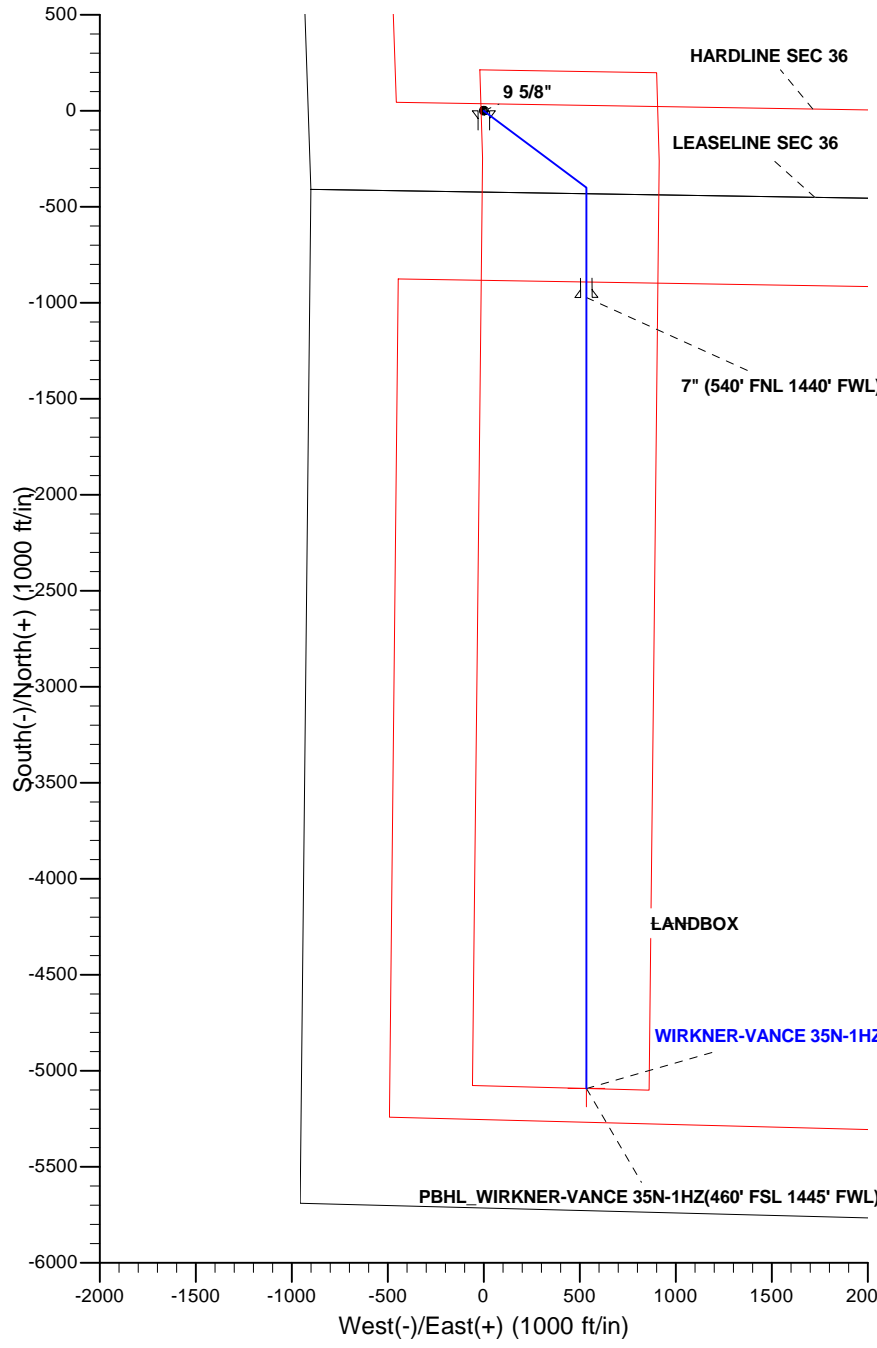
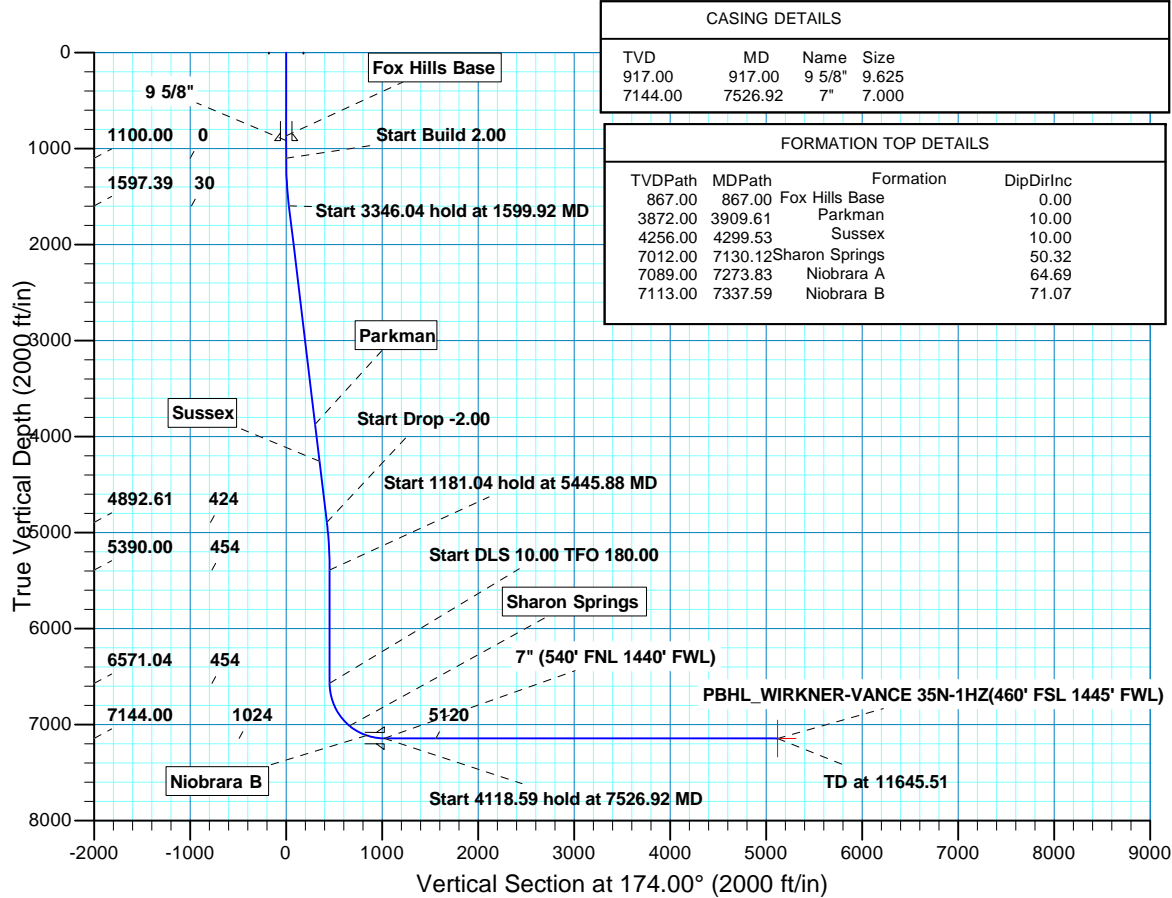


WELL DETAILS: WIRKNER-VANCE 35N-1HZ									
GL 4822 & KB 17 @ 4839.00ft (ASSUMED)									
+N-/S	+E-/W	Northing	Easting	Latitude	Longitude				
0.00	0.00	1307221.44	3182978.13	40.1748639	-104.8451800				
SECTION DETAILS									
MD	Inc	Azi	TVD	+N-/S	+E-/W	Dleg	TFace	Vsect	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
1100.00	0.00	0.00	1100.00	0.00	0.00	0.00	0.00	0.00	
1599.92	10.00	126.79	1597.39	-26.05	34.84	2.00	126.79	29.55	
4945.96	10.00	126.79	4892.61	-373.95	500.11	0.00	0.00	424.15	
5445.88	0.00	0.00	5390.00	-400.00	534.95	2.00	180.00	453.70	
6626.92	0.00	0.00	6571.04	-400.00	534.95	0.00	0.00	453.70	
7526.92	90.00	180.00	7144.00	-972.96	534.95	10.00	180.00	1023.52	
11645.51	90.00	180.00	7144.00	-5091.54	534.95	0.00	0.005119.57		PBHL_WIRKNER-VANCE 35N-1HZ(460' FSL 1445' FWL)
DESIGN TARGET DETAILS									
Name	TVD	+N-/S	+E-/W	Northing	Easting	Latitude	Longitude	Shape	
PBHL	7144.00	-5091.54	534.95	1302134.00	3183550.66	40.1608870	-104.8432660	Point	
- plan hits target center									





# Scientific Drilling

## **US ROCKIES REGION PLANNING**

**COLORADO NORTHERN ZONE - 83**

**WIRKNER-VANCE 3C-36HZ PAD**

**WIRKNER-VANCE 35N-1HZ**

**OH**

**Plan: PLAN #1 PRELIMINARY**

## **Standard Planning Report**

**06 August, 2013**

<b>Database:</b>	EDM5000-RobertS-Local	<b>Local Co-ordinate Reference:</b>	Well WIRKNER-VANCE 35N-1HZ
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	GL 4822 & KB 17 @ 4839.00ft (ASSUMED)
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>MD Reference:</b>	GL 4822 & KB 17 @ 4839.00ft (ASSUMED)
<b>Site:</b>	WIRKNER-VANCE 3C-36HZ PAD	<b>North Reference:</b>	True
<b>Well:</b>	WIRKNER-VANCE 35N-1HZ	<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>	WIRKNER-VANCE 3C-36HZ PAD, SECTION 36 T3N R67W				
<b>Site Position:</b>	<b>Northing:</b>	1,307,250.94 usft	<b>Latitude:</b>	40.1749450	
<b>From:</b>	Lat/Long	<b>Easting:</b>	3,182,974.56 usft	<b>Longitude:</b>	-104.8451920
<b>Position Uncertainty:</b>	0.00 ft	<b>Slot Radius:</b>	13.200 in	<b>Grid Convergence:</b>	0.42 °

<b>Well</b>	WIRKNER-VANCE 35N-1HZ, 247 FSL 866 FWL					
<b>Well Position</b>	<b>+N/-S</b>	-29.53 ft	<b>Northing:</b>	1,307,221.44 usft	<b>Latitude:</b>	40.1748640
	<b>+E/-W</b>	3.35 ft	<b>Easting:</b>	3,182,978.13 usft	<b>Longitude:</b>	-104.8451800
<b>Position Uncertainty</b>		0.00 ft	<b>Wellhead Elevation:</b>		<b>Ground Level:</b>	4,822.00 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	2013/06/18	8.64	66.78	52,727

<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	174.00

<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	
1,100.00	0.00	0.00	1,100.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,599.92	10.00	126.79	1,597.39	-26.05	34.84	2.00	2.00	0.00	126.79	
4,945.96	10.00	126.79	4,892.61	-373.95	500.11	0.00	0.00	0.00	0.00	
5,445.88	0.00	0.00	5,390.00	-400.00	534.95	2.00	-2.00	0.00	180.00	
6,626.92	0.00	0.00	6,571.04	-400.00	534.95	0.00	0.00	0.00	0.00	
7,526.92	90.00	180.00	7,144.00	-972.96	534.95	10.00	10.00	20.00	180.00	
11,645.51	90.00	180.00	7,144.00	-5,091.54	534.95	0.00	0.00	0.00	0.00	PBHL_WIRKNER-VA

<b>Database:</b>	EDM5000-RobertS-Local	<b>Local Co-ordinate Reference:</b>	Well WIRKNER-VANCE 35N-1HZ
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	GL 4822 & KB 17 @ 4839.00ft (ASSUMED)
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>MD Reference:</b>	GL 4822 & KB 17 @ 4839.00ft (ASSUMED)
<b>Site:</b>	WIRKNER-VANCE 3C-36HZ PAD	<b>North Reference:</b>	True
<b>Well:</b>	WIRKNER-VANCE 35N-1HZ	<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	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
867.00	0.00	0.00	867.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Fox Hills Base</b>										
900.00	0.00	0.00	900.00	0.00	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	0.00
<b>9 5/8"</b>										
1,000.00	0.00	0.00	1,000.00	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	0.00
<b>Start Build 2.00</b>										
1,200.00	2.00	126.79	1,199.98	-1.05	1.40	1.19	2.00	2.00	0.00	0.00
1,300.00	4.00	126.79	1,299.84	-4.18	5.59	4.74	2.00	2.00	0.00	0.00
1,400.00	6.00	126.79	1,399.45	-9.40	12.57	10.66	2.00	2.00	0.00	0.00
1,500.00	8.00	126.79	1,498.70	-16.70	22.33	18.94	2.00	2.00	0.00	0.00
1,599.92	10.00	126.79	1,597.39	-26.05	34.84	29.55	2.00	2.00	0.00	0.00
<b>Start 3346.04 hold at 1599.92 MD</b>										
1,600.00	10.00	126.79	1,597.47	-26.06	34.86	29.56	0.00	0.00	0.00	0.00
1,700.00	10.00	126.79	1,695.95	-36.46	48.76	41.36	0.00	0.00	0.00	0.00
1,800.00	10.00	126.79	1,794.43	-46.86	62.67	53.15	0.00	0.00	0.00	0.00
1,900.00	10.00	126.79	1,892.91	-57.25	76.57	64.94	0.00	0.00	0.00	0.00
2,000.00	10.00	126.79	1,991.39	-67.65	90.48	76.73	0.00	0.00	0.00	0.00
2,100.00	10.00	126.79	2,089.87	-78.05	104.38	88.53	0.00	0.00	0.00	0.00
2,200.00	10.00	126.79	2,188.35	-88.45	118.28	100.32	0.00	0.00	0.00	0.00
2,300.00	10.00	126.79	2,286.83	-98.84	132.19	112.11	0.00	0.00	0.00	0.00
2,400.00	10.00	126.79	2,385.32	-109.24	146.09	123.91	0.00	0.00	0.00	0.00
2,500.00	10.00	126.79	2,483.80	-119.64	160.00	135.70	0.00	0.00	0.00	0.00
2,600.00	10.00	126.79	2,582.28	-130.03	173.90	147.49	0.00	0.00	0.00	0.00
2,700.00	10.00	126.79	2,680.76	-140.43	187.81	159.28	0.00	0.00	0.00	0.00
2,800.00	10.00	126.79	2,779.24	-150.83	201.71	171.08	0.00	0.00	0.00	0.00
2,900.00	10.00	126.79	2,877.72	-161.22	215.62	182.87	0.00	0.00	0.00	0.00
3,000.00	10.00	126.79	2,976.20	-171.62	229.52	194.66	0.00	0.00	0.00	0.00
3,100.00	10.00	126.79	3,074.68	-182.02	243.43	206.46	0.00	0.00	0.00	0.00
3,200.00	10.00	126.79	3,173.17	-192.42	257.33	218.25	0.00	0.00	0.00	0.00
3,300.00	10.00	126.79	3,271.65	-202.81	271.24	230.04	0.00	0.00	0.00	0.00
3,400.00	10.00	126.79	3,370.13	-213.21	285.14	241.84	0.00	0.00	0.00	0.00
3,500.00	10.00	126.79	3,468.61	-223.61	299.05	253.63	0.00	0.00	0.00	0.00
3,600.00	10.00	126.79	3,567.09	-234.00	312.95	265.42	0.00	0.00	0.00	0.00
3,700.00	10.00	126.79	3,665.57	-244.40	326.86	277.21	0.00	0.00	0.00	0.00
3,800.00	10.00	126.79	3,764.05	-254.80	340.76	289.01	0.00	0.00	0.00	0.00
3,900.00	10.00	126.79	3,862.53	-265.20	354.67	300.80	0.00	0.00	0.00	0.00
3,909.61	10.00	126.79	3,872.00	-266.19	356.00	301.93	0.00	0.00	0.00	0.00
<b>Parkman</b>										
4,000.00	10.00	126.79	3,961.02	-275.59	368.57	312.59	0.00	0.00	0.00	0.00
4,100.00	10.00	126.79	4,059.50	-285.99	382.48	324.39	0.00	0.00	0.00	0.00
4,200.00	10.00	126.79	4,157.98	-296.39	396.38	336.18	0.00	0.00	0.00	0.00
4,299.53	10.00	126.79	4,256.00	-306.74	410.22	347.92	0.00	0.00	0.00	0.00

<b>Database:</b>	EDM5000-RobertS-Local	<b>Local Co-ordinate Reference:</b>	Well WIRKNER-VANCE 35N-1HZ
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	GL 4822 & KB 17 @ 4839.00ft (ASSUMED)
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>MD Reference:</b>	GL 4822 & KB 17 @ 4839.00ft (ASSUMED)
<b>Site:</b>	WIRKNER-VANCE 3C-36HZ PAD	<b>North Reference:</b>	True
<b>Well:</b>	WIRKNER-VANCE 35N-1HZ	<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)
<b>Sussex</b>									
4,300.00	10.00	126.79	4,256.46	-306.78	410.29	347.97	0.00	0.00	0.00
4,400.00	10.00	126.79	4,354.94	-317.18	424.19	359.77	0.00	0.00	0.00
4,500.00	10.00	126.79	4,453.42	-327.58	438.09	371.56	0.00	0.00	0.00
4,600.00	10.00	126.79	4,551.90	-337.98	452.00	383.35	0.00	0.00	0.00
4,700.00	10.00	126.79	4,650.38	-348.37	465.90	395.14	0.00	0.00	0.00
4,800.00	10.00	126.79	4,748.87	-358.77	479.81	406.94	0.00	0.00	0.00
4,900.00	10.00	126.79	4,847.35	-369.17	493.71	418.73	0.00	0.00	0.00
4,945.96	10.00	126.79	4,892.61	-373.95	500.11	424.15	0.00	0.00	0.00
<b>Start Drop -2.00</b>									
5,000.00	8.92	126.79	4,945.91	-379.26	507.22	430.18	2.00	-2.00	0.00
5,100.00	6.92	126.79	5,044.96	-387.51	518.25	439.54	2.00	-2.00	0.00
5,200.00	4.92	126.79	5,144.42	-393.68	526.50	446.54	2.00	-2.00	0.00
5,300.00	2.92	126.79	5,244.18	-397.78	531.98	451.18	2.00	-2.00	0.00
5,400.00	0.92	126.79	5,344.12	-399.78	534.66	453.45	2.00	-2.00	0.00
5,445.88	0.00	0.00	5,390.00	-400.00	534.95	453.70	2.00	-2.00	0.00
<b>Start 1181.04 hold at 5445.88 MD</b>									
5,500.00	0.00	0.00	5,444.12	-400.00	534.95	453.70	0.00	0.00	0.00
5,600.00	0.00	0.00	5,544.12	-400.00	534.95	453.70	0.00	0.00	0.00
5,700.00	0.00	0.00	5,644.12	-400.00	534.95	453.70	0.00	0.00	0.00
5,800.00	0.00	0.00	5,744.12	-400.00	534.95	453.70	0.00	0.00	0.00
5,900.00	0.00	0.00	5,844.12	-400.00	534.95	453.70	0.00	0.00	0.00
6,000.00	0.00	0.00	5,944.12	-400.00	534.95	453.70	0.00	0.00	0.00
6,100.00	0.00	0.00	6,044.12	-400.00	534.95	453.70	0.00	0.00	0.00
6,200.00	0.00	0.00	6,144.12	-400.00	534.95	453.70	0.00	0.00	0.00
6,300.00	0.00	0.00	6,244.12	-400.00	534.95	453.70	0.00	0.00	0.00
6,400.00	0.00	0.00	6,344.12	-400.00	534.95	453.70	0.00	0.00	0.00
6,500.00	0.00	0.00	6,444.12	-400.00	534.95	453.70	0.00	0.00	0.00
6,600.00	0.00	0.00	6,544.12	-400.00	534.95	453.70	0.00	0.00	0.00
6,626.92	0.00	0.00	6,571.04	-400.00	534.95	453.70	0.00	0.00	0.00
<b>Start DLS 10.00 TFO 180.00</b>									
6,700.00	7.31	180.00	6,643.92	-404.65	534.95	458.33	10.00	10.00	0.00
6,800.00	17.31	180.00	6,741.50	-425.94	534.95	479.50	10.00	10.00	0.00
6,900.00	27.31	180.00	6,833.89	-463.85	534.95	517.21	10.00	10.00	0.00
7,000.00	37.31	180.00	6,918.31	-517.23	534.95	570.29	10.00	10.00	0.00
7,100.00	47.31	180.00	6,992.17	-584.46	534.95	637.15	10.00	10.00	0.00
7,130.12	50.32	180.00	7,012.00	-607.12	534.95	659.69	10.00	10.00	0.00
<b>Sharon Springs</b>									
7,200.00	57.31	180.00	7,053.23	-663.49	534.95	715.75	10.00	10.00	0.00
7,273.83	64.69	180.00	7,089.00	-728.01	534.95	779.92	10.00	10.00	0.00
<b>Niobrara A</b>									
7,300.00	67.31	180.00	7,099.64	-751.92	534.95	803.70	10.00	10.00	0.00
7,337.59	71.07	180.00	7,113.00	-787.05	534.95	838.64	10.00	10.00	0.00
<b>Niobrara B</b>									
7,400.00	77.31	180.00	7,130.00	-847.07	534.95	898.33	10.00	10.00	0.00
7,500.00	87.31	180.00	7,143.37	-946.04	534.95	996.76	10.00	10.00	0.00
7,526.92	90.00	180.00	7,144.00	-972.95	534.95	1,023.52	10.00	10.00	0.00
<b>Start 4118.59 hold at 7526.92 MD - 7" (540' FNL 1440' FWL)</b>									
7,600.00	90.00	180.00	7,144.00	-1,046.03	534.95	1,096.20	0.00	0.00	0.00
7,700.00	90.00	180.00	7,144.00	-1,146.03	534.95	1,195.65	0.00	0.00	0.00
7,800.00	90.00	180.00	7,144.00	-1,246.03	534.95	1,295.11	0.00	0.00	0.00
7,900.00	90.00	180.00	7,144.00	-1,346.03	534.95	1,394.56	0.00	0.00	0.00
8,000.00	90.00	180.00	7,144.00	-1,446.03	534.95	1,494.01	0.00	0.00	0.00

<b>Database:</b>	EDM5000-RobertS-Local	<b>Local Co-ordinate Reference:</b>	Well WIRKNER-VANCE 35N-1HZ
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	GL 4822 & KB 17 @ 4839.00ft (ASSUMED)
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>MD Reference:</b>	GL 4822 & KB 17 @ 4839.00ft (ASSUMED)
<b>Site:</b>	WIRKNER-VANCE 3C-36HZ PAD	<b>North Reference:</b>	True
<b>Well:</b>	WIRKNER-VANCE 35N-1HZ	<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)	
8,100.00	90.00	180.00	7,144.00	-1,546.03	534.95	1,593.46	0.00	0.00	0.00	
8,200.00	90.00	180.00	7,144.00	-1,646.03	534.95	1,692.92	0.00	0.00	0.00	
8,300.00	90.00	180.00	7,144.00	-1,746.03	534.95	1,792.37	0.00	0.00	0.00	
8,400.00	90.00	180.00	7,144.00	-1,846.03	534.95	1,891.82	0.00	0.00	0.00	
8,500.00	90.00	180.00	7,144.00	-1,946.03	534.95	1,991.27	0.00	0.00	0.00	
8,600.00	90.00	180.00	7,144.00	-2,046.03	534.95	2,090.73	0.00	0.00	0.00	
8,700.00	90.00	180.00	7,144.00	-2,146.03	534.95	2,190.18	0.00	0.00	0.00	
8,800.00	90.00	180.00	7,144.00	-2,246.03	534.95	2,289.63	0.00	0.00	0.00	
8,900.00	90.00	180.00	7,144.00	-2,346.03	534.95	2,389.09	0.00	0.00	0.00	
9,000.00	90.00	180.00	7,144.00	-2,446.03	534.95	2,488.54	0.00	0.00	0.00	
9,100.00	90.00	180.00	7,144.00	-2,546.03	534.95	2,587.99	0.00	0.00	0.00	
9,200.00	90.00	180.00	7,144.00	-2,646.03	534.95	2,687.44	0.00	0.00	0.00	
9,300.00	90.00	180.00	7,144.00	-2,746.03	534.95	2,786.90	0.00	0.00	0.00	
9,400.00	90.00	180.00	7,144.00	-2,846.03	534.95	2,886.35	0.00	0.00	0.00	
9,500.00	90.00	180.00	7,144.00	-2,946.03	534.95	2,985.80	0.00	0.00	0.00	
9,600.00	90.00	180.00	7,144.00	-3,046.03	534.95	3,085.25	0.00	0.00	0.00	
9,700.00	90.00	180.00	7,144.00	-3,146.03	534.95	3,184.71	0.00	0.00	0.00	
9,800.00	90.00	180.00	7,144.00	-3,246.03	534.95	3,284.16	0.00	0.00	0.00	
9,900.00	90.00	180.00	7,144.00	-3,346.03	534.95	3,383.61	0.00	0.00	0.00	
10,000.00	90.00	180.00	7,144.00	-3,446.03	534.95	3,483.06	0.00	0.00	0.00	
10,100.00	90.00	180.00	7,144.00	-3,546.03	534.95	3,582.52	0.00	0.00	0.00	
10,200.00	90.00	180.00	7,144.00	-3,646.03	534.95	3,681.97	0.00	0.00	0.00	
10,300.00	90.00	180.00	7,144.00	-3,746.03	534.95	3,781.42	0.00	0.00	0.00	
10,400.00	90.00	180.00	7,144.00	-3,846.03	534.95	3,880.88	0.00	0.00	0.00	
10,500.00	90.00	180.00	7,144.00	-3,946.03	534.95	3,980.33	0.00	0.00	0.00	
10,600.00	90.00	180.00	7,144.00	-4,046.03	534.95	4,079.78	0.00	0.00	0.00	
10,700.00	90.00	180.00	7,144.00	-4,146.03	534.95	4,179.23	0.00	0.00	0.00	
10,800.00	90.00	180.00	7,144.00	-4,246.03	534.95	4,278.69	0.00	0.00	0.00	
10,900.00	90.00	180.00	7,144.00	-4,346.03	534.95	4,378.14	0.00	0.00	0.00	
11,000.00	90.00	180.00	7,144.00	-4,446.03	534.95	4,477.59	0.00	0.00	0.00	
11,100.00	90.00	180.00	7,144.00	-4,546.03	534.95	4,577.04	0.00	0.00	0.00	
11,200.00	90.00	180.00	7,144.00	-4,646.03	534.95	4,676.50	0.00	0.00	0.00	
11,300.00	90.00	180.00	7,144.00	-4,746.03	534.95	4,775.95	0.00	0.00	0.00	
11,400.00	90.00	180.00	7,144.00	-4,846.03	534.95	4,875.40	0.00	0.00	0.00	
11,500.00	90.00	180.00	7,144.00	-4,946.03	534.95	4,974.86	0.00	0.00	0.00	
11,600.00	90.00	180.00	7,144.00	-5,046.03	534.95	5,074.31	0.00	0.00	0.00	
11,645.51	90.00	180.00	7,144.00	-5,091.54	534.95	5,119.57	0.00	0.00	0.00	
<b>PBHL_WIRKNER-VANCE 35N-1HZ(460' FSL 1445' FWL)</b>										

Design Targets										
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude	
PBHL_WIRKNER-VANC - hit/miss target - Shape - Point	0.00	0.00	7,144.00	-5,091.54	534.95	1,302,133.99	3,183,550.66	40.1608870	-104.8432660	

<b>Database:</b>	EDM5000-RobertS-Local	<b>Local Co-ordinate Reference:</b>	Well WIRKNER-VANCE 35N-1HZ
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	GL 4822 & KB 17 @ 4839.00ft (ASSUMED)
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>MD Reference:</b>	GL 4822 & KB 17 @ 4839.00ft (ASSUMED)
<b>Site:</b>	WIRKNER-VANCE 3C-36HZ PAD	<b>North Reference:</b>	True
<b>Well:</b>	WIRKNER-VANCE 35N-1HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	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	
7,526.92	7,144.00	7" (540' FNL 1440' FWL)		7.000	7.500	

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
867.00	868.00	Fox Hills Base				
3,909.61	3,873.00	Parkman				
4,299.53	4,257.00	Sussex				
7,130.12	7,013.00	Sharon Springs				
7,273.83	7,090.00	Niobrara A				
7,337.59	7,114.00	Niobrara B				

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment	
		+N/-S (ft)	+E/-W (ft)		
1,100.00	1,100.00	0.00	0.00	Start Build 2.00	
1,599.92	1,597.39	-26.05	34.84	Start 3346.04 hold at 1599.92 MD	
4,945.96	4,892.61	-373.95	500.11	Start Drop -2.00	
5,445.88	5,390.00	-400.00	534.95	Start 1181.04 hold at 5445.88 MD	
6,626.92	6,571.04	-400.00	534.95	Start DLS 10.00 TFO 180.00	
7,526.92	7,144.00	-972.96	534.95	Start 4118.59 hold at 7526.92 MD	
11,645.51	7,144.00	-5,091.54	534.95	TD at 11645.51	