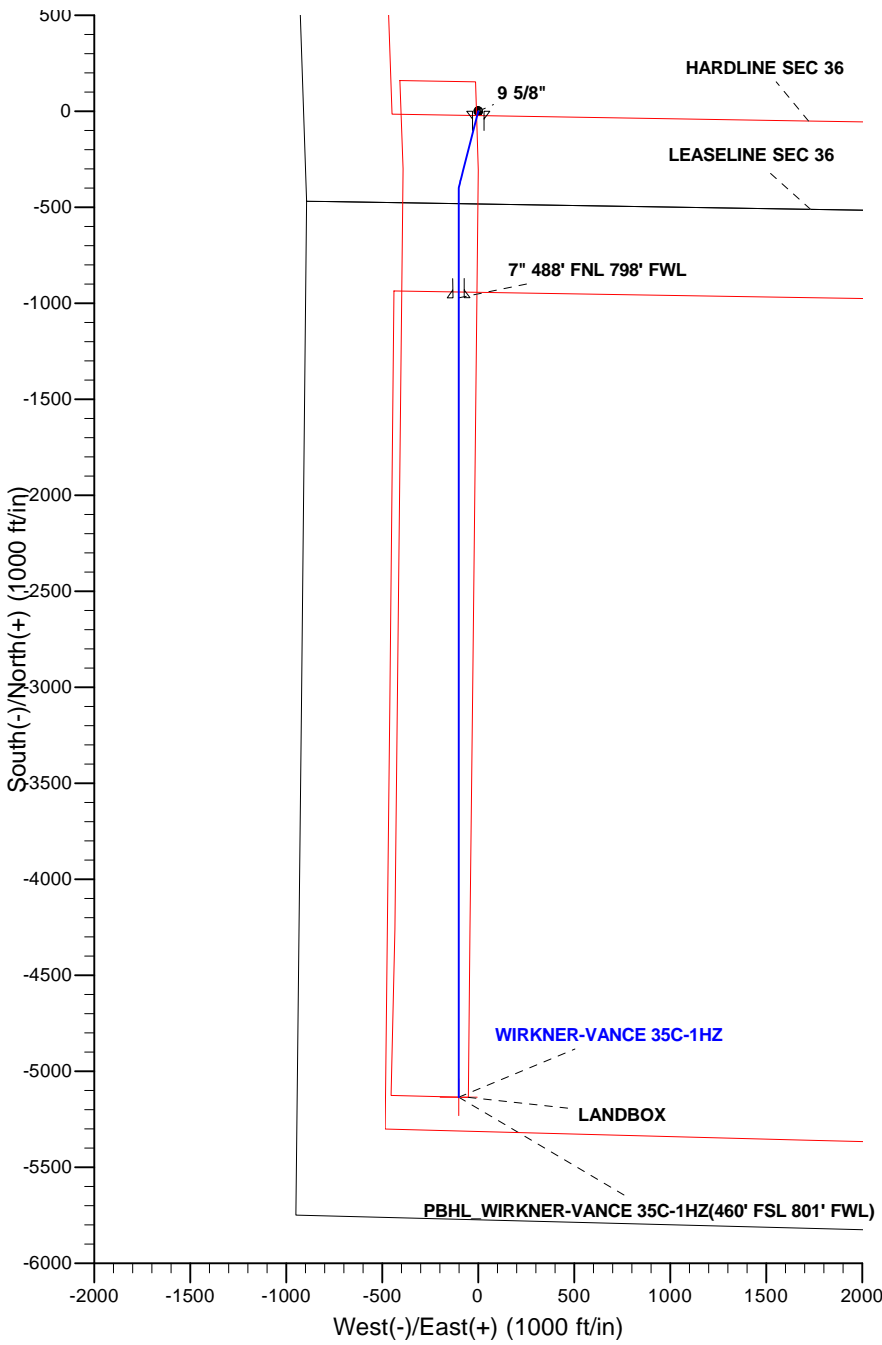
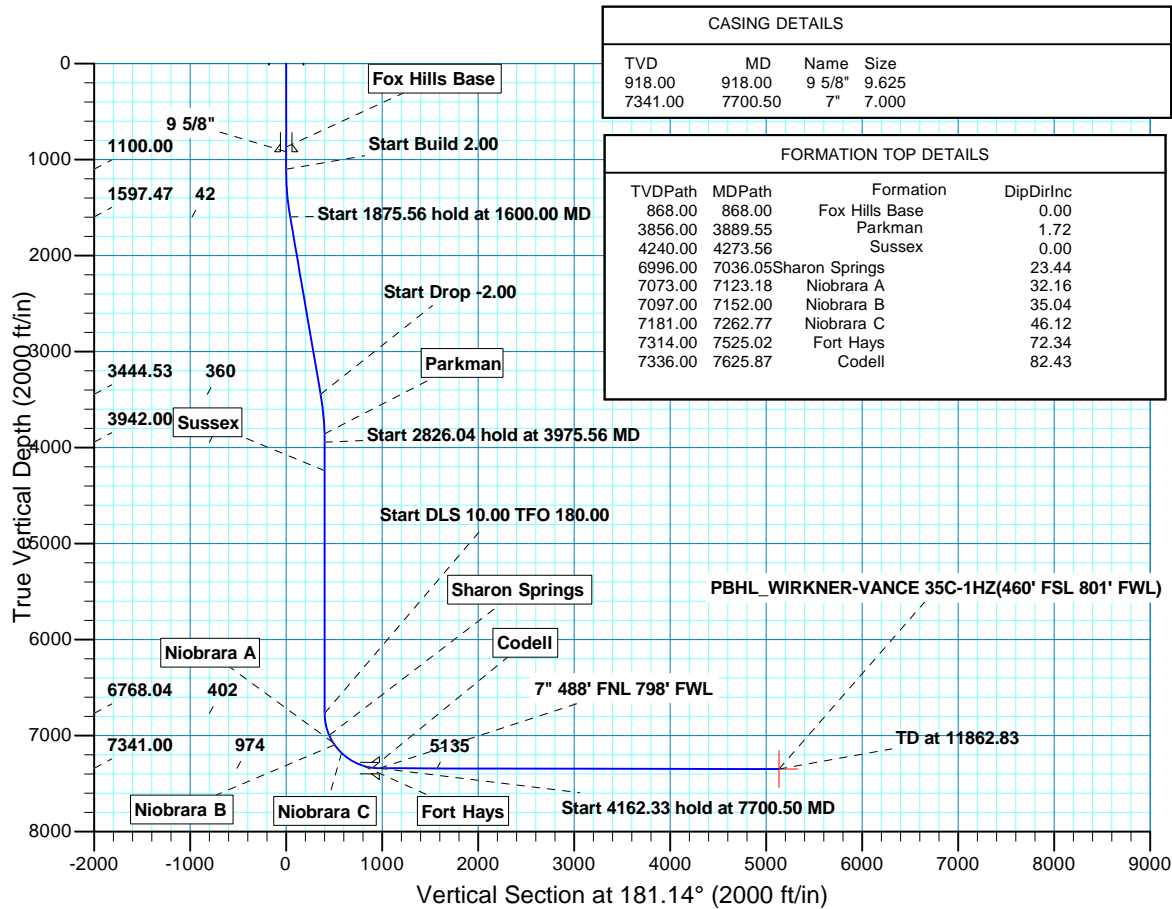


WELL DETAILS: WIRKNER-VANCE 35C-1HZ									
GL 4823 & KB 17 @ 4840.00ft (ASSUMED)									
		+N/-S	+E/-W	Northing	Easting	Latitude	Longitude		
		0.00	0.00	1307280.77	3182970.70	40.1750270	-104.8452050		
SECTION DETAILS									
MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target
0.00	0.00	0.00	0.00	0.00	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	
1600.00	10.00	194.27	1597.47	-42.18	-10.73	2.00	194.27	42.38	
3475.56	10.00	194.27	3444.53	-357.82	-91.01	0.00	0.00	359.55	
3975.56	0.00	0.00	3942.00	-400.00	-101.74	2.00	180.00	401.94	
6801.60	0.00	0.00	6768.04	-400.00	-101.74	0.00	0.00	401.94	
7700.50	89.89	180.00	7341.00	-971.86	-101.74	10.00	180.00	973.68	
11862.83	89.89	180.00	7349.00	-5134.18	-101.74	0.00	0.005135.19	PBHL_WIRKNER-VANCE 35C-1HZ(460' FSL 801' FWL)	
DESIGN TARGET DETAILS									
Name		TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
PBHL		7349.00	-5134.18	-101.74	1302145.99	3182906.88	40.1609330	-104.8455690	Point
- plan hits target center									





Scientific Drilling

US ROCKIES REGION PLANNING

COLORADO NORTHERN ZONE - 83

WIRKNER-VANCE 3C-36HZ PAD

WIRKNER-VANCE 35C-1HZ

OH

Plan: PLAN #1 PRELIMINARY

Standard Planning Report

06 August, 2013

Database:	EDM5000-RobertS-Local	Local Co-ordinate Reference:	Well WIRKNER-VANCE 35C-1HZ
Company:	US ROCKIES REGION PLANNING	TVD Reference:	GL 4823 & KB 17 @ 4840.00ft (ASSUMED)
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	GL 4823 & KB 17 @ 4840.00ft (ASSUMED)
Site:	WIRKNER-VANCE 3C-36HZ PAD	North Reference:	True
Well:	WIRKNER-VANCE 35C-1HZ	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 35C-1HZ, 306 FSL 861 FWL			
Well Position	+N/-S	29.86 ft	Northing:	1,307,280.77 usft
	+E/-W	-3.63 ft	Easting:	3,182,970.70 usft
Position Uncertainty		0.00 ft	Wellhead Elevation:	Ground Level: 4,823.00 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	181.14

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	
1,600.00	10.00	194.27	1,597.47	-42.18	-10.73	2.00	2.00	0.00	194.27	
3,475.56	10.00	194.27	3,444.53	-357.82	-91.01	0.00	0.00	0.00	0.00	
3,975.56	0.00	0.00	3,942.00	-400.00	-101.74	2.00	-2.00	0.00	180.00	
6,801.60	0.00	0.00	6,768.04	-400.00	-101.74	0.00	0.00	0.00	0.00	
7,700.50	89.89	180.00	7,341.00	-971.86	-101.74	10.00	10.00	20.02	180.00	
11,862.83	89.89	180.00	7,349.00	-5,134.18	-101.74	0.00	0.00	0.00	0.00	PBHL_WIRKNER-VA

Database:	EDM5000-RobertS-Local	Local Co-ordinate Reference:	Well WIRKNER-VANCE 35C-1HZ
Company:	US ROCKIES REGION PLANNING	TVD Reference:	GL 4823 & KB 17 @ 4840.00ft (ASSUMED)
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	GL 4823 & KB 17 @ 4840.00ft (ASSUMED)
Site:	WIRKNER-VANCE 3C-36HZ PAD	North Reference:	True
Well:	WIRKNER-VANCE 35C-1HZ	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
868.00	0.00	0.00	868.00	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
918.00	0.00	0.00	918.00	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	194.27	1,199.98	-1.69	-0.43	1.70	2.00	2.00	0.00
1,300.00	4.00	194.27	1,299.84	-6.76	-1.72	6.80	2.00	2.00	0.00
1,400.00	6.00	194.27	1,399.45	-15.21	-3.87	15.28	2.00	2.00	0.00
1,500.00	8.00	194.27	1,498.70	-27.02	-6.87	27.15	2.00	2.00	0.00
1,600.00	10.00	194.27	1,597.47	-42.18	-10.73	42.38	2.00	2.00	0.00
Start 1875.56 hold at 1600.00 MD									
1,700.00	10.00	194.27	1,695.95	-59.01	-15.01	59.29	0.00	0.00	0.00
1,800.00	10.00	194.27	1,794.43	-75.84	-19.29	76.21	0.00	0.00	0.00
1,900.00	10.00	194.27	1,892.91	-92.67	-23.57	93.12	0.00	0.00	0.00
2,000.00	10.00	194.27	1,991.39	-109.50	-27.85	110.03	0.00	0.00	0.00
2,100.00	10.00	194.27	2,089.87	-126.33	-32.13	126.94	0.00	0.00	0.00
2,200.00	10.00	194.27	2,188.35	-143.15	-36.41	143.85	0.00	0.00	0.00
2,300.00	10.00	194.27	2,286.83	-159.98	-40.69	160.76	0.00	0.00	0.00
2,400.00	10.00	194.27	2,385.31	-176.81	-44.97	177.67	0.00	0.00	0.00
2,500.00	10.00	194.27	2,483.79	-193.64	-49.25	194.58	0.00	0.00	0.00
2,600.00	10.00	194.27	2,582.27	-210.47	-53.53	211.49	0.00	0.00	0.00
2,700.00	10.00	194.27	2,680.75	-227.30	-57.81	228.40	0.00	0.00	0.00
2,800.00	10.00	194.27	2,779.23	-244.13	-62.09	245.31	0.00	0.00	0.00
2,900.00	10.00	194.27	2,877.72	-260.96	-66.37	262.22	0.00	0.00	0.00
3,000.00	10.00	194.27	2,976.20	-277.79	-70.66	279.13	0.00	0.00	0.00
3,100.00	10.00	194.27	3,074.68	-294.62	-74.94	296.04	0.00	0.00	0.00
3,200.00	10.00	194.27	3,173.16	-311.45	-79.22	312.95	0.00	0.00	0.00
3,300.00	10.00	194.27	3,271.64	-328.27	-83.50	329.86	0.00	0.00	0.00
3,400.00	10.00	194.27	3,370.12	-345.10	-87.78	346.77	0.00	0.00	0.00
3,475.56	10.00	194.27	3,444.53	-357.82	-91.01	359.55	0.00	0.00	0.00
Start Drop -2.00									
3,500.00	9.51	194.27	3,468.62	-361.83	-92.03	363.59	2.00	-2.00	0.00
3,600.00	7.51	194.27	3,567.51	-376.18	-95.68	378.00	2.00	-2.00	0.00
3,700.00	5.51	194.27	3,666.86	-387.17	-98.48	389.04	2.00	-2.00	0.00
3,800.00	3.51	194.27	3,766.55	-394.79	-100.41	396.70	2.00	-2.00	0.00
3,889.55	1.72	194.27	3,856.00	-398.75	-101.42	400.68	2.00	-2.00	0.00
Parkman									
3,900.00	1.51	194.27	3,866.45	-399.03	-101.49	400.97	2.00	-2.00	0.00
3,975.56	0.00	0.00	3,942.00	-400.00	-101.74	401.94	2.00	-2.00	0.00
Start 2826.04 hold at 3975.56 MD									
4,000.00	0.00	0.00	3,966.44	-400.00	-101.74	401.94	0.00	0.00	0.00

Database:	EDM5000-RobertS-Local	Local Co-ordinate Reference:	Well WIRKNER-VANCE 35C-1HZ
Company:	US ROCKIES REGION PLANNING	TVD Reference:	GL 4823 & KB 17 @ 4840.00ft (ASSUMED)
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	GL 4823 & KB 17 @ 4840.00ft (ASSUMED)
Site:	WIRKNER-VANCE 3C-36HZ PAD	North Reference:	True
Well:	WIRKNER-VANCE 35C-1HZ	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)
4,100.00	0.00	0.00	4,066.44	-400.00	-101.74	401.94	0.00	0.00	0.00
4,200.00	0.00	0.00	4,166.44	-400.00	-101.74	401.94	0.00	0.00	0.00
4,273.56	0.00	0.00	4,240.00	-400.00	-101.74	401.94	0.00	0.00	0.00
Sussex									
4,300.00	0.00	0.00	4,266.44	-400.00	-101.74	401.94	0.00	0.00	0.00
4,400.00	0.00	0.00	4,366.44	-400.00	-101.74	401.94	0.00	0.00	0.00
4,500.00	0.00	0.00	4,466.44	-400.00	-101.74	401.94	0.00	0.00	0.00
4,600.00	0.00	0.00	4,566.44	-400.00	-101.74	401.94	0.00	0.00	0.00
4,700.00	0.00	0.00	4,666.44	-400.00	-101.74	401.94	0.00	0.00	0.00
4,800.00	0.00	0.00	4,766.44	-400.00	-101.74	401.94	0.00	0.00	0.00
4,900.00	0.00	0.00	4,866.44	-400.00	-101.74	401.94	0.00	0.00	0.00
5,000.00	0.00	0.00	4,966.44	-400.00	-101.74	401.94	0.00	0.00	0.00
5,100.00	0.00	0.00	5,066.44	-400.00	-101.74	401.94	0.00	0.00	0.00
5,200.00	0.00	0.00	5,166.44	-400.00	-101.74	401.94	0.00	0.00	0.00
5,300.00	0.00	0.00	5,266.44	-400.00	-101.74	401.94	0.00	0.00	0.00
5,400.00	0.00	0.00	5,366.44	-400.00	-101.74	401.94	0.00	0.00	0.00
5,500.00	0.00	0.00	5,466.44	-400.00	-101.74	401.94	0.00	0.00	0.00
5,600.00	0.00	0.00	5,566.44	-400.00	-101.74	401.94	0.00	0.00	0.00
5,700.00	0.00	0.00	5,666.44	-400.00	-101.74	401.94	0.00	0.00	0.00
5,800.00	0.00	0.00	5,766.44	-400.00	-101.74	401.94	0.00	0.00	0.00
5,900.00	0.00	0.00	5,866.44	-400.00	-101.74	401.94	0.00	0.00	0.00
6,000.00	0.00	0.00	5,966.44	-400.00	-101.74	401.94	0.00	0.00	0.00
6,100.00	0.00	0.00	6,066.44	-400.00	-101.74	401.94	0.00	0.00	0.00
6,200.00	0.00	0.00	6,166.44	-400.00	-101.74	401.94	0.00	0.00	0.00
6,300.00	0.00	0.00	6,266.44	-400.00	-101.74	401.94	0.00	0.00	0.00
6,400.00	0.00	0.00	6,366.44	-400.00	-101.74	401.94	0.00	0.00	0.00
6,500.00	0.00	0.00	6,466.44	-400.00	-101.74	401.94	0.00	0.00	0.00
6,600.00	0.00	0.00	6,566.44	-400.00	-101.74	401.94	0.00	0.00	0.00
6,700.00	0.00	0.00	6,666.44	-400.00	-101.74	401.94	0.00	0.00	0.00
6,800.00	0.00	0.00	6,766.44	-400.00	-101.74	401.94	0.00	0.00	0.00
6,801.60	0.00	0.00	6,768.04	-400.00	-101.74	401.94	0.00	0.00	0.00
Start DLS 10.00 TFO 180.00									
6,900.00	9.84	180.00	6,865.95	-408.43	-101.74	410.36	10.00	10.00	0.00
7,000.00	19.84	180.00	6,962.50	-434.01	-101.74	435.94	10.00	10.00	0.00
7,036.05	23.44	180.00	6,996.00	-447.30	-101.74	449.23	10.00	10.00	0.00
Sharon Springs									
7,100.00	29.84	180.00	7,053.13	-475.96	-101.74	477.88	10.00	10.00	0.00
7,123.18	32.16	180.00	7,073.00	-487.90	-101.74	489.82	10.00	10.00	0.00
Niobrara A									
7,152.00	35.04	180.00	7,097.00	-503.85	-101.74	505.76	10.00	10.00	0.00
Niobrara B									
7,200.00	39.84	180.00	7,135.10	-533.02	-101.74	534.93	10.00	10.00	0.00
7,262.77	46.12	180.00	7,181.00	-575.79	-101.74	577.69	10.00	10.00	0.00
Niobrara C									
7,300.00	49.84	180.00	7,205.92	-603.44	-101.74	605.34	10.00	10.00	0.00
7,400.00	59.84	180.00	7,263.43	-685.09	-101.74	686.97	10.00	10.00	0.00
7,500.00	69.84	180.00	7,305.89	-775.49	-101.74	777.35	10.00	10.00	0.00
7,525.02	72.34	180.00	7,314.00	-799.15	-101.74	801.01	10.00	10.00	0.00
Fort Hays									
7,600.00	79.84	180.00	7,332.01	-871.89	-101.74	873.73	10.00	10.00	0.00
7,625.87	82.43	180.00	7,336.00	-897.45	-101.74	899.29	10.00	10.00	0.00
Codell									
7,700.00	89.84	180.00	7,341.00	-971.35	-101.74	973.18	10.00	10.00	0.00

Database:	EDM5000-RobertS-Local	Local Co-ordinate Reference:	Well WIRKNER-VANCE 35C-1HZ
Company:	US ROCKIES REGION PLANNING	TVD Reference:	GL 4823 & KB 17 @ 4840.00ft (ASSUMED)
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	GL 4823 & KB 17 @ 4840.00ft (ASSUMED)
Site:	WIRKNER-VANCE 3C-36HZ PAD	North Reference:	True
Well:	WIRKNER-VANCE 35C-1HZ	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)
7,700.50	89.89	180.00	7,341.00	-971.85	-101.74	973.68	10.00	10.00	0.00
Start 4162.33 hold at 7700.50 MD - 7" 488' FNL 798' FWL									
7,800.00	89.89	180.00	7,341.19	-1,071.35	-101.74	1,073.16	0.00	0.00	0.00
7,900.00	89.89	180.00	7,341.38	-1,171.35	-101.74	1,173.14	0.00	0.00	0.00
8,000.00	89.89	180.00	7,341.57	-1,271.35	-101.74	1,273.12	0.00	0.00	0.00
8,100.00	89.89	180.00	7,341.77	-1,371.35	-101.74	1,373.10	0.00	0.00	0.00
8,200.00	89.89	180.00	7,341.96	-1,471.35	-101.74	1,473.08	0.00	0.00	0.00
8,300.00	89.89	180.00	7,342.15	-1,571.35	-101.74	1,573.06	0.00	0.00	0.00
8,400.00	89.89	180.00	7,342.34	-1,671.35	-101.74	1,673.04	0.00	0.00	0.00
8,500.00	89.89	180.00	7,342.53	-1,771.35	-101.74	1,773.02	0.00	0.00	0.00
8,600.00	89.89	180.00	7,342.73	-1,871.35	-101.74	1,873.00	0.00	0.00	0.00
8,700.00	89.89	180.00	7,342.92	-1,971.35	-101.74	1,972.98	0.00	0.00	0.00
8,800.00	89.89	180.00	7,343.11	-2,071.35	-101.74	2,072.96	0.00	0.00	0.00
8,900.00	89.89	180.00	7,343.30	-2,171.35	-101.74	2,172.94	0.00	0.00	0.00
9,000.00	89.89	180.00	7,343.50	-2,271.35	-101.74	2,272.92	0.00	0.00	0.00
9,100.00	89.89	180.00	7,343.69	-2,371.35	-101.74	2,372.90	0.00	0.00	0.00
9,200.00	89.89	180.00	7,343.88	-2,471.35	-101.74	2,472.88	0.00	0.00	0.00
9,300.00	89.89	180.00	7,344.07	-2,571.35	-101.74	2,572.86	0.00	0.00	0.00
9,400.00	89.89	180.00	7,344.26	-2,671.35	-101.74	2,672.84	0.00	0.00	0.00
9,500.00	89.89	180.00	7,344.46	-2,771.35	-101.74	2,772.82	0.00	0.00	0.00
9,600.00	89.89	180.00	7,344.65	-2,871.35	-101.74	2,872.80	0.00	0.00	0.00
9,700.00	89.89	180.00	7,344.84	-2,971.35	-101.74	2,972.78	0.00	0.00	0.00
9,800.00	89.89	180.00	7,345.03	-3,071.35	-101.74	3,072.76	0.00	0.00	0.00
9,900.00	89.89	180.00	7,345.23	-3,171.35	-101.74	3,172.74	0.00	0.00	0.00
10,000.00	89.89	180.00	7,345.42	-3,271.35	-101.74	3,272.72	0.00	0.00	0.00
10,100.00	89.89	180.00	7,345.61	-3,371.35	-101.74	3,372.70	0.00	0.00	0.00
10,200.00	89.89	180.00	7,345.80	-3,471.35	-101.74	3,472.68	0.00	0.00	0.00
10,300.00	89.89	180.00	7,346.00	-3,571.35	-101.74	3,572.66	0.00	0.00	0.00
10,400.00	89.89	180.00	7,346.19	-3,671.35	-101.74	3,672.64	0.00	0.00	0.00
10,500.00	89.89	180.00	7,346.38	-3,771.35	-101.74	3,772.62	0.00	0.00	0.00
10,600.00	89.89	180.00	7,346.57	-3,871.35	-101.74	3,872.60	0.00	0.00	0.00
10,700.00	89.89	180.00	7,346.76	-3,971.35	-101.74	3,972.58	0.00	0.00	0.00
10,800.00	89.89	180.00	7,346.96	-4,071.35	-101.74	4,072.56	0.00	0.00	0.00
10,900.00	89.89	180.00	7,347.15	-4,171.35	-101.74	4,172.55	0.00	0.00	0.00
11,000.00	89.89	180.00	7,347.34	-4,271.35	-101.74	4,272.53	0.00	0.00	0.00
11,100.00	89.89	180.00	7,347.53	-4,371.35	-101.74	4,372.51	0.00	0.00	0.00
11,200.00	89.89	180.00	7,347.73	-4,471.35	-101.74	4,472.49	0.00	0.00	0.00
11,300.00	89.89	180.00	7,347.92	-4,571.35	-101.74	4,572.47	0.00	0.00	0.00
11,400.00	89.89	180.00	7,348.11	-4,671.35	-101.74	4,672.45	0.00	0.00	0.00
11,500.00	89.89	180.00	7,348.30	-4,771.35	-101.74	4,772.43	0.00	0.00	0.00
11,600.00	89.89	180.00	7,348.49	-4,871.35	-101.74	4,872.41	0.00	0.00	0.00
11,700.00	89.89	180.00	7,348.69	-4,971.35	-101.74	4,972.39	0.00	0.00	0.00
11,800.00	89.89	180.00	7,348.88	-5,071.35	-101.74	5,072.37	0.00	0.00	0.00
11,862.83	89.89	180.00	7,349.00	-5,134.18	-101.74	5,135.19	0.00	0.00	0.00
TD at 11862.83 - PBHL_WIRKNER-VANCE 35C-1HZ(460' FSL 801' FWL)									

Database:	EDM5000-RobertS-Local	Local Co-ordinate Reference:	Well WIRKNER-VANCE 35C-1HZ
Company:	US ROCKIES REGION PLANNING	TVD Reference:	GL 4823 & KB 17 @ 4840.00ft (ASSUMED)
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	GL 4823 & KB 17 @ 4840.00ft (ASSUMED)
Site:	WIRKNER-VANCE 3C-36HZ PAD	North Reference:	True
Well:	WIRKNER-VANCE 35C-1HZ	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	7,349.00	-5,134.18	-101.74	1,302,145.99	3,182,906.88	40.1609330	-104.8455690
- plan hits target center									
- Point									

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)	
918.00	918.00	9 5/8"	9.625	12.250	
7,700.50	7,341.00	7" 488' FNL 798' FWL	7.000	7.500	

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
868.00	867.00	Fox Hills Base				
3,889.55	3,855.00	Parkman				
4,273.56	4,239.00	Sussex				
7,036.05	6,995.00	Sharon Springs				
7,123.18	7,072.00	Niobrara A				
7,152.00	7,096.00	Niobrara B				
7,262.77	7,180.00	Niobrara C				
7,525.02	7,313.00	Fort Hays				
7,625.87	7,335.00	Codell				

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
1,600.00	1,597.47	-42.18	-10.73	Start 1875.56 hold at 1600.00 MD
3,475.56	3,444.53	-357.82	-91.01	Start Drop -2.00
3,975.56	3,942.00	-400.00	-101.74	Start 2826.04 hold at 3975.56 MD
6,801.60	6,768.04	-400.00	-101.74	Start DLS 10.00 TFO 180.00
7,700.50	7,341.00	-971.86	-101.74	Start 4162.33 hold at 7700.50 MD
11,862.83	7,349.00	-5,134.18	-101.74	TD at 11862.83