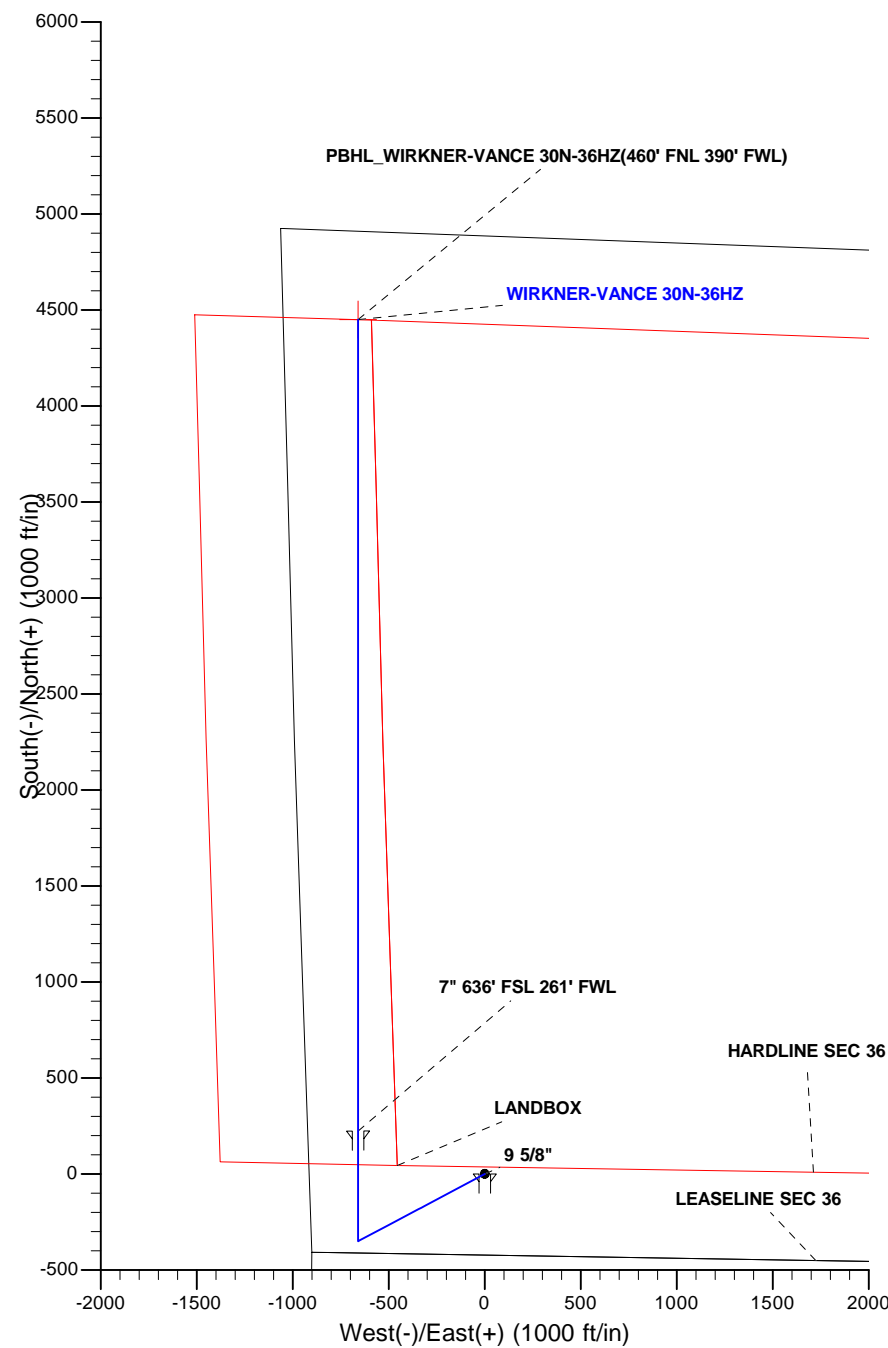
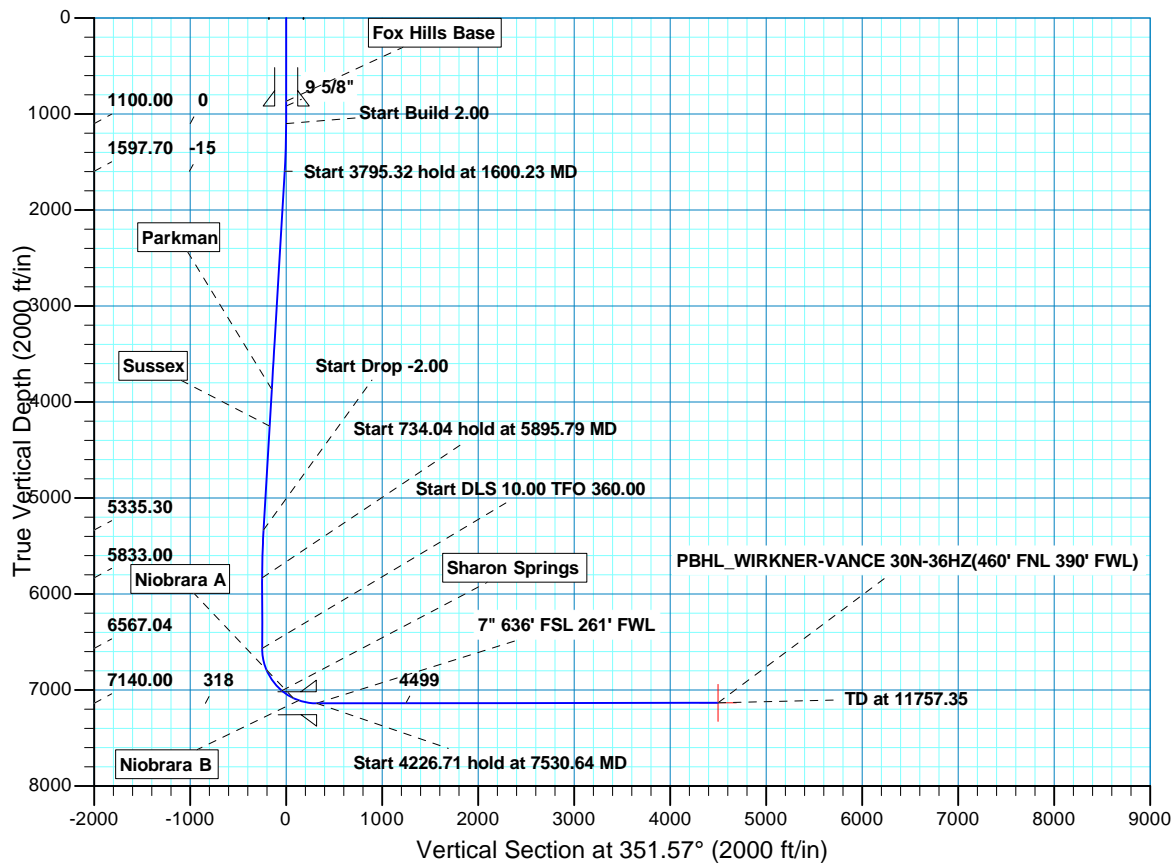


WELL DETAILS: WIRKNER-VANCE 30N-36HZ																			
GL 4822 & KB 17 @ 4839.00ft (ASSUMED)																			
+N/-S 0.00		+E/-W 0.00		Northing 1307396.60		Easting 3183018.75		Latitude 40.1753439		Longitude -104.8450300									
SECTION DETAILS																			
MD		Inc		Azi		TVD		+N/-S		+E/-W		Dleg		TFace		VSept		Target	
0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00	
1100.00		0.00		0.00		1100.00		0.00		0.00		0.00		0.00		0.00		0.00	
1600.23		10.00		242.04		1597.70		-20.43		-38.48		2.00		242.04		-14.57			
5395.56		10.00		242.04		5335.30		-329.57		-620.87		0.00		0.00		-235.03			
5895.79		0.00		0.00		5833.00		-350.00		-659.35		2.00		180.00		-249.59			
6629.83		0.00		0.00		6567.04		-350.00		-659.35		0.00		0.00		-249.59			
7530.64		90.08		360.00		7140.00		223.77		-659.35		10.00		360.00		317.98			
11757.35		90.08		360.00		7134.00		4450.47		-659.35		0.00		0.004499.05				PBHL_WIRKNER-VANCE 30N-36HZ(460' FNL 390' FWL)	
FORMATION TOP DETAILS										CASING DETAILS									
TVDPath		MDPath		Formation		DipDirInc		TVD		MD		Name		Size					
867.00		867.00		Fox Hills Base		0.00		917.00		917.00		9 5/8"		9.625					
3868.00		3905.59		Parkman		10.00		7140.00		7530.64		7"		7.000					
4252.00		4295.52		Sussex		10.00													
7008.00		7133.03		Sharon Springs		50.32													
7085.00		7276.73		Niobrara A		64.69													
7109.00		7340.50		Niobrara B		71.07													





Scientific Drilling

US ROCKIES REGION PLANNING

COLORADO NORTHERN ZONE - 83

WIRKNER-VANCE 3C-36HZ PAD

WIRKNER-VANCE 30N-36HZ

OH

Plan: PLAN #1 PRELIMINARY

Standard Planning Report

20 June, 2013

Database:	EDM5000-RobertS-Local	Local Co-ordinate Reference:	Well WIRKNER-VANCE 30N-36HZ
Company:	US ROCKIES REGION PLANNING	TVD Reference:	GL 4822 & KB 17 @ 4839.00ft (ASSUMED)
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	GL 4822 & KB 17 @ 4839.00ft (ASSUMED)
Site:	WIRKNER-VANCE 3C-36HZ PAD	North Reference:	True
Well:	WIRKNER-VANCE 30N-36HZ	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	WIRKNER-VANCE 3C-36HZ PAD, SECTION 36 T3N R67W			
Site Position:		Northing:	1,307,426.46 usft	Latitude: 40.1754260
From:	Lat/Long	Easting:	3,183,014.90 usft	Longitude: -104.8450430
Position Uncertainty:	0.00 ft	Slot Radius:	13.200 in	Grid Convergence: 0.42 °

Well	WIRKNER-VANCE 30N-36HZ, 423 FSL 914 FWL			
Well Position	+N/-S	-29.89 ft	Northing:	1,307,396.60 usft
	+E/-W	3.63 ft	Easting:	3,183,018.75 usft
Position Uncertainty		0.00 ft	Wellhead Elevation:	Ground Level: 4,822.00 ft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	BGGM2013	2013/06/18	8.64	66.78	52,727

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	351.57

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	
1,100.00	0.00	0.00	1,100.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,600.23	10.00	242.04	1,597.70	-20.43	-38.48	2.00	2.00	0.00	242.04	
5,395.56	10.00	242.04	5,335.30	-329.57	-620.87	0.00	0.00	0.00	0.00	
5,895.79	0.00	0.00	5,833.00	-350.00	-659.35	2.00	-2.00	0.00	180.00	
6,629.83	0.00	0.00	6,567.04	-350.00	-659.35	0.00	0.00	0.00	0.00	
7,530.64	90.08	360.00	7,140.00	223.77	-659.35	10.00	10.00	0.00	360.00	
11,757.35	90.08	360.00	7,134.00	4,450.47	-659.35	0.00	0.00	0.00	0.00	PBHL_WIRKNER-VA

Database:	EDM5000-RobertS-Local	Local Co-ordinate Reference:	Well WIRKNER-VANCE 30N-36HZ
Company:	US ROCKIES REGION PLANNING	TVD Reference:	GL 4822 & KB 17 @ 4839.00ft (ASSUMED)
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	GL 4822 & KB 17 @ 4839.00ft (ASSUMED)
Site:	WIRKNER-VANCE 3C-36HZ PAD	North Reference:	True
Well:	WIRKNER-VANCE 30N-36HZ	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
867.00	0.00	0.00	867.00	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
917.00	0.00	0.00	917.00	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
Start Build 2.00									
1,200.00	2.00	242.04	1,199.98	-0.82	-1.54	-0.58	2.00	2.00	0.00
1,300.00	4.00	242.04	1,299.84	-3.27	-6.16	-2.33	2.00	2.00	0.00
1,400.00	6.00	242.04	1,399.45	-7.36	-13.86	-5.25	2.00	2.00	0.00
1,500.00	8.00	242.04	1,498.70	-13.07	-24.63	-9.32	2.00	2.00	0.00
1,600.00	10.00	242.04	1,597.47	-20.41	-38.44	-14.55	2.00	2.00	0.00
1,600.23	10.00	242.04	1,597.70	-20.43	-38.48	-14.57	2.00	2.00	0.00
Start 3795.32 hold at 1600.23 MD									
1,700.00	10.00	242.04	1,695.94	-28.55	-53.79	-20.36	0.00	0.00	0.00
1,800.00	10.00	242.04	1,794.42	-36.70	-69.13	-26.17	0.00	0.00	0.00
1,900.00	10.00	242.04	1,892.90	-44.84	-84.48	-31.98	0.00	0.00	0.00
2,000.00	10.00	242.04	1,991.38	-52.99	-99.82	-37.79	0.00	0.00	0.00
2,100.00	10.00	242.04	2,089.86	-61.13	-115.17	-43.60	0.00	0.00	0.00
2,200.00	10.00	242.04	2,188.34	-69.28	-130.51	-49.40	0.00	0.00	0.00
2,300.00	10.00	242.04	2,286.82	-77.43	-145.86	-55.21	0.00	0.00	0.00
2,400.00	10.00	242.04	2,385.30	-85.57	-161.20	-61.02	0.00	0.00	0.00
2,500.00	10.00	242.04	2,483.78	-93.72	-176.55	-66.83	0.00	0.00	0.00
2,600.00	10.00	242.04	2,582.26	-101.86	-191.89	-72.64	0.00	0.00	0.00
2,700.00	10.00	242.04	2,680.74	-110.01	-207.24	-78.45	0.00	0.00	0.00
2,800.00	10.00	242.04	2,779.22	-118.15	-222.58	-84.26	0.00	0.00	0.00
2,900.00	10.00	242.04	2,877.70	-126.30	-237.93	-90.07	0.00	0.00	0.00
3,000.00	10.00	242.04	2,976.18	-134.44	-253.27	-95.87	0.00	0.00	0.00
3,100.00	10.00	242.04	3,074.66	-142.59	-268.62	-101.68	0.00	0.00	0.00
3,200.00	10.00	242.04	3,173.14	-150.73	-283.96	-107.49	0.00	0.00	0.00
3,300.00	10.00	242.04	3,271.61	-158.88	-299.31	-113.30	0.00	0.00	0.00
3,400.00	10.00	242.04	3,370.09	-167.03	-314.65	-119.11	0.00	0.00	0.00
3,500.00	10.00	242.04	3,468.57	-175.17	-330.00	-124.92	0.00	0.00	0.00
3,600.00	10.00	242.04	3,567.05	-183.32	-345.34	-130.73	0.00	0.00	0.00
3,700.00	10.00	242.04	3,665.53	-191.46	-360.69	-136.54	0.00	0.00	0.00
3,800.00	10.00	242.04	3,764.01	-199.61	-376.03	-142.34	0.00	0.00	0.00
3,900.00	10.00	242.04	3,862.49	-207.75	-391.38	-148.15	0.00	0.00	0.00
3,905.59	10.00	242.04	3,868.00	-208.21	-392.23	-148.48	0.00	0.00	0.00
Parkman									
4,000.00	10.00	242.04	3,960.97	-215.90	-406.72	-153.96	0.00	0.00	0.00
4,100.00	10.00	242.04	4,059.45	-224.04	-422.07	-159.77	0.00	0.00	0.00
4,200.00	10.00	242.04	4,157.93	-232.19	-437.41	-165.58	0.00	0.00	0.00
4,295.52	10.00	242.04	4,252.00	-239.97	-452.07	-171.13	0.00	0.00	0.00

Database:	EDM5000-RobertS-Local	Local Co-ordinate Reference:	Well WIRKNER-VANCE 30N-36HZ
Company:	US ROCKIES REGION PLANNING	TVD Reference:	GL 4822 & KB 17 @ 4839.00ft (ASSUMED)
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	GL 4822 & KB 17 @ 4839.00ft (ASSUMED)
Site:	WIRKNER-VANCE 3C-36HZ PAD	North Reference:	True
Well:	WIRKNER-VANCE 30N-36HZ	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)
Sussex									
4,300.00	10.00	242.04	4,256.41	-240.34	-452.76	-171.39	0.00	0.00	0.00
4,400.00	10.00	242.04	4,354.89	-248.48	-468.10	-177.20	0.00	0.00	0.00
4,500.00	10.00	242.04	4,453.37	-256.63	-483.44	-183.01	0.00	0.00	0.00
4,600.00	10.00	242.04	4,551.85	-264.77	-498.79	-188.81	0.00	0.00	0.00
4,700.00	10.00	242.04	4,650.33	-272.92	-514.13	-194.62	0.00	0.00	0.00
4,800.00	10.00	242.04	4,748.80	-281.06	-529.48	-200.43	0.00	0.00	0.00
4,900.00	10.00	242.04	4,847.28	-289.21	-544.82	-206.24	0.00	0.00	0.00
5,000.00	10.00	242.04	4,945.76	-297.35	-560.17	-212.05	0.00	0.00	0.00
5,100.00	10.00	242.04	5,044.24	-305.50	-575.51	-217.86	0.00	0.00	0.00
5,200.00	10.00	242.04	5,142.72	-313.65	-590.86	-223.67	0.00	0.00	0.00
5,300.00	10.00	242.04	5,241.20	-321.79	-606.20	-229.48	0.00	0.00	0.00
5,395.56	10.00	242.04	5,335.30	-329.57	-620.87	-235.03	0.00	0.00	0.00
Start Drop -2.00									
5,400.00	9.92	242.04	5,339.68	-329.94	-621.55	-235.28	2.00	-2.00	0.00
5,500.00	7.92	242.04	5,438.47	-337.20	-635.23	-240.47	2.00	-2.00	0.00
5,600.00	5.92	242.04	5,537.74	-342.85	-645.87	-244.49	2.00	-2.00	0.00
5,700.00	3.92	242.04	5,637.36	-346.86	-653.44	-247.36	2.00	-2.00	0.00
5,800.00	1.92	242.04	5,737.23	-349.25	-657.93	-249.06	2.00	-2.00	0.00
5,895.79	0.00	0.00	5,833.00	-350.00	-659.35	-249.59	2.00	-2.00	0.00
Start 734.04 hold at 5895.79 MD									
5,900.00	0.00	0.00	5,837.21	-350.00	-659.35	-249.59	0.00	0.00	0.00
6,000.00	0.00	0.00	5,937.21	-350.00	-659.35	-249.59	0.00	0.00	0.00
6,100.00	0.00	0.00	6,037.21	-350.00	-659.35	-249.59	0.00	0.00	0.00
6,200.00	0.00	0.00	6,137.21	-350.00	-659.35	-249.59	0.00	0.00	0.00
6,300.00	0.00	0.00	6,237.21	-350.00	-659.35	-249.59	0.00	0.00	0.00
6,400.00	0.00	0.00	6,337.21	-350.00	-659.35	-249.59	0.00	0.00	0.00
6,500.00	0.00	0.00	6,437.21	-350.00	-659.35	-249.59	0.00	0.00	0.00
6,600.00	0.00	0.00	6,537.21	-350.00	-659.35	-249.59	0.00	0.00	0.00
6,629.83	0.00	0.00	6,567.04	-350.00	-659.35	-249.59	0.00	0.00	0.00
Start DLS 10.00 TFO 360.00									
6,700.00	7.02	360.00	6,637.04	-345.71	-659.35	-245.35	10.00	10.00	0.00
6,800.00	17.02	360.00	6,734.72	-324.91	-659.35	-224.78	10.00	10.00	0.00
6,900.00	27.02	360.00	6,827.31	-287.47	-659.35	-187.74	10.00	10.00	0.00
7,000.00	37.02	360.00	6,911.99	-234.52	-659.35	-135.36	10.00	10.00	0.00
7,100.00	47.02	360.00	6,986.19	-167.67	-659.35	-69.24	10.00	10.00	0.00
7,133.03	50.32	360.00	7,008.00	-142.88	-659.35	-44.71	10.00	10.00	0.00
Sharon Springs									
7,200.00	57.02	360.00	7,047.66	-88.95	-659.35	8.63	10.00	10.00	0.00
7,276.73	64.69	360.00	7,085.00	-21.99	-659.35	74.88	10.00	10.00	0.00
Niobrara A									
7,300.00	67.02	360.00	7,094.52	-0.76	-659.35	95.88	10.00	10.00	0.00
7,340.50	71.07	360.00	7,109.00	37.05	-659.35	133.28	10.00	10.00	0.00
Niobrara B									
7,400.00	77.02	360.00	7,125.35	94.24	-659.35	189.85	10.00	10.00	0.00
7,500.00	87.02	360.00	7,139.22	193.14	-659.35	287.68	10.00	10.00	0.00
7,530.64	90.08	360.00	7,140.00	223.77	-659.35	317.98	10.00	10.00	0.00
Start 4226.71 hold at 7530.64 MD - 7" 636' FSL 261' FWL									
7,600.00	90.08	360.00	7,139.90	293.13	-659.35	386.59	0.00	0.00	0.00
7,700.00	90.08	360.00	7,139.76	393.13	-659.35	485.51	0.00	0.00	0.00
7,800.00	90.08	360.00	7,139.62	493.13	-659.35	584.43	0.00	0.00	0.00
7,900.00	90.08	360.00	7,139.47	593.13	-659.35	683.35	0.00	0.00	0.00
8,000.00	90.08	360.00	7,139.33	693.13	-659.35	782.27	0.00	0.00	0.00

Database:	EDM5000-RobertS-Local	Local Co-ordinate Reference:	Well WIRKNER-VANCE 30N-36HZ
Company:	US ROCKIES REGION PLANNING	TVD Reference:	GL 4822 & KB 17 @ 4839.00ft (ASSUMED)
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	GL 4822 & KB 17 @ 4839.00ft (ASSUMED)
Site:	WIRKNER-VANCE 3C-36HZ PAD	North Reference:	True
Well:	WIRKNER-VANCE 30N-36HZ	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)
8,100.00	90.08	360.00	7,139.19	793.13	-659.35	881.19	0.00	0.00	0.00
8,200.00	90.08	360.00	7,139.05	893.13	-659.35	980.11	0.00	0.00	0.00
8,300.00	90.08	360.00	7,138.91	993.13	-659.35	1,079.03	0.00	0.00	0.00
8,400.00	90.08	360.00	7,138.76	1,093.13	-659.35	1,177.95	0.00	0.00	0.00
8,500.00	90.08	360.00	7,138.62	1,193.13	-659.35	1,276.87	0.00	0.00	0.00
8,600.00	90.08	360.00	7,138.48	1,293.13	-659.35	1,375.79	0.00	0.00	0.00
8,700.00	90.08	360.00	7,138.34	1,393.13	-659.35	1,474.71	0.00	0.00	0.00
8,800.00	90.08	360.00	7,138.20	1,493.13	-659.35	1,573.63	0.00	0.00	0.00
8,900.00	90.08	360.00	7,138.05	1,593.13	-659.35	1,672.55	0.00	0.00	0.00
9,000.00	90.08	360.00	7,137.91	1,693.13	-659.35	1,771.47	0.00	0.00	0.00
9,100.00	90.08	360.00	7,137.77	1,793.13	-659.35	1,870.39	0.00	0.00	0.00
9,200.00	90.08	360.00	7,137.63	1,893.13	-659.35	1,969.31	0.00	0.00	0.00
9,300.00	90.08	360.00	7,137.49	1,993.13	-659.35	2,068.23	0.00	0.00	0.00
9,400.00	90.08	360.00	7,137.34	2,093.13	-659.35	2,167.16	0.00	0.00	0.00
9,500.00	90.08	360.00	7,137.20	2,193.13	-659.35	2,266.08	0.00	0.00	0.00
9,600.00	90.08	360.00	7,137.06	2,293.13	-659.35	2,365.00	0.00	0.00	0.00
9,700.00	90.08	360.00	7,136.92	2,393.13	-659.35	2,463.92	0.00	0.00	0.00
9,800.00	90.08	360.00	7,136.78	2,493.13	-659.35	2,562.84	0.00	0.00	0.00
9,900.00	90.08	360.00	7,136.64	2,593.13	-659.35	2,661.76	0.00	0.00	0.00
10,000.00	90.08	360.00	7,136.49	2,693.13	-659.35	2,760.68	0.00	0.00	0.00
10,100.00	90.08	360.00	7,136.35	2,793.13	-659.35	2,859.60	0.00	0.00	0.00
10,200.00	90.08	360.00	7,136.21	2,893.13	-659.35	2,958.52	0.00	0.00	0.00
10,300.00	90.08	360.00	7,136.07	2,993.13	-659.35	3,057.44	0.00	0.00	0.00
10,400.00	90.08	360.00	7,135.93	3,093.13	-659.35	3,156.36	0.00	0.00	0.00
10,500.00	90.08	360.00	7,135.78	3,193.13	-659.35	3,255.28	0.00	0.00	0.00
10,600.00	90.08	360.00	7,135.64	3,293.13	-659.35	3,354.20	0.00	0.00	0.00
10,700.00	90.08	360.00	7,135.50	3,393.12	-659.35	3,453.12	0.00	0.00	0.00
10,800.00	90.08	360.00	7,135.36	3,493.12	-659.35	3,552.04	0.00	0.00	0.00
10,900.00	90.08	360.00	7,135.22	3,593.12	-659.35	3,650.96	0.00	0.00	0.00
11,000.00	90.08	360.00	7,135.07	3,693.12	-659.35	3,749.88	0.00	0.00	0.00
11,100.00	90.08	360.00	7,134.93	3,793.12	-659.35	3,848.80	0.00	0.00	0.00
11,200.00	90.08	360.00	7,134.79	3,893.12	-659.35	3,947.72	0.00	0.00	0.00
11,300.00	90.08	360.00	7,134.65	3,993.12	-659.35	4,046.64	0.00	0.00	0.00
11,400.00	90.08	360.00	7,134.51	4,093.12	-659.35	4,145.56	0.00	0.00	0.00
11,500.00	90.08	360.00	7,134.37	4,193.12	-659.35	4,244.48	0.00	0.00	0.00
11,600.00	90.08	360.00	7,134.22	4,293.12	-659.35	4,343.40	0.00	0.00	0.00
11,700.00	90.08	360.00	7,134.08	4,393.12	-659.35	4,442.32	0.00	0.00	0.00
11,757.35	90.08	360.00	7,134.00	4,450.47	-659.35	4,499.05	0.00	0.00	0.00
TD at 11757.35 - PBHL_WIRKNER-VANCE 30N-36HZ(460' FNL 390' FWL)									

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_WIRKNER-VANC	0.00	0.00	7,134.00	4,450.47	-659.35	1,311,842.07	3,182,326.55	40.1875610	-104.8473900
- plan hits target center									
- Point									

Database:	EDM5000-RobertS-Local	Local Co-ordinate Reference:	Well WIRKNER-VANCE 30N-36HZ
Company:	US ROCKIES REGION PLANNING	TVD Reference:	GL 4822 & KB 17 @ 4839.00ft (ASSUMED)
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	GL 4822 & KB 17 @ 4839.00ft (ASSUMED)
Site:	WIRKNER-VANCE 3C-36HZ PAD	North Reference:	True
Well:	WIRKNER-VANCE 30N-36HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	PLAN #1 PRELIMINARY		

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)	
917.00	917.00	9 5/8"	9.625	12.250	
7,530.64	7,140.00	7" 636' FSL 261' FWL	7.000	7.500	

Formations					
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
867.00	867.00	Fox Hills Base			
3,905.59	3,868.00	Parkman			
4,295.52	4,252.00	Sussex			
7,133.03	7,008.00	Sharon Springs			
7,276.73	7,085.00	Niobrara A			
7,340.50	7,109.00	Niobrara B			

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates			
		+N/-S (ft)	+E/-W (ft)	Comment	
1,100.00	1,100.00	0.00	0.00	Start Build 2.00	
1,600.23	1,597.70	-20.43	-38.48	Start 3795.32 hold at 1600.23 MD	
5,395.56	5,335.30	-329.57	-620.87	Start Drop -2.00	
5,895.79	5,833.00	-350.00	-659.35	Start 734.04 hold at 5895.79 MD	
6,629.83	6,567.04	-350.00	-659.35	Start DLS 10.00 TFO 360.00	
7,530.64	7,140.00	223.77	-659.35	Start 4226.71 hold at 7530.64 MD	
11,757.35	7,134.00	4,450.47	-659.35	TD at 11757.35	