

Results of Directional Survey

API number:	30-025-40181		
OGRID:		Operator:	VPR OPERATING, LLC
		Property:	REDTAIL STATE COM # 1H

surface	ULSTR:	A	02	T 23S	R 32E
				330 FNL	660 FEL

BH Loc	ULSTR:	P	02	T 23S	R 32E
	14600 MD	9960.7	TVD	51 FSL	327 FEL
				5229 FNL	

Top Perf/OH	ULSTR:	A	02	T 23S	R 32E
	10490 MD	10005.9	TVD	1129 FNL	593 FEL

Bot Perf/OH	ULSTR:	P	02	T 23S	R 32E
	14304 MD	9959.9	TVD	346 FSL	346 FEL
				4934 FNL	

	MD	N/S	E/W	VD
	10463	-772.28	64.87	10006.37
TOP PERFS/OH	10490	-799.22	66.58	10005.85
	10558	-867.06	70.88	10004.54
	14264	-4564.10	311.06	9960.33
BOT PERFS/OH	14304	-4603.98	314.11	9959.90
	14359	-4658.81	318.31	9959.31

NEXT TO LAST	14549	-4848.43	330.19	9959.75
LAST READING	14600	-4899.30	332.70	9960.70
TD	14600	-4899.30	332.70	9960.70

Surface Location	330	FN	660	FE
Projected BHL	5229	FN	327	FE
Location of				
Top Perfs/OH	1129	FN	593	FE
Bottom Perfs/OH	4934	FN	346	FE

SUMMARY of Subsurface Locations

Surface Location	A-02-23S-32E	330	FN	660	FE	Vert. Depth
Top Perfs/OH	A-02-23S-32E	1129	FN	593	FE	10005.85
Bottom Perfs/OH	P-02-23S-32E	4934	FN	346	FE	9959.90
Projected TD	P-02-23S-32E	5229	FN	327	FE	9960.70

SEP 24 2012



Scientific Drilling

VPR Operating, LLC

Lea County, New Mexico

Redtail State (1H)

Redtail State # 1H

Lateral

Design: Actual

Final Survey Report

18 January, 2012

SUR: A-02-23s-32e, 330/N & 660/E
BHL: P-02-23s-32e, 5229/N & 327/E
API # 30-025-40181



SDI
Final Survey Report

Company: VPR Operating, LLC
Project: Lea County, New Mexico
Site: Redtail State (1H)
Well: Redtail State # 1H
Wellbore: Lateral
Design: Actual

Local Co-ordinate Reference: Well Redtail State # 1H
TVD Reference: RKB @ 3753 0usft (Pinpoint #12)
MD Reference: RKB @ 3753 0usft (Pinpoint #12)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM-Houston-District

Project: Lea County, New Mexico
Map System: US State Plane 1983
Geo Datum: North American Datum 1983
Map Zone: New Mexico Eastern Zone
System Datum: Ground Level

Site: Redtail State (1H)
Site Position: Northing: 488,149 00 usft Latitude: 32° 20' 24 296 N
From: Map Easting: 755,771 00 usft Longitude: 103° 38' 20 465 W
Position Uncertainty: 0 0 usft Slot Radius: 0 " Grid Convergence: 0 37 °

Well: Redtail State # 1H
Well Position: +N/-S 0.0 usft Northing: 488,149 00 usft Latitude: 32° 20' 24 296 N
 +E/-W 0 0 usft Easting: 755,771 00 usft Longitude: 103° 38' 20.465 W
Position Uncertainty: 0 0 usft Wellhead Elevation: usft Ground Level: 3,735 0 usft

Wellbore	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
Lateral	BGGM2011	12/15/2011	7 64	60 24	48,639

Design: Actual
Audit Notes:
Version: 1 0 **Phase:** ACTUAL **Tie On Depth:** 0 0
Vertical Section:
 Depth From (TVD) **+N/-S** **+E/-W** **Direction**
 (usft) (usft) (usft) (°)
 0 0 0 0 0 0 176 25



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North Reference: Grnd
Survey Calculation Method: Minimum Curvature
Database: EDM-Houston-District

Survey Program		Date		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
91.0	9,095.0	Survey #1 (Lateral)	Gyrodata Gyro MS	Ggyro multishot
9,118.0	14,600.0	Survey #2 (Lateral)	SDI MWD	SDI MWD - Standard ver 1 0 1

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	DLeg (°/100usft)	Closure Distance (usft)	Closure Azimuth (°)	Northing (usft)	Easting (usft)
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.0	0.00	488,149.00	755,771.00
91.0	0.74	15.58	91.0	0.6	0.2	0.81	0.6	15.58	488,149.57	755,771.16
150.7	1.05	20.76	150.7	1.4	0.5	0.54	1.5	17.44	488,150.45	755,771.46
239.5	1.15	22.62	239.5	3.0	1.1	0.12	3.2	19.71	488,152.03	755,772.09
335.0	1.15	21.67	335.0	4.8	1.8	0.02	5.1	20.62	488,153.81	755,772.81
430.4	1.15	21.54	430.3	6.6	2.5	0.00	7.1	20.89	488,155.59	755,773.51
525.5	1.14	20.86	525.4	8.4	3.2	0.02	9.0	20.95	488,157.36	755,774.20
621.1	1.31	20.51	621.0	10.3	3.9	0.18	11.0	20.90	488,159.27	755,774.92
716.5	1.51	22.00	716.4	12.5	4.8	0.21	13.3	20.97	488,161.46	755,775.78
811.0	1.73	21.66	810.8	14.9	5.8	0.23	16.0	21.11	488,163.94	755,776.77
905.6	1.94	23.95	905.4	17.7	6.9	0.24	19.0	21.39	488,166.73	755,777.95
1,000.6	1.98	24.48	1,000.3	20.7	8.3	0.05	22.3	21.80	488,169.69	755,779.28
1,095.9	1.74	21.43	1,095.6	23.5	9.5	0.27	25.4	21.96	488,172.54	755,780.49
1,190.9	1.49	10.84	1,190.5	26.1	10.2	0.41	28.0	21.44	488,175.09	755,781.25
1,285.1	1.51	4.30	1,284.7	28.5	10.6	0.18	30.4	20.33	488,177.53	755,781.57
1,380.3	1.28	352.48	1,379.9	30.8	10.5	0.39	32.6	18.85	488,179.84	755,781.53
1,475.8	0.87	343.16	1,475.4	32.6	10.2	0.47	34.1	17.34	488,181.59	755,781.18
1,571.0	0.29	207.63	1,570.6	33.1	9.9	1.15	34.5	16.60	488,182.07	755,780.86
1,666.0	0.80	199.28	1,665.6	32.2	9.5	0.54	33.6	16.47	488,181.23	755,780.53
1,761.6	0.72	204.37	1,761.1	31.1	9.1	0.11	32.3	16.26	488,180.05	755,780.06
1,856.8	0.50	211.43	1,856.3	30.2	8.6	0.24	31.4	15.91	488,179.15	755,779.59



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Database: EDM-Houston-District

Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	DLeg (°/100usft)	Closure Distance (usft)	Closure Azimuth (°)	Northing (usft)	Easting (usft)
1,952.3	0.48	215.01	1,951.8	29.5	8.1	0.04	30.6	15.45	488,178.47	755,779.15
2,047.5	0.39	236.64	2,047.0	29.0	7.6	0.20	30.0	14.79	488,177.96	755,778.65
2,142.9	0.30	229.61	2,142.4	28.6	7.2	0.10	29.5	14.09	488,177.62	755,778.19
2,238.3	0.28	220.74	2,237.8	28.3	6.8	0.05	29.1	13.60	488,177.29	755,777.84
2,333.7	0.19	182.98	2,333.2	28.0	6.7	0.18	28.7	13.45	488,176.95	755,777.68
2,429.2	0.34	177.01	2,428.7	27.5	6.7	0.16	28.3	13.67	488,176.51	755,777.69
2,524.9	0.40	177.32	2,524.4	26.9	6.7	0.06	27.7	14.03	488,175.89	755,777.72
2,630.0	0.41	179.60	2,629.5	26.2	6.7	0.02	27.0	14.45	488,175.15	755,777.74
2,715.5	0.36	186.11	2,715.0	25.6	6.7	0.08	26.4	14.71	488,174.58	755,777.71
2,810.9	0.21	185.25	2,810.4	25.1	6.7	0.16	26.0	14.87	488,174.11	755,777.67
2,905.3	0.18	207.95	2,904.8	24.8	6.6	0.09	25.7	14.86	488,173.80	755,777.58
3,001.0	0.27	348.22	3,000.5	24.9	6.5	0.44	25.7	14.56	488,173.89	755,777.46
3,096.4	0.41	352.70	3,095.9	25.4	6.4	0.15	26.2	14.06	488,174.45	755,777.37
3,192.0	0.58	344.52	3,191.5	26.3	6.2	0.19	27.0	13.29	488,175.25	755,777.20
3,287.5	0.57	344.87	3,287.0	27.2	5.9	0.01	27.8	12.35	488,176.18	755,776.95
3,382.9	0.53	346.94	3,382.4	28.1	5.7	0.05	28.6	11.53	488,177.07	755,776.73
3,478.3	0.57	355.79	3,477.8	29.0	5.6	0.10	29.5	10.92	488,177.97	755,776.59
3,573.5	0.61	357.58	3,573.0	29.9	5.5	0.05	30.5	10.47	488,178.95	755,776.54
3,668.9	0.71	358.72	3,668.4	31.0	5.5	0.11	31.5	10.05	488,180.05	755,776.50
3,764.2	0.75	357.47	3,763.7	32.3	5.5	0.05	32.7	9.61	488,181.26	755,776.46
3,859.7	0.19	0.15	3,859.2	33.0	5.4	0.59	33.5	9.34	488,182.04	755,776.43
3,954.9	0.19	358.85	3,954.4	33.4	5.4	0.00	33.8	9.24	488,182.36	755,776.43
4,049.9	0.22	32.62	4,049.4	33.7	5.5	0.13	34.1	9.32	488,182.67	755,776.52
4,145.2	0.87	71.11	4,144.7	34.1	6.3	0.75	34.6	10.49	488,183.06	755,777.31
4,239.6	3.15	100.19	4,239.0	33.8	9.5	2.57	35.2	15.75	488,182.83	755,780.54
4,334.8	2.43	100.29	4,334.1	33.0	14.1	0.76	35.9	23.13	488,182.01	755,785.10
4,430.1	2.64	105.11	4,429.3	32.1	18.2	0.31	36.9	29.58	488,181.07	755,789.21



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4,525.3	3.36	109.45	4,524.4	30.6	23.0	0.79	38.2	36.90	488,179.57	755,793.95
4,620.6	3.43	103.67	4,619.5	29.0	28.4	0.37	40.5	44.39	488,177.97	755,799.36
4,715.9	2.45	105.34	4,714.7	27.8	33.1	1.03	43.2	50.01	488,176.76	755,804.09
4,811.3	1.59	106.03	4,810.0	26.9	36.3	0.90	45.2	53.53	488,175.85	755,807.33
4,906.8	1.00	95.90	4,905.5	26.4	38.4	0.66	46.6	55.51	488,175.40	755,809.43
5,002.1	0.76	91.89	5,000.8	26.3	39.9	0.26	47.8	56.61	488,175.30	755,810.89
5,097.3	0.79	94.44	5,096.0	26.2	41.2	0.05	48.8	57.51	488,175.22	755,812.18
5,192.7	0.59	104.32	5,191.4	26.1	42.3	0.24	49.7	58.38	488,175.05	755,813.31
5,287.4	0.41	106.08	5,286.1	25.8	43.1	0.19	50.3	59.06	488,174.84	755,814.11
5,382.7	0.40	63.17	5,381.4	25.9	43.7	0.31	50.8	59.37	488,174.89	755,814.73
5,478.0	0.28	52.81	5,476.7	26.2	44.2	0.14	51.4	59.37	488,175.18	755,815.21
5,573.5	0.18	336.19	5,572.2	26.5	44.3	0.31	51.6	59.17	488,175.46	755,815.34
5,668.8	0.23	308.42	5,667.5	26.7	44.1	0.12	51.6	58.81	488,175.72	755,815.13
5,764.3	0.25	312.59	5,763.0	27.0	43.8	0.03	51.5	58.38	488,175.98	755,814.82
5,858.8	0.40	318.24	5,857.5	27.4	43.5	0.16	51.4	57.80	488,176.36	755,814.45
5,954.3	0.28	340.81	5,953.0	27.8	43.2	0.19	51.4	57.18	488,176.83	755,814.15
6,049.5	0.49	353.21	6,048.1	28.5	43.0	0.24	51.6	56.52	488,177.46	755,814.03
6,144.3	0.36	5.55	6,142.9	29.2	43.0	0.17	52.0	55.87	488,178.16	755,814.01
6,239.3	0.40	15.83	6,237.9	29.8	43.1	0.08	52.4	55.38	488,178.77	755,814.13
6,334.1	0.29	32.76	6,332.7	30.3	43.4	0.16	52.9	55.06	488,179.29	755,814.35
6,429.4	0.23	13.65	6,428.0	30.7	43.5	0.11	53.3	54.82	488,179.68	755,814.53
6,524.4	0.32	2.75	6,523.0	31.1	43.6	0.11	53.6	54.46	488,180.13	755,814.58
6,619.5	0.35	348.19	6,618.1	31.7	43.5	0.09	53.8	53.96	488,180.68	755,814.54
6,714.4	0.32	346.60	6,713.0	32.2	43.4	0.03	54.1	53.42	488,181.22	755,814.42
6,809.5	0.33	349.32	6,808.1	32.7	43.3	0.02	54.3	52.90	488,181.75	755,814.30
6,904.5	0.33	349.03	6,903.1	33.3	43.2	0.00	54.5	52.39	488,182.29	755,814.20
7,000.0	0.34	349.02	6,998.6	33.8	43.1	0.01	54.8	51.86	488,182.83	755,814.09



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Survey												
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	DLeg (°/100usft)	Closure Distance (usft)	Closure Azimuth (°)	Northing (usft)	Easting (usft)		
7,095.1	0.34	340.44	7,093.7	34.4	42.9	0.05	55.0	51.32	488,183.38	755,813.95		
7,190.2	0.21	11.56	7,188.8	34.8	42.9	0.20	55.2	50.93	488,183.81	755,813.89		
7,285.2	0.29	106.45	7,283.8	34.9	43.2	0.39	55.5	51.02	488,183.92	755,814.15		
7,380.2	0.45	124.29	7,378.8	34.6	43.7	0.21	55.8	51.59	488,183.64	755,814.69		
7,475.8	0.47	130.35	7,474.4	34.2	44.3	0.05	55.9	52.35	488,183.17	755,815.30		
7,571.3	0.48	142.81	7,569.9	33.6	44.8	0.11	56.0	53.15	488,182.60	755,815.84		
7,666.7	0.45	161.84	7,665.3	32.9	45.2	0.16	55.9	53.93	488,181.93	755,816.20		
7,762.4	0.39	165.19	7,761.0	32.3	45.4	0.07	55.7	54.61	488,181.25	755,816.40		
7,857.4	0.37	157.20	7,856.0	31.7	45.6	0.06	55.5	55.23	488,180.66	755,816.60		
7,952.5	0.23	159.53	7,951.1	31.2	45.8	0.15	55.4	55.73	488,180.20	755,816.79		
8,047.7	0.21	162.79	8,046.3	30.9	45.9	0.02	55.3	56.10	488,179.85	755,816.90		
8,142.9	0.42	172.06	8,141.5	30.3	46.0	0.23	55.1	56.60	488,179.34	755,817.00		
8,237.1	0.42	171.86	8,235.7	29.7	46.1	0.00	54.8	57.25	488,178.66	755,817.10		
8,332.2	0.45	171.62	8,330.8	28.9	46.2	0.03	54.5	57.94	488,177.94	755,817.21		
8,428.3	0.37	184.68	8,426.9	28.3	46.2	0.13	54.2	58.57	488,177.26	755,817.23		
8,523.9	0.46	200.59	8,522.5	27.6	46.1	0.15	53.7	59.09	488,176.59	755,817.07		
8,618.3	0.52	196.71	8,616.9	26.8	45.8	0.07	53.1	59.65	488,175.83	755,816.82		
8,713.6	0.73	180.36	8,712.2	25.8	45.7	0.29	52.5	60.54	488,174.81	755,816.69		
8,808.4	0.84	183.44	8,807.0	24.5	45.6	0.12	51.8	61.77	488,173.51	755,816.64		
8,904.0	0.76	173.05	8,902.6	23.2	45.7	0.17	51.2	63.10	488,172.18	755,816.68		
8,999.6	1.32	133.44	8,998.2	21.8	46.6	0.92	51.4	64.92	488,170.79	755,817.56		
9,095.0	0.84	146.18	9,093.5	20.5	47.7	0.56	51.9	66.81	488,169.46	755,818.74		
Gyrodatta Tie-in												
9,118.0	0.26	121.97	9,116.5	20.3	47.9	2.66	52.0	67.04	488,169.29	755,818.88		
9,150.0	0.44	129.26	9,148.5	20.2	48.0	0.58	52.1	67.22	488,169.17	755,819.04		
9,182.0	0.79	105.88	9,180.5	20.0	48.3	1.32	52.3	67.49	488,169.03	755,819.34		
9,212.0	1.58	102.02	9,210.5	19.9	48.9	2.65	52.8	67.88	488,168.89	755,819.95		



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9,244.0	3.17	101.40	9,242.5	19.6	50.2	4.97	53.9	68.67	488,168.62	755,821.25
9,276.0	5.10	139.37	9,274.4	18.4	52.0	10.15	55.2	70.56	488,167.37	755,823.04
9,308.0	8.62	141.74	9,306.2	15.4	54.5	11.03	56.6	74.20	488,164.41	755,825.45
9,340.0	12.22	142.80	9,337.7	10.8	58.0	11.27	59.0	79.43	488,159.82	755,828.99
9,371.0	15.12	147.72	9,367.8	4.8	62.1	10.07	62.3	85.59	488,153.79	755,833.13
9,403.0	17.50	152.73	9,398.5	-3.0	66.6	8.63	66.6	92.59	488,145.98	755,837.56
9,434.0	19.87	156.95	9,427.9	-12.0	70.8	8.80	71.8	99.63	488,136.99	755,841.76
9,466.0	22.16	161.08	9,457.7	-22.7	74.9	8.52	78.2	106.89	488,126.28	755,845.85
9,498.0	24.71	164.77	9,487.1	-34.9	78.6	9.19	86.0	113.94	488,114.11	755,849.57
9,530.0	26.64	168.11	9,515.9	-48.4	81.8	7.54	95.0	120.59	488,100.64	755,852.80
9,562.0	28.31	171.54	9,544.3	-62.9	84.4	7.19	105.3	126.69	488,086.11	755,855.40
9,594.0	29.72	173.56	9,572.3	-78.3	86.4	5.37	116.6	132.18	488,070.72	755,857.40
9,626.0	31.83	174.88	9,599.8	-94.6	88.0	6.92	129.2	137.05	488,054.43	755,859.04
9,657.0	34.91	175.84	9,625.7	-111.6	89.4	10.08	143.0	141.29	488,037.44	755,860.42
9,689.0	37.99	176.55	9,651.4	-130.5	90.7	9.71	158.9	145.21	488,018.47	755,861.68
9,721.0	40.71	176.99	9,676.2	-150.8	91.8	8.54	176.5	148.66	487,998.21	755,862.82
9,753.0	42.47	177.60	9,700.1	-172.0	92.8	5.64	195.4	151.65	487,977.00	755,863.82
9,785.0	44.41	177.87	9,723.3	-194.0	93.7	6.09	215.4	154.22	487,955.01	755,864.69
9,817.0	43.62	178.66	9,746.3	-216.2	94.4	3.01	235.9	156.42	487,932.79	755,865.36
9,849.0	40.10	181.29	9,770.2	-237.6	94.4	12.29	255.6	158.33	487,911.44	755,865.39
9,880.0	40.45	181.73	9,793.8	-257.6	93.9	1.45	274.2	159.98	487,891.41	755,864.86
9,912.0	-42.12	182.61	9,817.9	-278.7	93.1	5.53	293.8	161.54	487,870.31	755,864.06
9,944.0	44.14	182.79	9,841.2	-300.5	92.0	6.32	314.3	162.98	487,848.46	755,863.02
9,976.0	47.40	183.93	9,863.5	-323.4	90.7	10.50	335.9	164.34	487,825.57	755,861.67
10,007.0	50.03	183.67	9,884.0	-346.7	89.1	8.51	357.9	165.58	487,802.33	755,860.13
10,039.0	53.21	184.19	9,903.9	-371.7	87.4	10.02	381.8	166.77	487,777.31	755,858.41
10,071.0	56.63	184.37	9,922.2	-397.8	85.5	10.70	406.9	167.88	487,751.20	755,856.46



SDI
Final Survey Report

Company: VPR Operating, LLC
 Project: Lea County, New Mexico
 Site: Redtail State (1H)
 Well: Redtail State # 1H
 Wellbore: Lateral
 Design: Actual

Local Co-ordinate Reference: Well Redtail State # 1H
 TVD Reference: RKB @ 3753 0usft (Pinpoint #12)
 MD Reference: RKB @ 3753 0usft (Pinpoint #12)
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Database: EDM-Houston-District

Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	DLeg (°/100usft)	Closure Distance (usft)	Closure Azimuth (°)	Northing (usft)	Easting (usft)
10,102.0	59.88	184.81	9,938.6	-424.1	83.3	10.55	432.2	168.88	487,724.93	755,854.34
10,134.0	63.40	185.34	9,953.7	-452.1	80.9	11.10	459.3	169.86	487,696.88	755,851.85
10,166.0	67.01	185.16	9,967.2	-481.0	78.2	11.29	487.4	170.77	487,667.96	755,849.19
10,198.0	70.70	185.16	9,978.7	-510.8	75.5	11.53	516.3	171.59	487,638.24	755,846.51
10,230.0	74.48	184.98	9,988.3	-541.2	72.8	11.82	546.0	172.34	487,607.83	755,843.81
10,262.0	78.44	184.28	9,995.8	-572.2	70.3	12.56	576.5	173.00	487,576.83	755,841.30
10,295.0	82.57	183.58	10,001.2	-604.6	68.1	12.69	608.5	173.58	487,544.36	755,839.07
10,325.0	85.65	183.23	10,004.3	-634.4	66.3	10.33	637.9	174.03	487,514.58	755,837.30
10,400.0	89.34	180.59	10,007.6	-709.3	63.8	6.05	712.2	174.86	487,439.71	755,834.81
10,431.0	91.45	179.01	10,007.4	-740.3	63.9	8.50	743.0	175.07	487,408.71	755,834.92
10,463.0	91.98	177.60	10,006.4	-772.3	64.9	4.71	775.0	175.20	487,376.74	755,835.86
10,558.0	90.22	175.14	10,004.6	-867.0	70.9	3.18	869.9	175.33	487,281.96	755,841.88
10,653.0	90.13	173.91	10,004.3	-961.6	79.9	1.30	964.9	175.25	487,187.40	755,850.94
10,748.0	91.01	173.56	10,003.3	-1,056.0	90.3	1.00	1,059.9	175.11	487,092.97	755,861.31
10,844.0	91.71	175.32	10,001.1	-1,151.5	99.6	1.97	1,155.8	175.06	486,997.45	755,870.61
10,939.0	92.07	175.93	9,997.9	-1,246.2	106.8	0.75	1,250.8	175.10	486,902.78	755,877.85
11,034.0	91.89	175.49	9,994.6	-1,340.9	114.0	0.50	1,345.7	175.14	486,808.11	755,884.95
11,129.0	92.33	176.88	9,991.1	-1,435.6	120.3	1.53	1,440.6	175.21	486,713.38	755,891.27
11,224.0	92.33	175.93	9,987.3	-1,530.4	126.2	1.00	1,535.5	175.29	486,618.65	755,897.22
11,319.0	92.24	176.28	9,983.5	-1,625.1	132.7	0.38	1,630.5	175.33	486,523.94	755,903.67
11,414.0	91.01	174.70	9,980.8	-1,719.7	140.1	2.11	1,725.4	175.34	486,429.28	755,911.13
11,510.0	90.66	176.11	9,979.4	-1,815.4	147.8	1.51	1,821.4	175.34	486,333.60	755,918.82
11,605.0	90.04	176.20	9,978.8	-1,910.2	154.2	0.66	1,916.4	175.38	486,238.82	755,925.19
11,700.0	90.57	175.93	9,978.3	-2,005.0	160.7	0.63	2,011.4	175.42	486,144.04	755,931.71
11,795.0	90.66	176.11	9,977.3	-2,099.7	167.3	0.21	2,106.4	175.44	486,049.28	755,938.31
11,884.5	90.66	175.40	9,976.3	-2,189.0	173.9	0.79	2,195.9	175.46	485,960.00	755,944.93
11,985.0	90.57	175.40	9,975.2	-2,289.1	182.0	0.09	2,296.4	175.45	485,859.86	755,952.99



SDI Final Survey Report

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Site: Redtail State (1H)
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Wellbore: Lateral
Design: Actual

Local Co-ordinate Reference: Well Redtail State # 1H
TVD Reference: RKB @ 3753 0usft (Pinpoint #12)
MD Reference: RKB @ 3753 0usft (Pinpoint #12)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM-Houston-District

Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	DLeg (°/100usft)	Closure Distance (usft)	Closure Azimuth (°)	Northing (usft)	Easting (usft)
12,079.0	89.34	175.67	9,975.3	-2,382.9	189.3	1.34	2,390.4	175.46	485,766.15	755,960.31
12,174.0	89.34	177.43	9,976.4	-2,477.7	195.0	1.85	2,485.3	175.50	485,671.33	755,966.02
12,269.0	89.25	177.51	9,977.5	-2,572.6	199.2	0.13	2,580.3	175.57	485,576.43	755,970.22
12,364.0	89.34	176.99	9,978.7	-2,667.5	203.8	0.56	2,675.2	175.63	485,481.55	755,974.78
12,459.0	90.40	177.43	9,978.9	-2,762.3	208.4	1.21	2,770.2	175.69	485,386.66	755,979.40
12,555.0	89.96	177.60	9,978.6	-2,858.2	212.6	0.49	2,866.1	175.75	485,290.75	755,983.56
12,649.0	90.75	177.78	9,978.0	-2,952.2	216.4	0.86	2,960.1	175.81	485,196.83	755,987.35
12,744.0	90.13	176.90	9,977.3	-3,047.1	220.8	1.13	3,055.0	175.86	485,101.94	755,991.76
12,839.0	90.31	176.37	9,976.9	-3,141.9	226.3	0.59	3,150.0	175.88	485,007.10	755,997.33
12,934.0	90.92	177.45	9,975.9	-3,236.8	231.5	1.31	3,245.0	175.91	484,912.25	756,002.46
13,028.0	89.69	177.34	9,975.4	-3,330.7	235.7	1.31	3,339.0	175.95	484,818.35	756,006.73
13,123.0	89.25	176.46	9,976.3	-3,425.5	240.9	1.04	3,434.0	175.98	484,723.49	756,011.86
13,218.0	89.43	177.25	9,977.4	-3,520.4	246.1	0.85	3,528.9	176.00	484,628.64	756,017.08
13,313.0	90.75	177.07	9,977.2	-3,615.2	250.8	1.40	3,623.9	176.03	484,533.76	756,021.78
13,409.0	89.78	175.40	9,976.8	-3,711.0	257.1	2.01	3,719.9	176.04	484,437.97	756,028.09
13,503.0	90.84	177.07	9,976.3	-3,804.8	263.3	2.10	3,813.9	176.04	484,344.18	756,034.26
13,598.0	91.19	176.46	9,974.6	-3,899.6	268.6	0.74	3,908.9	176.06	484,249.35	756,039.62
13,693.0	90.31	175.58	9,973.4	-3,994.4	275.2	1.31	4,003.9	176.06	484,154.59	756,046.21
13,789.0	91.36	177.16	9,972.0	-4,090.2	281.3	1.98	4,099.9	176.07	484,058.80	756,052.29
13,884.0	91.89	175.84	9,969.3	-4,185.0	287.1	1.50	4,194.8	176.08	483,964.01	756,058.09
13,979.0	92.51	176.90	9,965.6	-4,279.7	293.1	1.29	4,289.7	176.08	483,869.28	756,064.10
14,074.0	90.75	177.25	9,962.9	-4,374.6	297.9	1.89	4,384.7	176.10	483,774.44	756,068.94
14,169.0	91.01	176.64	9,961.5	-4,469.4	303.0	0.70	4,479.7	176.12	483,679.59	756,074.00
14,264.0	90.31	174.79	9,960.4	-4,564.1	310.1	2.08	4,574.7	176.11	483,584.87	756,081.10
14,359.0	90.92	176.46	9,959.3	-4,658.8	317.3	1.87	4,669.6	176.10	483,490.15	756,088.35
14,454.0	89.78	176.55	9,958.8	-4,753.7	323.1	1.20	4,764.6	176.11	483,395.33	756,094.14
14,549.0	88.99	176.11	9,959.8	-4,848.5	329.2	0.95	4,859.6	176.12	483,300.53	756,100.22



SDI
Final Survey Report

Company: VPR Operating, LLC
Project: Lea County, New Mexico
Site: Redtail State (1H)
Well: Redtail State # 1H
Wellbore: Lateral
Design: Actual

Local Co-ordinate Reference: Well Redtail State # 1H
TVD Reference: RKB @ 3753.0usft (Pinpoint #12)
MD Reference: RKB @ 3753.0usft (Pinpoint #12)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM-Houston-District

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	DLeg (°/100usft)	Closure Distance (usft)	Closure Azimuth (°)	Northing (usft)	Easting (usft)
14,600.0	88.99	176.11	9,960.7	-4,899.3	332.7	0.00	4,910.6	176.12	483,249.66	756,103.68
Projected Depth										

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N-S (usft)	+E-W (usft)	
9,095.0	9,093.5	20.5	47.7	Gyrodata Tie-in
14,600.0	9,960.7	-4,899.3	332.7	Projected Depth



Scientific Drilling

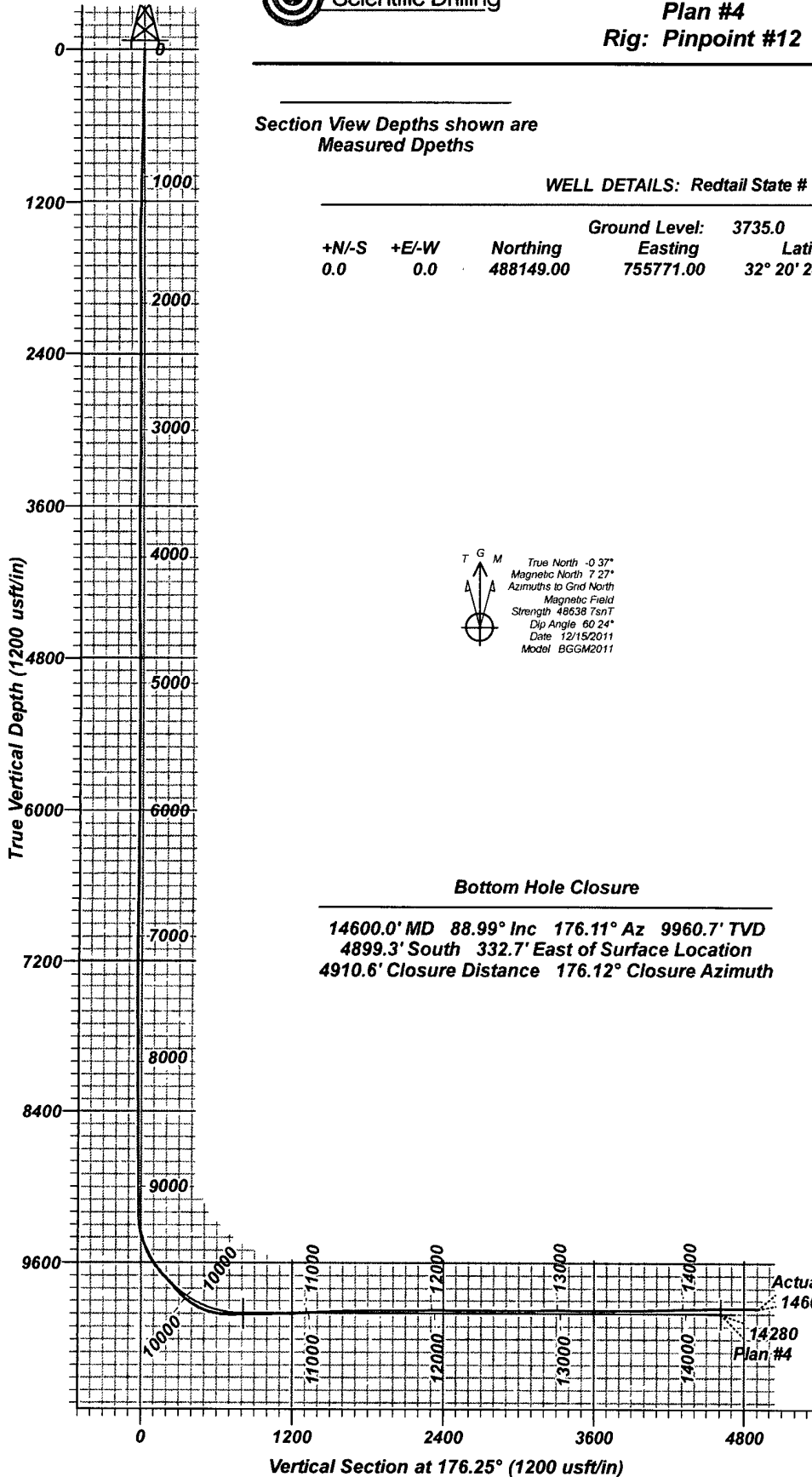
VPR Operating, LLC
Redtail State # 1H
Lea County, New Mexico
Plan #4
Rig: Pinpoint #12

Section View Depths shown are
Measured Dpeths

Plan View Depths shown are
True Vertical Depths

WELL DETAILS: Redtail State # 1H

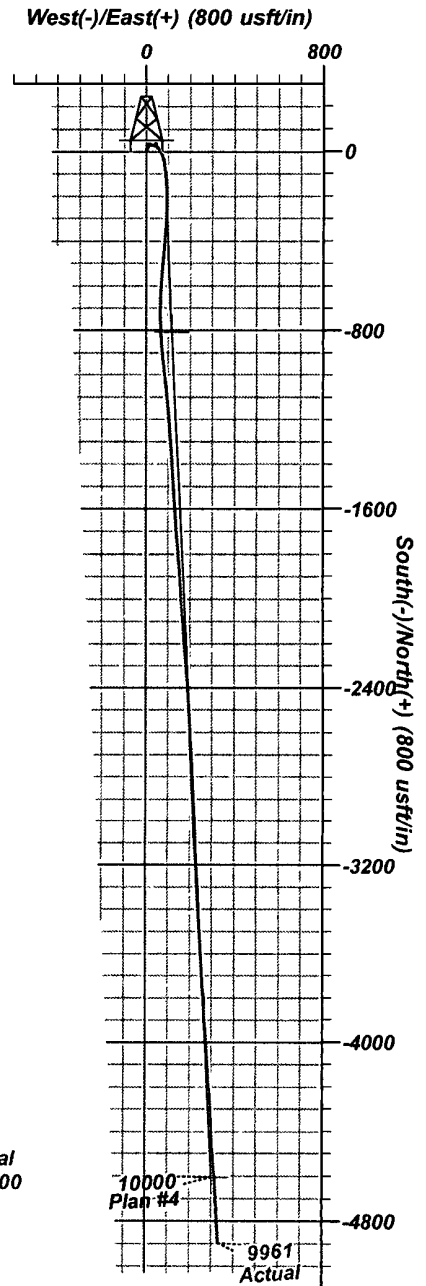
			Ground Level:	3735.0		
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	
0.0	0.0	488149.00	755771.00	32° 20' 24.296 N	103° 38' 20.465 W	



True North -0.37°
 Magnetic North 7.27°
 Azimuths to Grid North
 Magnetic Field
 Strength 48638 TsnT
 Dip Angle 60.24°
 Date 12/15/2011
 Model BGGM2011

Bottom Hole Closure

14600.0' MD 88.99° Inc 176.11° Az 9960.7' TVD
 4899.3' South 332.7' East of Surface Location
 4910.6' Closure Distance 176.12° Closure Azimuth





Scientific Drilling

SCIENTIFIC DRILLING INTERNATIONAL

DIRECTIONAL SURVEY REPORT

OPERATOR : T.MYERS/B.MARLOWE

MAGNETIC CORRECTION:

Grid North

WELL NAME: REDTAIL STATE #1H

Date: 10-Sep-12

LOCATION : LEA COUNTY, NM

Time: 1:06 PM

JOB NUMBER: 31D1111241

Bit To Sensor:

47'

DOG LEG:

100.00

Supervisor:

MINIMUM CURVATURE CALCULATIONS(SPE-3362)

PROPOSED DIRECTION:

Measured Depth [ft]	Inclination [deg]	Azimuth [deg]	True Vertical Depth [ft]	Northing (Latitude) [ft]	Easting (Departure) [ft]	Vertical Section [ft]
9095.00	0.84	146.18	9093.54	20.46	47.74	-17.29
9118.00	0.26	121.97	9116.54	20.29	47.88	-17.12
9150.00	0.44	129.26	9148.54	20.18	48.04	-16.99
9182.00	0.79	105.88	9180.54	20.04	48.34	-16.83
9212.00	1.58	102.02	9210.53	19.89	48.95	-16.65
9244.00	3.17	101.40	9242.50	19.63	50.25	-16.30
9276.00	5.10	139.37	9274.42	18.37	52.04	-14.93
9308.00	8.62	141.74	9306.19	15.41	54.45	-11.82
9340.00	12.22	142.80	9337.66	10.83	57.98	-7.01
9371.00	15.12	147.72	9367.77	4.79	62.13	-0.72
9403.00	17.50	152.73	9398.49	-3.01	66.56	7.36
9434.00	19.87	156.95	9427.85	-12.01	70.76	16.61
9466.00	22.16	161.08	9457.72	-22.72	74.85	27.57
9498.00	24.71	164.77	9487.08	-34.89	78.57	39.95
9530.00	26.64	168.11	9515.92	-48.36	81.80	53.61
9562.00	28.31	171.54	9544.31	-62.89	84.40	68.28
9594.00	29.72	173.56	9572.30	-78.28	86.40	83.77
9626.00	31.83	174.88	9599.79	-94.57	88.05	100.13
9657.00	34.91	175.84	9625.67	-111.57	89.42	117.18
9689.00	37.99	176.55	9651.41	-130.53	90.68	136.18
9721.00	40.71	176.99	9676.15	-150.79	91.82	156.47
9753.00	42.47	177.60	9700.09	-172.01	92.82	177.71
9785.00	44.41	177.87	9723.32	-193.99	93.69	199.70
9817.00	43.62	178.66	9746.33	-216.21	94.37	221.92
9849.00	40.10	181.29	9770.17	-237.56	94.39	243.22
9880.00	40.45	181.73	9793.82	-257.59	93.86	263.18
9912.00	42.12	182.61	9817.86	-278.69	93.06	284.18
9944.00	44.14	182.79	9841.22	-300.54	92.03	305.92
9976.00	47.40	183.93	9863.53	-323.43	90.68	328.66
10007.00	50.03	183.67	9883.99	-346.67	89.14	351.76
10039.00	53.29	184.19	9903.83	-371.70	87.41	376.63
10071.00	56.63	184.37	9922.20	-397.83	85.46	402.56
10102.00	59.88	184.81	9938.51	-424.10	83.35	428.64
10134.00	63.40	185.34	9953.71	-452.15	80.86	456.47
10166.00	67.01	185.16	9967.13	-481.07	78.20	485.15
10198.00	70.70	185.16	9978.67	-510.79	75.51	514.63
10230.00	74.48	184.98	9988.25	-541.20	72.82	544.80
10262.00	78.44	184.28	9995.74	-572.20	70.31	575.57
10295.00	82.57	183.58	10001.18	-604.66	68.08	607.82
10325.00	85.65	183.23	10004.26	-634.45	66.31	637.43
10400.00	89.34	180.59	10007.54	-709.32	63.81	711.97
10431.00	91.45	179.01	10007.32	-740.31	63.92	742.91
10463.00	91.98	177.60	10006.37	-772.28	64.87	774.87
10558.00	90.22	175.14	10004.54	-867.06	70.88	869.84
10653.00	90.13	173.91	10004.25	-961.63	79.94	964.80
10748.00	91.01	173.56	10003.31	-1056.06	90.31	1059.70
10844.00	91.71	175.32	10001.02	-1151.57	99.61	1155.62
10939.00	92.07	175.93	9997.89	-1246.24	106.85	1250.56
11034.00	91.89	175.49	9994.61	-1340.92	113.95	1345.50
11129.00	92.33	176.28	9991.11	-1435.61	120.76	1440.43



SCIENTIFIC DRILLING INTERNATIONAL

DIRECTIONAL SURVEY REPORT

OPERATOR : T.MYERS/B.MARLOWE

MAGNETIC CORRECTION:

Grid North

WELL NAME: REDTAIL STATE #1H

Date: 10-Sep-12

LOCATION : LEA COUNTY, NM

Time: 1:06 PM

JOB NUMBER: 31D1111241

Bit To Sensor: 47'

DOG LEG: 100.00

Supervisor:

MINIMUM CURVATURE CALCULATIONS(SPE-3362)

PROPOSED DIRECTION:

Measured Depth [ft]	Inclination [deg]	Azimuth [deg]	True Vertical Depth [ft]	Northing (Latitude) [ft]	Easting (Departure) [ft]	Vertical Section [ft]
11224.00	92.33	175.93	9987.25	-1530.31	127.20	1535.36
11319.00	92.24	176.28	9983.46	-1625.02	133.64	1630.28
11414.00	91.01	174.70	9980.76	-1719.68	141.11	1725.23
11510.00	90.66	176.11	9979.36	-1815.36	148.80	1821.21
11605.00	90.04	176.20	9978.78	-1910.14	155.17	1916.20
11700.00	90.57	175.93	9978.27	-2004.92	161.69	2011.20
11795.00	90.66	176.11	9977.25	-2099.68	168.29	2106.19
11890.00	90.66	175.40	9976.15	-2194.42	175.32	2201.18
11985.00	90.57	175.40	9975.13	-2289.10	182.93	2296.17
12079.00	89.34	175.67	9975.20	-2382.82	190.24	2390.16
12174.00	89.34	177.43	9976.30	-2477.64	195.96	2485.15
12269.00	89.25	177.51	9977.46	-2572.54	200.16	2580.12
12364.00	89.34	176.99	9978.63	-2667.42	204.71	2675.10
12459.00	90.40	177.43	9978.85	-2762.30	209.34	2770.08
12555.00	89.96	177.60	9978.55	-2858.21	213.51	2866.06
12649.00	90.75	177.78	9977.98	-2952.14	217.30	2960.03
12744.00	90.13	176.90	9977.25	-3047.03	221.71	3055.01
12839.00	90.31	176.37	9976.88	-3141.86	227.28	3150.00
12934.00	90.92	177.43	9975.86	-3236.72	232.42	3244.99
13028.00	89.69	177.34	9975.36	-3330.61	236.71	3338.97
13123.00	89.25	176.46	9976.23	-3425.47	241.85	3433.96
13218.00	89.43	177.25	9977.33	-3520.32	247.06	3528.94
13313.00	90.75	177.07	9977.18	-3615.20	251.77	3623.93
13409.00	89.78	175.40	9976.74	-3710.99	258.06	3719.92
13503.00	90.84	177.07	9976.23	-3804.78	264.23	3813.92
13598.00	91.19	176.46	9974.56	-3899.62	269.58	3908.90
13693.00	90.31	175.58	9973.32	-3994.38	276.18	4003.89
13789.00	91.36	177.16	9971.92	-4090.17	282.25	4099.87
13884.00	91.89	175.84	9969.22	-4184.95	288.04	4194.83
13979.00	92.51	176.90	9965.58	-4279.69	294.05	4289.76
14074.00	90.75	177.25	9962.88	-4374.52	298.90	4384.71
14169.00	91.01	176.64	9961.42	-4469.38	303.96	4479.69
14264.00	90.31	174.79	9960.33	-4564.10	311.06	4574.67
14359.00	90.92	176.46	9959.31	-4658.81	318.31	4669.66
14454.00	89.78	176.55	9958.72	-4753.63	324.11	4764.65
14549.00	88.99	176.11	9959.75	-4848.43	330.19	4859.65