

OCD Artesia

RKI Exploration & Production

Eddy County (NM83E)

Sec 17-T26S-R30E

RDX 17-6H

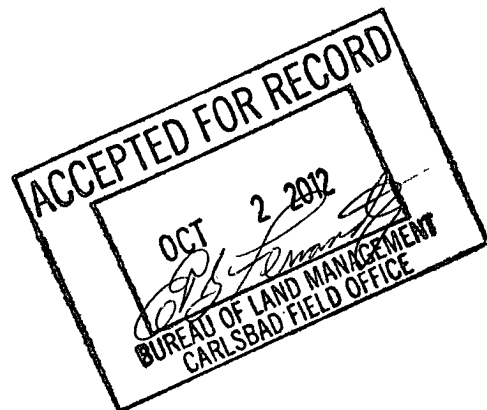
30-015-39308

Wellbore #1

Survey: MWD Surveys

Standard Survey Report

02 December, 2011



Wolverine Directional, LLC

Survey Report

Company: RKI Exploration & Production
Project: Eddy County (NM83E)
Site: Sec 17-T26S-R30E
Well: RDX 17-6H
Wellbore: Wellbore #1
Design: Wellbore #1

Local Co-ordinate Reference: Well RDX 17-6H
TVD Reference: WELL @ 0.0ft (Original Well Elev)
MD Reference: WELL @ 0.0ft (Original Well Elev)
North Reference: True
Survey Calculation Method: Minimum Curvature
Database: EDM 2003 21 Single User Db

Design	Wellbore #1			
Audit Notes:				
Version:	1 0	Phase:	ACTUAL	Tie On Depth: 0 0
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0 0	0 0	0 0	0 74

Survey Program	Date	2011/12/02		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
100.0	12,427.0	MWD Surveys (Wellbore #1)	MWD	MWD - Standard

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 0	0 00	0 00	0 0	0 0	0 0	0 0	0 00	0 00	0 00
100 0	0 35	98 41	100 0	0 0	0 3	0 0	0 35	0 35	0 00
First GYRO Survey									
200 0	0 35	132 66	200 0	-0 3	0 8	-0 3	0 21	0 00	34 25
300 0	0 21	128 14	300 0	-0 6	1 2	-0 6	0 14	-0 14	-4 52
400 0	0 32	125 59	400 0	-0 9	1 6	-0 9	0 11	0 11	-2 55
500 0	0 54	150 83	500 0	-1 5	2 0	-1 4	0 29	0 22	25 24
600 0	0 48	171 53	600 0	-2 3	2 3	-2 3	0 19	-0 06	20 70
700 0	0 62	163 87	700 0	-3 2	2 5	-3 2	0 16	0 14	-7 66
800 0	0 80	115 19	800 0	-4 0	3 3	-4 0	0 61	0 18	-48 68
900 0	0 73	99 41	900 0	-4 4	4 6	-4 4	0 22	-0 07	-15 78
1,000 0	1 11	157 24	1,000 0	-5 4	5 6	-5 4	0 95	0 38	57 83
1,100 0	2 25	180 77	1,099 9	-8 3	5 9	-8 2	1 31	1 14	23 53
1,200 0	2 26	187 73	1,199 8	-12 2	5 6	-12 1	0 27	0 01	6 96
1,300 0	2 26	198 77	1,299 8	-16 0	4 7	-16 0	0 43	0 00	11 04
1,400 0	3 08	209 85	1,399 7	-20 2	2 8	-20 2	0 97	0 82	11 08
1,500 0	4 08	218 99	1,499 5	-25 3	-0 8	-25 3	1 15	1 00	9 14
1,600 0	4 48	226 13	1,599 2	-30 8	-5 9	-30 9	0 67	0 40	7 14
1,700 0	3 73	228 18	1,698 9	-35 7	-11 1	-35 8	0 76	-0 75	2 05
1,800 0	3 32	226 21	1,798 7	-39 8	-15 6	-40 0	0 43	-0 41	-1 97
1,900 0	3 20	222 25	1,898 6	-43 9	-19 6	-44 2	0 26	-0 12	-3 96
2,000 0	3 40	222 06	1,998 4	-48 2	-23 5	-48 5	0 20	0 20	-0 19
2,100 0	2 98	220 11	2,098 2	-52 4	-27 1	-52 7	0 43	-0 42	-1 95
2,200 0	2 40	227 09	2,198 1	-55 8	-30 3	-56 2	0 67	-0 58	6 98
2,300 0	2 08	231 52	2,298 1	-58 3	-33 3	-58 8	0 36	-0 32	4 43
2,400 0	1 82	236 15	2,398 0	-60 4	-36 0	-60 8	0 30	-0 26	4 63
2,500 0	1 89	237 68	2,497 9	-62 1	-38 7	-62 6	0 09	0 07	1 53
2,600 0	1 92	240 73	2,597 9	-63 8	-41 6	-64 4	0 11	0 03	3 05
2,700 0	1 93	256 05	2,697 8	-65 0	-44 7	-65 6	0 51	0 01	15 32
2,800 0	1 79	273 07	2,797 8	-65 4	-47 9	-66 0	0 57	-0 14	17 02
2,900 0	0 64	37 65	2,897 8	-64 8	-49 1	-65 5	2 22	-1 15	124 58
3,000 0	1 41	70 27	2,997 8	-64 0	-47 6	-64 6	0 94	0 77	32 62
3,100 0	1 72	85 69	3,097 7	-63 5	-44 9	-64 0	0 52	0 31	15 42
3,200 0	4 65	106 86	3,197 6	-64 5	-39 6	-65 0	3 11	2 93	21 17
3,300 0	6 76	111 75	3,297 1	-67 9	-30 2	-68 3	2 16	2 11	4 89
3,400 0	6 74	116 60	3,396 4	-72 7	-19 5	-72 9	0 57	-0 02	4 85
3,500 0	6 21	126 01	3,495 7	-78 5	-9 9	-78 6	1 18	-0 53	9 41
3,600 0	5 42	128 20	3,595 2	-84 6	-1 8	-84 6	0 82	-0 79	2 19
3,700 0	4 55	128 82	3,694 8	-90 0	5 0	-89 9	0 87	-0 87	0 62

Wolverine Directional, LLC

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Wellbore: Wellbore #1
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Database: EDM 2003.21 Single User Db

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)	
3,800.0	4.26	129.21	3,794.5	-94.8	11.0	-94.7	0.29	-0.29	0.39	
3,900.0	4.32	128.57	3,894.3	-99.5	16.8	-99.3	0.08	0.06	-0.64	
4,000.0	4.17	131.57	3,994.0	-104.3	22.5	-104.0	0.27	-0.15	3.00	
4,100.0	3.80	130.93	4,093.7	-108.9	27.7	-108.5	0.37	-0.37	-0.64	
4,200.0	3.59	132.64	4,193.5	-113.2	32.5	-112.7	0.24	-0.21	1.71	
4,300.0	3.30	131.03	4,293.4	-117.2	37.0	-116.7	0.31	-0.29	-1.61	
4,400.0	3.06	133.53	4,393.2	-120.9	41.1	-120.4	0.28	-0.24	2.50	
4,500.0	2.62	133.89	4,493.1	-124.3	44.7	-123.7	0.44	-0.44	0.36	
4,600.0	2.30	135.97	4,593.0	-127.4	47.7	-126.7	0.33	-0.32	2.08	
4,700.0	2.11	132.13	4,692.9	-130.0	50.5	-129.4	0.24	-0.19	-3.84	
4,800.0	1.93	136.15	4,792.8	-132.5	53.0	-131.8	0.23	-0.18	4.02	
4,900.0	1.88	134.43	4,892.8	-134.8	55.3	-134.1	0.08	-0.05	-1.72	
5,000.0	1.49	141.98	4,992.7	-137.0	57.3	-136.3	0.45	-0.39	7.55	
5,100.0	1.32	153.83	5,092.7	-139.1	58.6	-138.3	0.34	-0.17	11.85	
5,200.0	1.28	158.75	5,192.7	-141.2	59.5	-140.4	0.12	-0.04	4.92	
5,300.0	1.42	158.51	5,292.7	-143.3	60.4	-142.6	0.14	0.14	-0.24	
5,400.0	1.27	162.59	5,392.6	-145.6	61.2	-144.8	0.18	-0.15	4.08	
5,500.0	1.26	161.66	5,492.6	-147.7	61.8	-146.8	0.02	-0.01	-0.93	
5,600.0	1.15	163.07	5,592.6	-149.7	62.5	-148.8	0.11	-0.11	1.41	
5,700.0	1.11	161.87	5,692.6	-151.5	63.1	-150.7	0.05	-0.04	-1.20	
5,800.0	1.37	168.10	5,792.5	-153.6	63.6	-152.8	0.29	0.26	6.23	
5,900.0	1.33	174.41	5,892.5	-156.0	64.0	-155.1	0.15	-0.04	6.31	
6,000.0	1.54	186.18	5,992.5	-158.4	64.0	-157.6	0.36	0.21	11.77	
6,100.0	1.42	183.63	6,092.5	-161.0	63.7	-160.2	0.14	-0.12	-2.55	
6,200.0	1.55	192.17	6,192.4	-163.6	63.4	-162.7	0.26	0.13	8.54	
6,300.0	1.55	176.73	6,292.4	-166.3	63.2	-165.4	0.42	0.00	-15.44	
6,400.0	1.47	179.76	6,392.4	-168.9	63.2	-168.1	0.11	-0.08	3.03	
6,500.0	1.44	172.54	6,492.3	-171.4	63.4	-170.6	0.19	-0.03	-7.22	
6,600.0	1.79	179.31	6,592.3	-174.2	63.6	-173.4	0.40	0.35	6.77	
6,700.0	1.85	172.12	6,692.2	-177.4	63.8	-176.5	0.24	0.06	-7.19	
6,800.0	2.13	178.97	6,792.2	-180.8	64.1	-180.0	0.37	0.28	6.85	
6,900.0	2.47	163.52	6,892.1	-184.8	64.7	-183.9	0.70	0.34	-15.45	
Last GYRO Survey										
6,973.0	2.80	156.50	6,965.0	-187.9	65.9	-187.0	0.63	0.45	-9.62	
First MWD Survey										
7,004.0	2.50	156.30	6,996.0	-189.2	66.5	-188.3	0.97	-0.97	-0.65	
7,036.0	2.80	155.70	7,027.9	-190.6	67.1	-189.7	0.94	0.94	-1.88	
7,068.0	3.20	165.90	7,059.9	-192.1	67.6	-191.3	2.08	1.25	31.88	
7,099.0	3.20	173.00	7,090.9	-193.8	67.9	-193.0	1.28	0.00	22.90	
7,131.0	3.30	168.30	7,122.8	-195.6	68.2	-194.7	0.89	0.31	-14.69	
7,162.0	3.10	179.10	7,153.8	-197.3	68.4	-196.4	2.05	-0.65	34.84	
7,194.0	3.10	175.20	7,185.7	-199.1	68.5	-198.2	0.66	0.00	-12.19	
7,225.0	1.60	159.40	7,216.7	-200.3	68.7	-199.4	5.23	-4.84	-50.97	
7,257.0	0.60	9.70	7,248.7	-200.6	68.9	-199.7	6.69	-3.13	-467.81	
7,288.0	2.20	352.40	7,279.7	-199.8	68.9	-198.9	5.28	5.16	-55.81	
7,320.0	3.80	359.80	7,311.6	-198.1	68.8	-197.2	5.13	5.00	23.13	
7,352.0	5.30	357.90	7,343.5	-195.6	68.7	-194.7	4.71	4.69	-5.94	
7,384.0	6.10	357.50	7,375.4	-192.4	68.6	-191.5	2.50	2.50	-1.25	
7,415.0	8.80	358.00	7,406.1	-188.4	68.4	-187.5	8.71	8.71	1.61	
7,447.0	12.10	359.80	7,437.6	-182.6	68.3	-181.7	10.36	10.31	5.63	
7,479.0	16.00	0.20	7,468.6	-174.9	68.3	-174.0	12.19	12.19	1.25	
7,510.0	19.90	359.90	7,498.1	-165.3	68.3	-164.4	12.58	12.58	-0.97	
7,542.0	24.30	359.60	7,527.7	-153.3	68.3	-152.4	13.75	13.75	-0.94	
7,573.0	28.80	359.50	7,555.4	-139.4	68.2	-138.5	14.52	14.52	-0.32	

Wolverine Directional, LLC

Survey Report

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Design: Wellbore #1

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7,605.0	32.80	359.80	7,582.9	-123.0	68.1	-122.1	12.51	12.50	0.94
7,636.0	37.80	359.90	7,608.2	-105.1	68.0	-104.2	16.13	16.13	0.32
7,668.0	42.80	0.00	7,632.6	-84.4	68.0	-83.5	15.63	15.63	0.31
7,699.0	47.90	0.10	7,654.4	-62.4	68.0	-61.5	16.45	16.45	0.32
7,731.0	53.20	359.80	7,674.7	-37.7	68.0	-36.8	16.58	16.56	-0.94
7,763.0	59.20	0.50	7,692.5	-11.1	68.1	-10.2	18.84	18.75	2.19
7,794.0	64.30	1.10	7,707.2	16.2	68.5	17.1	16.54	16.45	1.94
7,826.0	69.30	1.90	7,719.8	45.6	69.2	46.5	15.79	15.63	2.50
7,857.0	74.10	2.30	7,729.5	75.0	70.3	75.9	15.53	15.48	1.29
7,889.0	78.70	2.30	7,737.0	106.1	71.6	107.0	14.38	14.38	0.00
7,921.0	84.40	2.00	7,741.7	137.7	72.8	138.6	17.84	17.81	-0.94
7,965.0	92.00	2.60	7,743.1	181.6	74.5	182.5	17.33	17.27	1.36
7,997.0	92.40	1.70	7,741.9	213.5	75.7	214.5	3.08	1.25	-2.81
8,029.0	92.40	1.70	7,740.6	245.5	76.7	246.5	0.00	0.00	0.00
8,060.0	92.80	1.90	7,739.1	276.4	77.6	277.4	1.44	1.29	0.65
8,092.0	93.10	2.10	7,737.5	308.4	78.8	309.4	1.13	0.94	0.63
8,124.0	92.40	1.30	7,736.0	340.3	79.7	341.3	3.32	-2.19	-2.50
8,156.0	92.50	1.60	7,734.6	372.3	80.5	373.3	0.99	0.31	0.94
8,187.0	92.80	1.50	7,733.2	403.3	81.4	404.3	1.02	0.97	-0.32
8,219.0	93.20	1.40	7,731.5	435.2	82.2	436.2	1.29	1.25	-0.31
8,251.0	93.50	0.80	7,729.6	467.1	82.8	468.2	2.09	0.94	-1.88
8,283.0	93.40	0.60	7,727.7	499.1	83.2	500.1	0.70	-0.31	-0.63
8,312.0	93.90	1.00	7,725.8	528.0	83.6	529.0	2.21	1.72	1.38
8,346.0	94.10	1.10	7,723.5	561.9	84.2	563.0	0.66	0.59	0.29
8,378.0	93.50	0.60	7,721.4	593.9	84.7	594.9	2.44	-1.88	-1.56
8,410.0	93.30	0.30	7,719.5	625.8	84.9	626.8	1.13	-0.63	-0.94
8,441.0	93.10	359.90	7,717.7	656.7	85.0	657.8	1.44	-0.65	-1.29
8,472.0	93.70	0.10	7,715.9	687.7	85.0	688.7	2.04	1.94	0.65
8,504.0	91.80	358.80	7,714.4	719.7	84.7	720.7	7.19	-5.94	-4.06
8,536.0	91.80	358.70	7,713.3	751.6	84.0	752.6	0.31	0.00	-0.31
8,567.0	91.40	359.10	7,712.5	782.6	83.4	783.6	1.82	-1.29	1.29
8,599.0	92.30	358.40	7,711.5	814.6	82.7	815.6	3.56	2.81	-2.19
8,631.0	91.90	359.00	7,710.3	846.6	81.9	847.5	2.25	-1.25	1.88
8,663.0	91.80	359.20	7,709.2	878.5	81.4	879.5	0.70	-0.31	0.63
8,695.0	92.10	358.30	7,708.2	910.5	80.7	911.5	2.96	0.94	-2.81
8,726.0	92.30	359.00	7,707.0	941.5	80.0	942.4	2.35	0.65	2.26
8,758.0	92.40	358.10	7,705.7	973.4	79.2	974.4	2.83	0.31	-2.81
8,790.0	93.10	358.30	7,704.1	1,005.4	78.2	1,006.3	2.27	2.19	0.63
8,822.0	92.20	358.60	7,702.6	1,037.3	77.3	1,038.2	2.96	-2.81	0.94
8,853.0	93.00	358.20	7,701.2	1,068.3	76.5	1,069.2	2.88	2.58	-1.29
8,885.0	93.10	358.90	7,699.5	1,100.2	75.7	1,101.1	2.21	0.31	2.19
8,917.0	91.80	358.90	7,698.2	1,132.2	75.1	1,133.1	4.06	-4.06	0.00
8,949.0	92.20	358.70	7,697.0	1,164.2	74.4	1,165.0	1.40	1.25	-0.63
8,981.0	92.00	359.10	7,695.9	1,196.1	73.8	1,197.0	1.40	-0.63	1.25
9,012.0	90.90	359.80	7,695.1	1,227.1	73.5	1,228.0	4.21	-3.55	2.26
9,044.0	91.20	359.80	7,694.5	1,259.1	73.4	1,260.0	0.94	0.94	0.00
9,076.0	91.30	0.40	7,693.8	1,291.1	73.4	1,292.0	1.90	0.31	1.88
9,108.0	90.60	0.10	7,693.3	1,323.1	73.6	1,324.0	2.38	-2.19	-0.94
9,140.0	91.10	359.90	7,692.8	1,355.1	73.6	1,356.0	1.68	1.56	-0.63
9,171.0	91.20	359.40	7,692.2	1,386.1	73.4	1,386.9	1.64	0.32	-1.61
9,203.0	91.30	359.40	7,691.5	1,418.1	73.0	1,418.9	0.31	0.31	0.00
9,235.0	91.50	359.10	7,690.7	1,450.1	72.6	1,450.9	1.13	0.63	-0.94
9,267.0	91.60	0.00	7,689.8	1,482.1	72.4	1,482.9	2.83	0.31	2.81
9,298.0	92.00	359.70	7,688.9	1,513.1	72.3	1,513.9	1.61	1.29	-0.97

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9,330.0	90.60	358.90	7,688.1	1,545.0	71.9	1,545.8	5.04	-4.38	-2.50
9,362.0	90.30	359.70	7,687.9	1,577.0	71.5	1,577.8	2.67	-0.94	2.50
9,394.0	90.40	359.30	7,687.7	1,609.0	71.2	1,609.8	1.29	0.31	-1.25
9,426.0	90.40	358.00	7,687.5	1,641.0	70.5	1,641.8	4.06	0.00	-4.06
9,457.0	90.60	357.90	7,687.2	1,672.0	69.4	1,672.8	0.72	0.65	-0.32
9,489.0	90.90	357.80	7,686.8	1,704.0	68.2	1,704.7	0.99	0.94	-0.31
9,521.0	91.10	356.90	7,686.2	1,735.9	66.7	1,736.7	2.88	0.63	-2.81
9,553.0	91.50	357.00	7,685.5	1,767.9	65.0	1,768.6	1.29	1.25	0.31
9,584.0	91.50	358.40	7,684.7	1,798.9	63.7	1,799.5	4.51	0.00	4.52
9,616.0	90.70	359.10	7,684.1	1,830.8	63.0	1,831.5	3.32	-2.50	2.19
9,648.0	90.90	358.80	7,683.6	1,862.8	62.4	1,863.5	1.13	0.63	-0.94
9,680.0	91.50	358.70	7,682.9	1,894.8	61.7	1,895.5	1.90	1.88	-0.31
9,711.0	91.70	359.00	7,682.1	1,925.8	61.1	1,926.4	1.16	0.65	0.97
9,743.0	92.00	359.00	7,681.0	1,957.8	60.6	1,958.4	0.94	0.94	0.00
9,775.0	92.10	359.30	7,679.9	1,989.8	60.1	1,990.4	0.99	0.31	0.94
9,789.0	92.00	359.10	7,679.4	2,003.7	59.9	2,004.3	1.60	-0.71	-1.43
9,820.0	91.80	359.90	7,678.4	2,034.7	59.6	2,035.3	2.66	-0.65	2.58
9,852.0	91.90	359.80	7,677.3	2,066.7	59.5	2,067.3	0.44	0.31	-0.31
9,884.0	91.70	0.20	7,676.3	2,098.7	59.5	2,099.3	1.40	-0.63	1.25
9,916.0	90.10	0.70	7,675.8	2,130.7	59.8	2,131.3	5.24	-5.00	1.56
9,948.0	90.30	0.60	7,675.7	2,162.7	60.2	2,163.3	0.70	0.63	-0.31
9,979.0	90.40	0.10	7,675.5	2,193.7	60.3	2,194.3	1.64	0.32	-1.61
10,011.0	90.50	0.10	7,675.3	2,225.7	60.4	2,226.3	0.31	0.31	0.00
10,042.0	90.40	0.00	7,675.0	2,256.7	60.4	2,257.3	0.46	-0.32	-0.32
10,074.0	91.20	0.60	7,674.6	2,288.7	60.6	2,289.3	3.12	2.50	1.88
10,106.0	91.70	359.80	7,673.8	2,320.7	60.7	2,321.3	2.95	1.56	-2.50
10,138.0	91.30	359.70	7,672.9	2,352.7	60.6	2,353.2	1.29	-1.25	-0.31
10,169.0	92.10	359.70	7,672.0	2,383.6	60.4	2,384.2	2.58	2.58	0.00
10,201.0	91.80	359.00	7,670.9	2,415.6	60.0	2,416.2	2.38	-0.94	-2.19
10,233.0	90.90	359.40	7,670.2	2,447.6	59.6	2,448.2	3.08	-2.81	1.25
10,265.0	91.10	359.10	7,669.6	2,479.6	59.2	2,480.2	1.13	0.63	-0.94
10,296.0	91.40	359.10	7,668.9	2,510.6	58.7	2,511.1	0.97	0.97	0.00
10,328.0	91.70	359.10	7,668.1	2,542.6	58.2	2,543.1	0.94	0.94	0.00
10,359.0	92.00	359.30	7,667.1	2,573.6	57.8	2,574.1	1.16	0.97	0.65
10,390.0	92.60	359.00	7,665.8	2,604.5	57.3	2,605.0	2.16	1.94	-0.97
10,422.0	91.30	359.80	7,664.7	2,636.5	57.0	2,637.0	4.77	-4.06	2.50
10,454.0	91.90	0.20	7,663.9	2,668.5	57.0	2,669.0	2.25	1.88	1.25
10,485.0	92.10	359.70	7,662.8	2,699.5	56.9	2,700.0	1.74	0.65	-1.61
10,517.0	90.50	359.90	7,662.0	2,731.5	56.8	2,732.0	5.04	-5.00	0.63
10,548.0	90.90	0.20	7,661.7	2,762.5	56.9	2,763.0	1.61	1.29	0.97
10,580.0	91.50	0.20	7,661.0	2,794.5	57.0	2,795.0	1.88	1.88	0.00
10,611.0	91.70	0.20	7,660.1	2,825.4	57.1	2,825.9	0.65	0.65	0.00
10,643.0	92.40	0.30	7,659.0	2,857.4	57.2	2,857.9	2.21	2.19	0.31
10,674.0	93.10	0.00	7,657.5	2,888.4	57.3	2,888.9	2.46	2.26	-0.97
10,706.0	92.00	0.80	7,656.1	2,920.3	57.5	2,920.8	4.25	-3.44	2.50
10,737.0	91.50	1.10	7,655.1	2,951.3	58.0	2,951.8	1.88	-1.61	0.97
10,769.0	91.90	1.00	7,654.2	2,983.3	58.6	2,983.8	1.29	1.25	-0.31
10,800.0	92.50	1.30	7,653.0	3,014.3	59.2	3,014.8	2.16	1.94	0.97
10,831.0	91.40	1.80	7,651.9	3,045.3	60.1	3,045.8	3.90	-3.55	1.61
10,863.0	91.80	1.50	7,651.0	3,077.2	61.0	3,077.8	1.56	1.25	-0.94
10,895.0	92.30	1.40	7,649.9	3,109.2	61.8	3,109.7	1.59	1.56	-0.31
10,926.0	91.10	1.40	7,649.0	3,140.2	62.6	3,140.7	3.87	-3.87	0.00
10,958.0	91.20	1.30	7,648.3	3,172.2	63.3	3,172.7	0.44	0.31	-0.31
10,989.0	91.30	1.50	7,647.7	3,203.1	64.1	3,203.7	0.72	0.32	0.65

Wolverine Directional, LLC

Survey Report

Company: RKI Exploration & Production
Project: Eddy County (NM83E)
Site: Sec 17-T26S-R30E
Well: RDX 17-6H
Wellbore: Wellbore #1
Design: Wellbore #1

Local Co-ordinate Reference: Well RDX 17-6H
TVD Reference: WELL @ 0.0ft (Original Well Elev)
MD Reference: WELL @ 0.0ft (Original Well Elev)
North Reference: True
Survey Calculation Method: Minimum Curvature
Database: EDM 2003.21 Single User Db

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)
11,021.0	92.00	1.60	7,646.7	3,235.1	64.9	3,235.7	2.21	2.19	0.31
11,053.0	92.30	1.40	7,645.5	3,267.1	65.8	3,267.7	1.13	0.94	-0.63
11,084.0	90.80	1.80	7,644.7	3,298.1	66.6	3,298.6	5.01	-4.84	1.29
11,116.0	91.50	1.60	7,644.1	3,330.0	67.6	3,330.6	2.28	2.19	-0.63
11,147.0	91.90	1.70	7,643.1	3,361.0	68.5	3,361.6	1.33	1.29	0.32
11,179.0	90.90	1.70	7,642.4	3,393.0	69.4	3,393.6	3.13	-3.13	0.00
11,210.0	91.00	1.50	7,641.8	3,424.0	70.3	3,424.6	0.72	0.32	-0.65
11,242.0	91.30	1.40	7,641.2	3,456.0	71.1	3,456.6	0.99	0.94	-0.31
11,273.0	91.30	1.30	7,640.5	3,486.9	71.8	3,487.6	0.32	0.00	-0.32
11,305.0	91.80	1.30	7,639.6	3,518.9	72.6	3,519.6	1.56	1.56	0.00
11,337.0	92.30	1.30	7,638.5	3,550.9	73.3	3,551.5	1.56	1.56	0.00
11,368.0	91.40	0.90	7,637.5	3,581.9	73.9	3,582.5	3.18	-2.90	-1.29
11,400.0	91.70	1.10	7,636.6	3,613.8	74.4	3,614.5	1.13	0.94	0.63
11,431.0	92.30	1.40	7,635.5	3,644.8	75.1	3,645.5	2.16	1.94	0.97
11,463.0	92.50	1.30	7,634.2	3,676.8	75.9	3,677.5	0.70	0.63	-0.31
11,494.0	91.70	1.40	7,633.1	3,707.8	76.6	3,708.4	2.60	-2.58	0.32
11,526.0	92.30	1.40	7,631.9	3,739.7	77.4	3,740.4	1.88	1.88	0.00
11,557.0	92.80	1.30	7,630.6	3,770.7	78.1	3,771.4	1.64	1.61	-0.32
11,589.0	91.60	1.60	7,629.3	3,802.7	78.9	3,803.4	3.87	-3.75	0.94
11,621.0	90.90	1.60	7,628.6	3,834.6	79.8	3,835.3	2.19	-2.19	0.00
11,652.0	91.30	2.00	7,628.0	3,865.6	80.8	3,866.3	1.82	1.29	1.29
11,684.0	91.50	1.80	7,627.3	3,897.6	81.8	3,898.3	0.88	0.63	-0.63
11,715.0	91.90	2.10	7,626.3	3,928.6	82.9	3,929.3	1.61	1.29	0.97
11,747.0	92.10	1.80	7,625.2	3,960.5	84.0	3,961.3	1.13	0.63	-0.94
11,778.0	90.60	1.60	7,624.5	3,991.5	84.9	3,992.3	4.88	-4.84	-0.65
11,810.0	90.90	1.70	7,624.1	4,023.5	85.8	4,024.2	0.99	0.94	0.31
11,841.0	90.90	1.60	7,623.6	4,054.5	86.7	4,055.2	0.32	0.00	-0.32
11,873.0	91.20	1.20	7,623.0	4,086.4	87.5	4,087.2	1.56	0.94	-1.25
11,905.0	91.20	1.40	7,622.3	4,118.4	88.2	4,119.2	0.62	0.00	0.63
11,936.0	91.60	1.10	7,621.6	4,149.4	88.9	4,150.2	1.61	1.29	-0.97
11,968.0	91.80	1.30	7,620.6	4,181.4	89.6	4,182.2	0.88	0.63	0.63
11,999.0	90.10	0.90	7,620.1	4,212.4	90.2	4,213.2	5.63	-5.48	-1.29
12,031.0	90.60	1.20	7,619.9	4,244.4	90.8	4,245.2	1.82	1.56	0.94
12,063.0	90.80	1.10	7,619.5	4,276.4	91.4	4,277.2	0.70	0.63	-0.31
12,094.0	91.10	1.20	7,619.0	4,307.4	92.0	4,308.2	1.02	0.97	0.32
12,126.0	91.40	1.30	7,618.3	4,339.3	92.7	4,340.2	0.99	0.94	0.31
12,157.0	91.70	1.10	7,617.5	4,370.3	93.4	4,371.2	1.16	0.97	-0.65
12,189.0	92.10	1.30	7,616.4	4,402.3	94.0	4,403.1	1.40	1.25	0.63
12,220.0	92.30	1.70	7,615.2	4,433.3	94.8	4,434.1	1.44	0.65	1.29
12,252.0	92.80	1.40	7,613.8	4,465.2	95.7	4,466.1	1.82	1.56	-0.94
12,284.0	92.30	1.30	7,612.4	4,497.2	96.5	4,498.0	1.59	-1.56	-0.31
12,315.0	92.60	0.90	7,611.0	4,528.1	97.1	4,529.0	1.61	0.97	-1.29
12,347.0	93.00	1.30	7,609.5	4,560.1	97.7	4,561.0	1.77	1.25	1.25
12,379.0	93.60	0.80	7,607.6	4,592.0	98.3	4,592.9	2.44	1.88	-1.56
Last MWD Survey									
12,427.0	93.80	0.80	7,604.5	4,639.9	98.9	4,640.8	0.42	0.42	0.00
Proj to TD - RDX 17-6H PBHL									

Wolverine Directional, LLC

Survey Report

Company: RKI Exploration & Production
Project: Eddy County (NM83E)
Site: Sec 17-T26S-R30E
Well: RDX 17-6H
Wellbore: Wellbore #1
Design: Wellbore #1

Local Co-ordinate Reference: Well RDX 17-6H
TVD Reference: WELL @ 0.0ft (Original Well Elev)
MD Reference: WELL @ 0.0ft (Original Well Elev)
North Reference: True
Survey Calculation Method: Minimum Curvature
Database: EDM 2003 21 Single User Db

Survey Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
100.0	100.0	0.0	0.3	First GYRO Survey
6,900.0	6,892.1	-184.8	64.7	Last GYRO Survey
6,973.0	6,965.0	-187.9	65.9	First MWD Survey
12,379.0	7,607.6	4,592.0	98.3	Last MWD Survey
12,427.0	7,604.5	4,639.9	98.9	Proj to TD

Checked By: _____ Approved By: _____ Date: _____