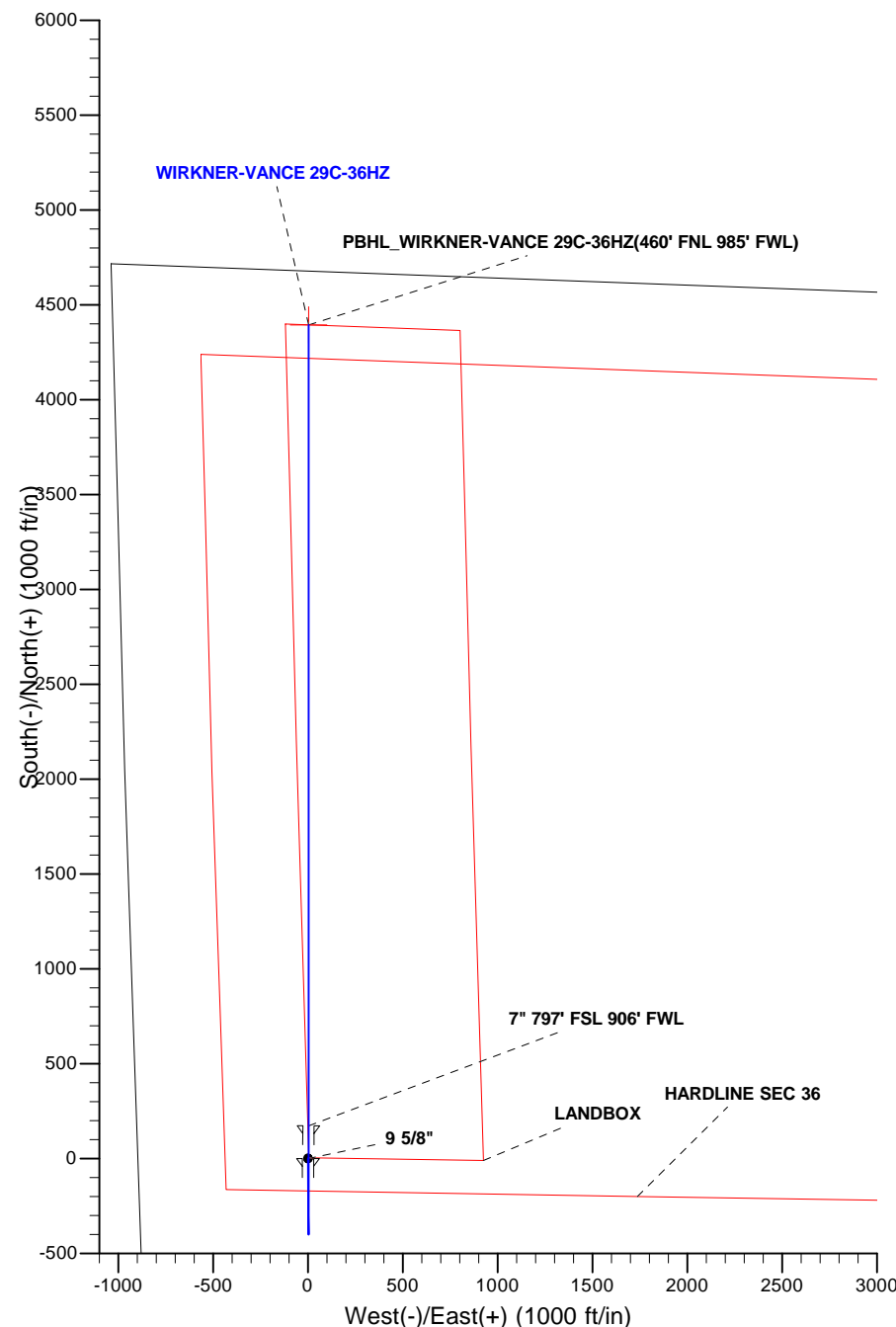
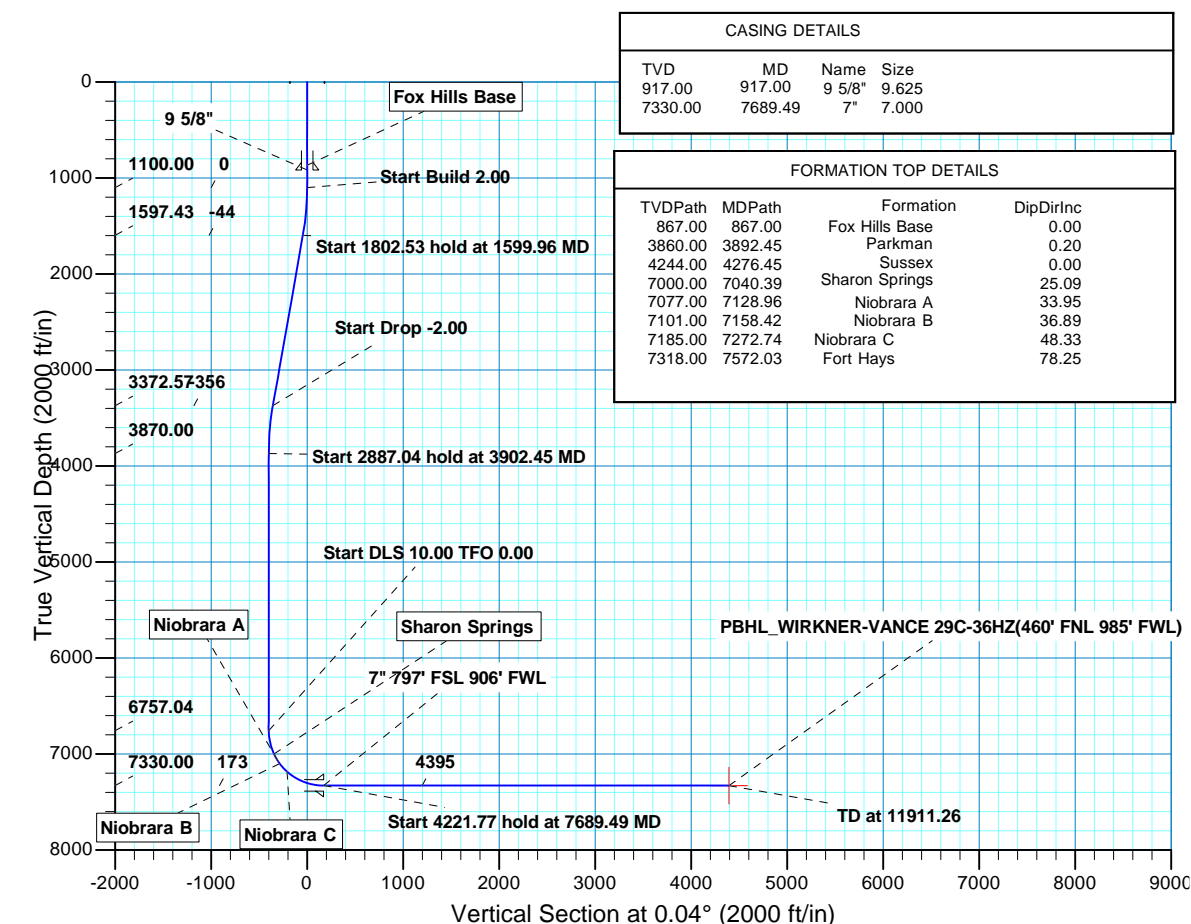


WELL DETAILS: WIRKNER-VANCE 29C-36HZ									
GL 4822 & KB 17 @ 4839.00ft (ASSUMED)									
+N/-S 0.00		+E/-W 0.00		Northing 1307429.62	Easting 3182952.00	Latitude 40.1754359	Longitude -104.8452680		
SECTION DETAILS									
MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target
0.00	0.00	0.00	0.00	0.00	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	
1599.96	10.00	179.56	1597.43	-43.51	0.33	2.00	179.56	-43.51	
3402.49	10.00	179.56	3372.57	-356.49	2.74	0.00	0.00	-356.48	
3902.45	0.00	0.00	3870.00	-400.00	3.07	2.00	180.00	-400.00	
6789.49	0.00	0.00	6757.04	-400.00	3.07	0.00	0.00	-400.00	
7689.49	90.00	0.00	7330.00	172.96	3.07	10.00	0.00	172.96	
11911.26	90.00	0.00	7330.00	4394.73	3.07	0.00	0.00	4394.73	PBHL_WIRKNER-VANCE 29C-36HZ(460' FNL 985' FWL)
DESIGN TARGET DETAILS									
Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape	
PBHL	7330.00	4394.73	3.07	1311824.25	3182922.62	40.1875000	-104.8452570	Point	
- plan hits target center									





Scientific Drilling

US ROCKIES REGION PLANNING

COLORADO NORTHERN ZONE - 83

WIRKNER-VANCE 3C-36HZ PAD

WIRKNER-VANCE 29C-36HZ

OH

Plan: PLAN #1 PRELIMINARY

Standard Planning Report

06 August, 2013

Database:	EDM5000-RobertS-Local	Local Co-ordinate Reference:	Well WIRKNER-VANCE 29C-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 29C-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:	1,307,250.94 usft	Latitude: 40.1749450
From:	Lat/Long	Easting:	3,182,974.56 usft	Longitude: -104.8451920
Position Uncertainty:	0.00 ft	Slot Radius:	13.200 in	Grid Convergence: 0.42 °

Well	WIRKNER-VANCE 29C-36HZ, 455 FSL 849 FWL			
Well Position	+N/-S	178.84 ft	Northing:	1,307,429.62 usft
	+E/-W	-21.24 ft	Easting:	3,182,952.00 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	8.65	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	0.04

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	
1,599.96	10.00	179.56	1,597.43	-43.51	0.33	2.00	2.00	0.00	179.56	
3,402.49	10.00	179.56	3,372.57	-356.49	2.74	0.00	0.00	0.00	0.00	
3,902.45	0.00	0.00	3,870.00	-400.00	3.07	2.00	-2.00	0.00	180.00	
6,789.49	0.00	0.00	6,757.04	-400.00	3.07	0.00	0.00	0.00	0.00	
7,689.49	90.00	0.00	7,330.00	172.96	3.07	10.00	10.00	0.00	0.00	
11,911.26	90.00	0.00	7,330.00	4,394.73	3.07	0.00	0.00	0.00	0.00	PBHL_WIRKNER-VA

Database:	EDM5000-RobertS-Local	Local Co-ordinate Reference:	Well WIRKNER-VANCE 29C-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 29C-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	179.56	1,199.98	-1.75	0.01	-1.75	2.00	2.00	0.00
1,300.00	4.00	179.56	1,299.84	-6.98	0.05	-6.98	2.00	2.00	0.00
1,400.00	6.00	179.56	1,399.45	-15.69	0.12	-15.69	2.00	2.00	0.00
1,500.00	8.00	179.56	1,498.70	-27.88	0.21	-27.88	2.00	2.00	0.00
1,599.96	10.00	179.56	1,597.43	-43.51	0.33	-43.51	2.00	2.00	0.00
Start 1802.53 hold at 1599.96 MD									
1,600.00	10.00	179.56	1,597.47	-43.52	0.33	-43.52	0.00	0.00	0.00
1,700.00	10.00	179.56	1,695.95	-60.88	0.47	-60.88	0.00	0.00	0.00
1,800.00	10.00	179.56	1,794.43	-78.25	0.60	-78.25	0.00	0.00	0.00
1,900.00	10.00	179.56	1,892.91	-95.61	0.73	-95.61	0.00	0.00	0.00
2,000.00	10.00	179.56	1,991.39	-112.97	0.87	-112.97	0.00	0.00	0.00
2,100.00	10.00	179.56	2,089.87	-130.34	1.00	-130.34	0.00	0.00	0.00
2,200.00	10.00	179.56	2,188.35	-147.70	1.13	-147.70	0.00	0.00	0.00
2,300.00	10.00	179.56	2,286.83	-165.06	1.27	-165.06	0.00	0.00	0.00
2,400.00	10.00	179.56	2,385.31	-182.42	1.40	-182.42	0.00	0.00	0.00
2,500.00	10.00	179.56	2,483.79	-199.79	1.53	-199.79	0.00	0.00	0.00
2,600.00	10.00	179.56	2,582.28	-217.15	1.67	-217.15	0.00	0.00	0.00
2,700.00	10.00	179.56	2,680.76	-234.51	1.80	-234.51	0.00	0.00	0.00
2,800.00	10.00	179.56	2,779.24	-251.88	1.93	-251.87	0.00	0.00	0.00
2,900.00	10.00	179.56	2,877.72	-269.24	2.07	-269.24	0.00	0.00	0.00
3,000.00	10.00	179.56	2,976.20	-286.60	2.20	-286.60	0.00	0.00	0.00
3,100.00	10.00	179.56	3,074.68	-303.96	2.33	-303.96	0.00	0.00	0.00
3,200.00	10.00	179.56	3,173.16	-321.33	2.47	-321.33	0.00	0.00	0.00
3,300.00	10.00	179.56	3,271.64	-338.69	2.60	-338.69	0.00	0.00	0.00
3,400.00	10.00	179.56	3,370.12	-356.05	2.73	-356.05	0.00	0.00	0.00
3,402.49	10.00	179.56	3,372.57	-356.49	2.74	-356.48	0.00	0.00	0.00
Start Drop -2.00									
3,500.00	8.05	179.56	3,468.87	-371.78	2.85	-371.78	2.00	-2.00	0.00
3,600.00	6.05	179.56	3,568.11	-384.05	2.95	-384.05	2.00	-2.00	0.00
3,700.00	4.05	179.56	3,667.72	-392.85	3.02	-392.85	2.00	-2.00	0.00
3,800.00	2.05	179.56	3,767.57	-398.17	3.06	-398.17	2.00	-2.00	0.00
3,892.45	0.20	179.56	3,860.00	-399.98	3.07	-399.98	2.00	-2.00	0.00
Parkman									
3,900.00	0.05	179.56	3,867.55	-400.00	3.07	-400.00	2.00	-2.00	0.00
3,902.45	0.00	0.00	3,870.00	-400.00	3.07	-400.00	2.00	-2.00	0.00
Start 2887.04 hold at 3902.45 MD									

Database:	EDM5000-RobertS-Local	Local Co-ordinate Reference:	Well WIRKNER-VANCE 29C-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 29C-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)	
4,000.00	0.00	0.00	3,967.55	-400.00	3.07	-400.00	0.00	0.00	0.00	
4,100.00	0.00	0.00	4,067.55	-400.00	3.07	-400.00	0.00	0.00	0.00	
4,200.00	0.00	0.00	4,167.55	-400.00	3.07	-400.00	0.00	0.00	0.00	
4,276.45	0.00	0.00	4,244.00	-400.00	3.07	-400.00	0.00	0.00	0.00	
Sussex										
4,300.00	0.00	0.00	4,267.55	-400.00	3.07	-400.00	0.00	0.00	0.00	
4,400.00	0.00	0.00	4,367.55	-400.00	3.07	-400.00	0.00	0.00	0.00	
4,500.00	0.00	0.00	4,467.55	-400.00	3.07	-400.00	0.00	0.00	0.00	
4,600.00	0.00	0.00	4,567.55	-400.00	3.07	-400.00	0.00	0.00	0.00	
4,700.00	0.00	0.00	4,667.55	-400.00	3.07	-400.00	0.00	0.00	0.00	
4,800.00	0.00	0.00	4,767.55	-400.00	3.07	-400.00	0.00	0.00	0.00	
4,900.00	0.00	0.00	4,867.55	-400.00	3.07	-400.00	0.00	0.00	0.00	
5,000.00	0.00	0.00	4,967.55	-400.00	3.07	-400.00	0.00	0.00	0.00	
5,100.00	0.00	0.00	5,067.55	-400.00	3.07	-400.00	0.00	0.00	0.00	
5,200.00	0.00	0.00	5,167.55	-400.00	3.07	-400.00	0.00	0.00	0.00	
5,300.00	0.00	0.00	5,267.55	-400.00	3.07	-400.00	0.00	0.00	0.00	
5,400.00	0.00	0.00	5,367.55	-400.00	3.07	-400.00	0.00	0.00	0.00	
5,500.00	0.00	0.00	5,467.55	-400.00	3.07	-400.00	0.00	0.00	0.00	
5,600.00	0.00	0.00	5,567.55	-400.00	3.07	-400.00	0.00	0.00	0.00	
5,700.00	0.00	0.00	5,667.55	-400.00	3.07	-400.00	0.00	0.00	0.00	
5,800.00	0.00	0.00	5,767.55	-400.00	3.07	-400.00	0.00	0.00	0.00	
5,900.00	0.00	0.00	5,867.55	-400.00	3.07	-400.00	0.00	0.00	0.00	
6,000.00	0.00	0.00	5,967.55	-400.00	3.07	-400.00	0.00	0.00	0.00	
6,100.00	0.00	0.00	6,067.55	-400.00	3.07	-400.00	0.00	0.00	0.00	
6,200.00	0.00	0.00	6,167.55	-400.00	3.07	-400.00	0.00	0.00	0.00	
6,300.00	0.00	0.00	6,267.55	-400.00	3.07	-400.00	0.00	0.00	0.00	
6,400.00	0.00	0.00	6,367.55	-400.00	3.07	-400.00	0.00	0.00	0.00	
6,500.00	0.00	0.00	6,467.55	-400.00	3.07	-400.00	0.00	0.00	0.00	
6,600.00	0.00	0.00	6,567.55	-400.00	3.07	-400.00	0.00	0.00	0.00	
6,700.00	0.00	0.00	6,667.55	-400.00	3.07	-400.00	0.00	0.00	0.00	
6,789.49	0.00	0.00	6,757.04	-400.00	3.07	-400.00	0.00	0.00	0.00	
Start DLS 10.00 TFO 0.00										
6,800.00	1.05	0.00	6,767.55	-399.90	3.07	-399.90	10.00	10.00	0.00	
6,900.00	11.05	0.00	6,866.87	-389.38	3.07	-389.37	10.00	10.00	0.00	
7,000.00	21.05	0.00	6,962.85	-361.76	3.07	-361.76	10.00	10.00	0.00	
7,040.39	25.09	0.00	7,000.00	-345.94	3.07	-345.93	10.00	10.00	0.00	
Sharon Springs										
7,100.00	31.05	0.00	7,052.57	-317.90	3.07	-317.90	10.00	10.00	0.00	
7,128.96	33.95	0.00	7,077.00	-302.34	3.07	-302.34	10.00	10.00	0.00	
Niobrara A										
7,158.42	36.89	0.00	7,101.00	-285.27	3.07	-285.27	10.00	10.00	0.00	
Niobrara B										
7,200.00	41.05	0.00	7,133.32	-259.12	3.07	-259.12	10.00	10.00	0.00	
7,272.74	48.33	0.00	7,185.00	-208.00	3.07	-208.00	10.00	10.00	0.00	
Niobrara C										
7,300.00	51.05	0.00	7,202.63	-187.22	3.07	-187.22	10.00	10.00	0.00	
7,400.00	61.05	0.00	7,258.41	-104.37	3.07	-104.37	10.00	10.00	0.00	
7,500.00	71.05	0.00	7,298.95	-13.09	3.07	-13.09	10.00	10.00	0.00	
7,572.03	78.25	0.00	7,318.00	56.32	3.07	56.32	10.00	10.00	0.00	
Fort Hays										
7,600.00	81.05	0.00	7,323.02	83.83	3.07	83.84	10.00	10.00	0.00	
7,689.49	90.00	0.00	7,330.00	172.96	3.07	172.96	10.00	10.00	0.00	
Start 4221.77 hold at 7689.49 MD - 7" 797' FSL 906' FWL										

Database:	EDM5000-RobertS-Local	Local Co-ordinate Reference:	Well WIRKNER-VANCE 29C-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 29C-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)
7,700.00	90.00	0.00	7,330.00	183.47	3.07	183.47	0.00	0.00	0.00
7,800.00	90.00	0.00	7,330.00	283.47	3.07	283.47	0.00	0.00	0.00
7,900.00	90.00	0.00	7,330.00	383.47	3.07	383.47	0.00	0.00	0.00
8,000.00	90.00	0.00	7,330.00	483.47	3.07	483.47	0.00	0.00	0.00
8,100.00	90.00	0.00	7,330.00	583.47	3.07	583.47	0.00	0.00	0.00
8,200.00	90.00	0.00	7,330.00	683.47	3.07	683.47	0.00	0.00	0.00
8,300.00	90.00	0.00	7,330.00	783.47	3.07	783.47	0.00	0.00	0.00
8,400.00	90.00	0.00	7,330.00	883.47	3.07	883.47	0.00	0.00	0.00
8,500.00	90.00	0.00	7,330.00	983.47	3.07	983.47	0.00	0.00	0.00
8,600.00	90.00	0.00	7,330.00	1,083.47	3.07	1,083.47	0.00	0.00	0.00
8,700.00	90.00	0.00	7,330.00	1,183.47	3.07	1,183.47	0.00	0.00	0.00
8,800.00	90.00	0.00	7,330.00	1,283.47	3.07	1,283.47	0.00	0.00	0.00
8,900.00	90.00	0.00	7,330.00	1,383.47	3.07	1,383.47	0.00	0.00	0.00
9,000.00	90.00	0.00	7,330.00	1,483.47	3.07	1,483.47	0.00	0.00	0.00
9,100.00	90.00	0.00	7,330.00	1,583.47	3.07	1,583.47	0.00	0.00	0.00
9,200.00	90.00	0.00	7,330.00	1,683.47	3.07	1,683.47	0.00	0.00	0.00
9,300.00	90.00	0.00	7,330.00	1,783.47	3.07	1,783.47	0.00	0.00	0.00
9,400.00	90.00	0.00	7,330.00	1,883.47	3.07	1,883.47	0.00	0.00	0.00
9,500.00	90.00	0.00	7,330.00	1,983.47	3.07	1,983.47	0.00	0.00	0.00
9,600.00	90.00	0.00	7,330.00	2,083.47	3.07	2,083.47	0.00	0.00	0.00
9,700.00	90.00	0.00	7,330.00	2,183.47	3.07	2,183.47	0.00	0.00	0.00
9,800.00	90.00	0.00	7,330.00	2,283.47	3.07	2,283.47	0.00	0.00	0.00
9,900.00	90.00	0.00	7,330.00	2,383.47	3.07	2,383.47	0.00	0.00	0.00
10,000.00	90.00	0.00	7,330.00	2,483.47	3.07	2,483.47	0.00	0.00	0.00
10,100.00	90.00	0.00	7,330.00	2,583.47	3.07	2,583.47	0.00	0.00	0.00
10,200.00	90.00	0.00	7,330.00	2,683.47	3.07	2,683.47	0.00	0.00	0.00
10,300.00	90.00	0.00	7,330.00	2,783.47	3.07	2,783.47	0.00	0.00	0.00
10,400.00	90.00	0.00	7,330.00	2,883.47	3.07	2,883.47	0.00	0.00	0.00
10,500.00	90.00	0.00	7,330.00	2,983.47	3.07	2,983.47	0.00	0.00	0.00
10,600.00	90.00	0.00	7,330.00	3,083.47	3.07	3,083.47	0.00	0.00	0.00
10,700.00	90.00	0.00	7,330.00	3,183.47	3.07	3,183.47	0.00	0.00	0.00
10,800.00	90.00	0.00	7,330.00	3,283.47	3.07	3,283.47	0.00	0.00	0.00
10,900.00	90.00	0.00	7,330.00	3,383.47	3.07	3,383.47	0.00	0.00	0.00
11,000.00	90.00	0.00	7,330.00	3,483.47	3.07	3,483.47	0.00	0.00	0.00
11,100.00	90.00	0.00	7,330.00	3,583.47	3.07	3,583.47	0.00	0.00	0.00
11,200.00	90.00	0.00	7,330.00	3,683.47	3.07	3,683.47	0.00	0.00	0.00
11,300.00	90.00	0.00	7,330.00	3,783.47	3.07	3,783.47	0.00	0.00	0.00
11,400.00	90.00	0.00	7,330.00	3,883.47	3.07	3,883.47	0.00	0.00	0.00
11,500.00	90.00	0.00	7,330.00	3,983.47	3.07	3,983.47	0.00	0.00	0.00
11,600.00	90.00	0.00	7,330.00	4,083.47	3.07	4,083.47	0.00	0.00	0.00
11,700.00	90.00	0.00	7,330.00	4,183.47	3.07	4,183.47	0.00	0.00	0.00
11,800.00	90.00	0.00	7,330.00	4,283.47	3.07	4,283.47	0.00	0.00	0.00
11,900.00	90.00	0.00	7,330.00	4,383.47	3.07	4,383.47	0.00	0.00	0.00
11,911.26	90.00	0.00	7,330.00	4,394.73	3.07	4,394.73	0.00	0.00	0.00
TD at 11911.26 - PBHL_WIRKNER-VANCE 29C-36HZ(460' FNL 985' FWL)									

Database:	EDM5000-RobertS-Local	Local Co-ordinate Reference:	Well WIRKNER-VANCE 29C-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 29C-36HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	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_WIRKNER-VANC	0.00	0.00	7,330.00	4,394.73	3.07	1,311,824.25	3,182,922.62	40.1875000	-104.8452570
- plan hits target center									
- Point									

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	
7,689.49	7,330.00	7" 797' FSL 906' FWL	7.000	7.500	

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
867.00	868.00	Fox Hills Base				
3,892.45	3,861.00	Parkman				
4,276.45	4,245.00	Sussex				
7,040.39	7,001.00	Sharon Springs				
7,128.96	7,078.00	Niobrara A				
7,158.42	7,102.00	Niobrara B				
7,272.74	7,186.00	Niobrara C				
7,572.03	7,319.00	Fort Hays				

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	
1,599.96	1,597.43	-43.51	0.33	Start 1802.53 hold at 1599.96 MD	
3,402.49	3,372.57	-356.49	2.74	Start Drop -2.00	
3,902.45	3,870.00	-400.00	3.07	Start 2887.04 hold at 3902.45 MD	
6,789.49	6,757.04	-400.00	3.07	Start DLS 10.00 TFO 0.00	
7,689.49	7,330.00	172.96	3.07	Start 4221.77 hold at 7689.49 MD	
11,911.26	7,330.00	4,394.73	3.07	TD at 11911.26	