



# **Noble Energy (Rockies)**

**Garfield County, CO (NAD 83)**

**Sec. 35-T7S-R95W (BM 35C PAD)**

**BM 35-32B**

**BM 35-32B**

**Plan: BM 35-32B Proposal 2.0**

## **Standard Proposal Report**

**13 February, 2010**



**HALLIBURTON**  
**Sperry Drilling Services**

Project: Garfield County, CO (NAD 83)  
Site: Sec. 35-T7S-R95W (BM 35C PAD)  
Well: BM 35-32B  
Wellbore: BM 35-32B  
Plan: BM 35-32B Proposal 2.0

Noble Energy (Rockies)

SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec
0.00	0.00	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
1219.25	14.38	132.38	1211.72	-60.54	66.35	2.00	132.38	-60.54
6525.17	14.38	132.38	6351.29	-949.01	1040.11	0.00	0.00	-949.01
7244.42	0.00	2.44	7063.00	-1009.55	1106.46	2.00	180.00	-1009.55
11344.41	0.00	2.44	11163.00	-1009.55	1106.46	0.00	0.00	-1009.55

WELL DETAILS: BM 35-32B

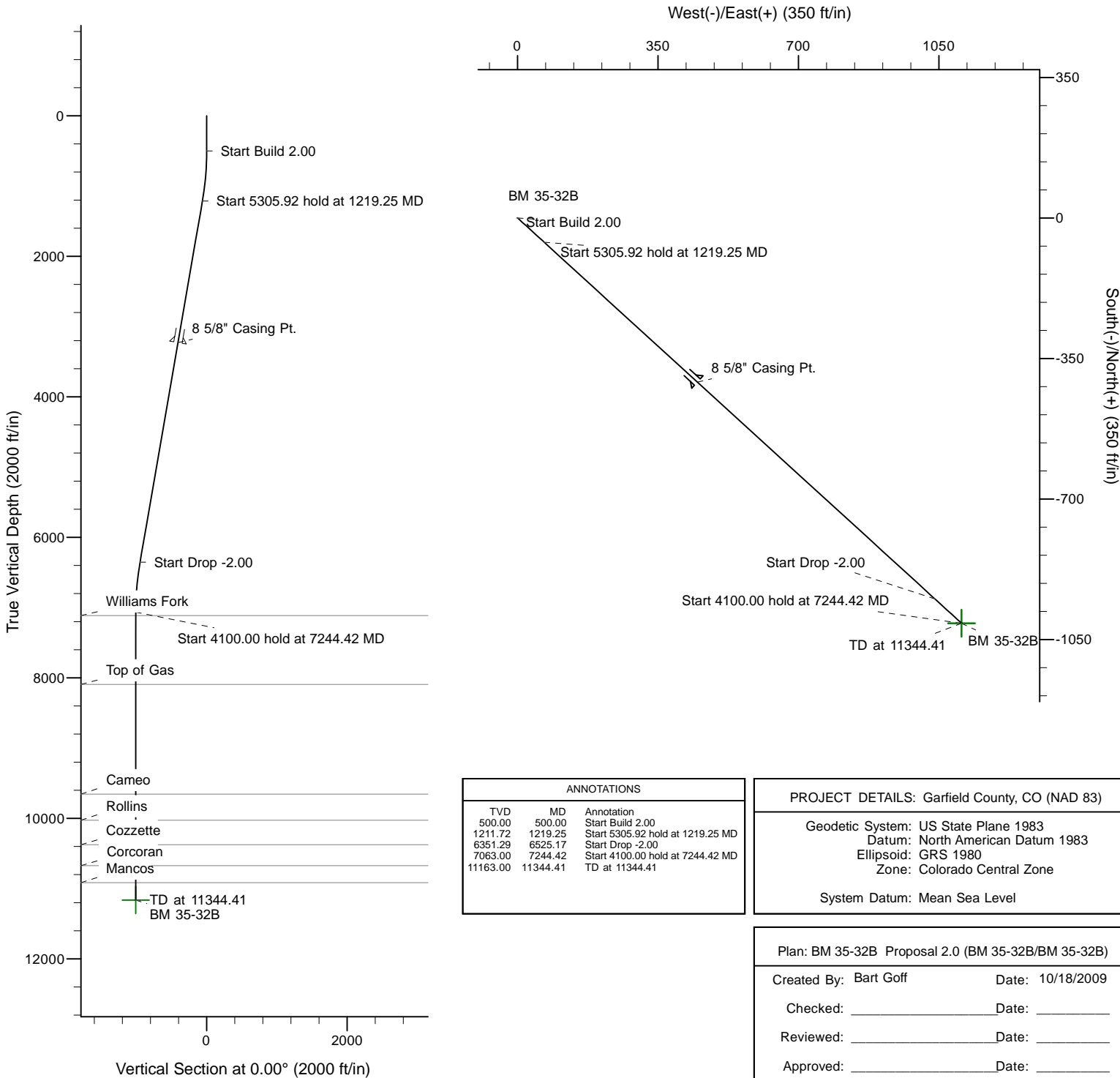
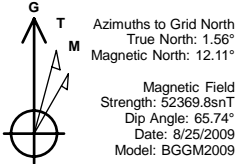
North	Ground Level	9233.00	Longitude
1579624.50	Easting	2303054.60	39° 23' 55.870 N 107° 57' 59.691 W

FORMATION TOP DETAILS

TVDPath	MDPath	Formation
7111.00	7292.41	Williams Fork
8093.00	8274.41	Top of Gas
9654.00	9835.41	Cameo
10027.00	10208.41	Rollins
10375.00	10556.41	Cozzette
10672.00	10853.41	Corcoran
10913.00	11094.41	Mancos

WELLBORE TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Shape
BM 35-32B	11163.00	-1009.55	1106.46	Point



ANNOTATIONS

TVD	MD	Annotation
500.00	500.00	Start Build 2.00
1211.72	1219.25	Start 5305.92 hold at 1219.25 MD
6351.29	6525.17	Start Drop -2.00
7063.00	7244.42	Start 4100.00 hold at 7244.42 MD
11163.00	11344.41	TD at 11344.41

PROJECT DETAILS: Garfield County, CO (NAD 83)

Geodetic System: US State Plane 1983  
Datum: North American Datum 1983  
Ellipsoid: GRS 1980  
Zone: Colorado Central Zone

System Datum: Mean Sea Level

Plan: BM 35-32B Proposal 2.0 (BM 35-32B/BM 35-32B)

Created By: Bart Goff Date: 10/18/2009  
Checked: \_\_\_\_\_ Date: \_\_\_\_\_  
Reviewed: \_\_\_\_\_ Date: \_\_\_\_\_  
Approved: \_\_\_\_\_ Date: \_\_\_\_\_

<b>Database:</b>	.Sperry EDM .16 PRD	<b>Local Co-ordinate Reference:</b>	Well BM 35-32B
<b>Company:</b>	Noble Energy (Rockies)	<b>TVD Reference:</b>	RKB - 24' @ 9257.00ft
<b>Project:</b>	Garfield County, CO (NAD 83)	<b>MD Reference:</b>	RKB - 24' @ 9257.00ft
<b>Site:</b>	Sec. 35-T7S-R95W (BM 35C PAD)	<b>North Reference:</b>	Grid
<b>Well:</b>	BM 35-32B	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	BM 35-32B		
<b>Design:</b>	BM 35-32B Proposal 2.0		

<b>Project</b>	Garfield County, CO (NAD 83)		
<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 Central Zone		Using geodetic scale factor

Site	Sec. 35-T7S-R95W (BM 35C PAD)				
Site Position:		Northing:	1,579,611.24 ft	Latitude:	39° 23' 55.737 N
From:	Map	Easting:	2,303,047.45 ft	Longitude:	107° 57' 59.778 W
Position Uncertainty:	0.00 ft	Slot Radius:	"	Grid Convergence:	-1.56 °

Well	BM 35-32B					
Well Position	+N/-S	0.00 ft	Northing:	1,579,624.50 ft	Latitude:	39° 23' 55.870 N
	+E/-W	0.00 ft	Easting:	2,303,054.60 ft	Longitude:	107° 57' 59.691 W
Position Uncertainty		0.00 ft	Wellhead Elevation:	9,257.00 ft	Ground Level:	9,233.00 ft

<b>Wellbore</b>	BM 35-32B				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	BGGM2009	8/25/2009	10.56	65.74	52,370

<b>Design</b>	BM 35-32B Proposal 2.0			
<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	0.00

<b>Plan Sections</b>										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	TVD System ft	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	Tool Face (°)
0.00	0.00	0.00	0.00	-9,257.00	0.00	0.00	0.00	0.00	0.00	0.00
500.00	0.00	0.00	500.00	-8,757.00	0.00	0.00	0.00	0.00	0.00	0.00
1,219.25	14.38	132.38	1,211.72	-8,045.28	-60.54	66.35	2.00	2.00	0.00	132.38
6,525.17	14.38	132.38	6,351.29	-2,905.71	-949.01	1,040.11	0.00	0.00	0.00	0.00
7,244.42	0.00	2.44	7,063.00	-2,194.00	-1,009.55	1,106.46	2.00	-2.00	0.00	180.00
11,344.41	0.00	2.44	11,163.00	1,906.00	-1,009.55	1,106.46	0.00	0.00	0.00	0.00

<b>Database:</b>	.Sperry EDM .16 PRD	<b>Local Co-ordinate Reference:</b>	Well BM 35-32B
<b>Company:</b>	Noble Energy (Rockies)	<b>TVD Reference:</b>	RKB - 24' @ 9257.00ft
<b>Project:</b>	Garfield County, CO (NAD 83)	<b>MD Reference:</b>	RKB - 24' @ 9257.00ft
<b>Site:</b>	Sec. 35-T7S-R95W (BM 35C PAD)	<b>North Reference:</b>	Grid
<b>Well:</b>	BM 35-32B	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	BM 35-32B		
<b>Design:</b>	BM 35-32B Proposal 2.0		

Planned Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	TVDss ft	+N/-S (ft)	+E/-W (ft)	Map Northing (ft)	Map Easting (ft)	DLS -9,257.00	Vert Section
0.00	0.00	0.00	0.00	-9,257.00	0.00	0.00	1,579,624.50	2,303,054.60	0.00	0.00
100.00	0.00	0.00	100.00	-9,157.00	0.00	0.00	1,579,624.50	2,303,054.60	0.00	0.00
200.00	0.00	0.00	200.00	-9,057.00	0.00	0.00	1,579,624.50	2,303,054.60	0.00	0.00
300.00	0.00	0.00	300.00	-8,957.00	0.00	0.00	1,579,624.50	2,303,054.60	0.00	0.00
400.00	0.00	0.00	400.00	-8,857.00	0.00	0.00	1,579,624.50	2,303,054.60	0.00	0.00
500.00	0.00	0.00	500.00	-8,757.00	0.00	0.00	1,579,624.50	2,303,054.60	0.00	0.00
<b>Start Build 2.00</b>										
600.00	2.00	132.38	599.98	-8,657.02	-1.18	1.29	1,579,623.32	2,303,055.89	2.00	-1.18
700.00	4.00	132.38	699.84	-8,557.16	-4.70	5.16	1,579,619.80	2,303,059.75	2.00	-4.70
800.00	6.00	132.38	799.45	-8,457.55	-10.58	11.59	1,579,613.92	2,303,066.19	2.00	-10.58
900.00	8.00	132.38	898.70	-8,358.30	-18.79	20.60	1,579,605.71	2,303,075.19	2.00	-18.79
1,000.00	10.00	132.38	997.47	-8,259.53	-29.33	32.15	1,579,595.17	2,303,086.75	2.00	-29.33
1,100.00	12.00	132.38	1,095.62	-8,161.38	-42.20	46.25	1,579,582.31	2,303,100.84	2.00	-42.20
1,200.00	14.00	132.38	1,193.06	-8,063.94	-57.36	62.86	1,579,567.15	2,303,117.46	2.00	-57.36
1,219.25	14.38	132.38	1,211.72	-8,045.28	-60.54	66.35	1,579,563.97	2,303,120.94	2.00	-60.54
<b>Start 5305.92 hold at 1219.25 MD</b>										
1,300.00	14.38	132.38	1,289.94	-7,967.06	-74.06	81.17	1,579,550.44	2,303,135.76	0.00	-74.06
1,400.00	14.38	132.38	1,386.80	-7,870.20	-90.80	99.52	1,579,533.70	2,303,154.12	0.00	-90.80
1,500.00	14.38	132.38	1,483.67	-7,773.33	-107.55	117.87	1,579,516.96	2,303,172.47	0.00	-107.55
1,600.00	14.38	132.38	1,580.53	-7,676.47	-124.29	136.23	1,579,500.21	2,303,190.82	0.00	-124.29
1,700.00	14.38	132.38	1,677.40	-7,579.60	-141.04	154.58	1,579,483.47	2,303,209.17	0.00	-141.04
1,800.00	14.38	132.38	1,774.26	-7,482.74	-157.78	172.93	1,579,466.72	2,303,227.52	0.00	-157.78
1,900.00	14.38	132.38	1,871.12	-7,385.88	-174.53	191.28	1,579,449.98	2,303,245.87	0.00	-174.53
2,000.00	14.38	132.38	1,967.99	-7,289.01	-191.27	209.63	1,579,433.24	2,303,264.22	0.00	-191.27
2,100.00	14.38	132.38	2,064.85	-7,192.15	-208.02	227.99	1,579,416.49	2,303,282.58	0.00	-208.02
2,200.00	14.38	132.38	2,161.72	-7,095.28	-224.76	246.34	1,579,399.75	2,303,300.93	0.00	-224.76
2,300.00	14.38	132.38	2,258.58	-6,998.42	-241.51	264.69	1,579,383.00	2,303,319.28	0.00	-241.51
2,400.00	14.38	132.38	2,355.45	-6,901.55	-258.25	283.04	1,579,366.26	2,303,337.63	0.00	-258.25
2,500.00	14.38	132.38	2,452.31	-6,804.69	-275.00	301.40	1,579,349.51	2,303,355.98	0.00	-275.00
2,600.00	14.38	132.38	2,549.18	-6,707.82	-291.74	319.75	1,579,332.77	2,303,374.33	0.00	-291.74
2,700.00	14.38	132.38	2,646.04	-6,610.96	-308.49	338.10	1,579,316.03	2,303,392.68	0.00	-308.49
2,800.00	14.38	132.38	2,742.91	-6,514.09	-325.23	356.45	1,579,299.28	2,303,411.03	0.00	-325.23
2,900.00	14.38	132.38	2,839.77	-6,417.23	-341.98	374.81	1,579,282.54	2,303,429.39	0.00	-341.98
3,000.00	14.38	132.38	2,936.64	-6,320.36	-358.72	393.16	1,579,265.79	2,303,447.74	0.00	-358.72
3,100.00	14.38	132.38	3,033.50	-6,223.50	-375.47	411.51	1,579,249.05	2,303,466.09	0.00	-375.47
3,200.00	14.38	132.38	3,130.37	-6,126.63	-392.21	429.86	1,579,232.31	2,303,484.44	0.00	-392.21
3,300.00	14.38	132.38	3,227.23	-6,029.77	-408.96	448.21	1,579,215.56	2,303,502.79	0.00	-408.96
<b>8 5/8" Casing Pt.</b>										
3,400.00	14.38	132.38	3,324.10	-5,932.90	-425.70	466.57	1,579,198.82	2,303,521.14	0.00	-425.70
3,500.00	14.38	132.38	3,420.96	-5,836.04	-442.45	484.92	1,579,182.07	2,303,539.49	0.00	-442.45
3,600.00	14.38	132.38	3,517.83	-5,739.17	-459.19	503.27	1,579,165.33	2,303,557.85	0.00	-459.19
3,700.00	14.38	132.38	3,614.69	-5,642.31	-475.94	521.62	1,579,148.58	2,303,576.20	0.00	-475.94
3,800.00	14.38	132.38	3,711.56	-5,545.44	-492.68	539.98	1,579,131.84	2,303,594.55	0.00	-492.68
3,900.00	14.38	132.38	3,808.42	-5,448.58	-509.43	558.33	1,579,115.10	2,303,612.90	0.00	-509.43
4,000.00	14.38	132.38	3,905.29	-5,351.71	-526.17	576.68	1,579,098.35	2,303,631.25	0.00	-526.17

<b>Database:</b>	.Sperry EDM .16 PRD	<b>Local Co-ordinate Reference:</b>	Well BM 35-32B
<b>Company:</b>	Noble Energy (Rockies)	<b>TVD Reference:</b>	RKB - 24' @ 9257.00ft
<b>Project:</b>	Garfield County, CO (NAD 83)	<b>MD Reference:</b>	RKB - 24' @ 9257.00ft
<b>Site:</b>	Sec. 35-T7S-R95W (BM 35C PAD)	<b>North Reference:</b>	Grid
<b>Well:</b>	BM 35-32B	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	BM 35-32B		
<b>Design:</b>	BM 35-32B Proposal 2.0		

Planned Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	TVDss ft	+N/-S (ft)	+E/-W (ft)	Map Northing (ft)	Map Easting (ft)	DLS -5,254.85	Vert Section
4,100.00	14.38	132.38	4,002.15	-5,254.85	-542.92	595.03	1,579,081.61	2,303,649.60	0.00	-542.92
4,200.00	14.38	132.38	4,099.02	-5,157.98	-559.66	613.39	1,579,064.86	2,303,667.95	0.00	-559.66
4,300.00	14.38	132.38	4,195.88	-5,061.12	-576.41	631.74	1,579,048.12	2,303,686.31	0.00	-576.41
4,400.00	14.38	132.38	4,292.75	-4,964.25	-593.15	650.09	1,579,031.38	2,303,704.66	0.00	-593.15
4,500.00	14.38	132.38	4,389.61	-4,867.39	-609.90	668.44	1,579,014.63	2,303,723.01	0.00	-609.90
4,600.00	14.38	132.38	4,486.48	-4,770.52	-626.64	686.79	1,578,997.89	2,303,741.36	0.00	-626.64
4,700.00	14.38	132.38	4,583.34	-4,673.66	-643.39	705.15	1,578,981.14	2,303,759.71	0.00	-643.39
4,800.00	14.38	132.38	4,680.21	-4,576.79	-660.13	723.50	1,578,964.40	2,303,778.06	0.00	-660.13
4,900.00	14.38	132.38	4,777.07	-4,479.93	-676.88	741.85	1,578,947.65	2,303,796.41	0.00	-676.88
5,000.00	14.38	132.38	4,873.94	-4,383.06	-693.62	760.20	1,578,930.91	2,303,814.77	0.00	-693.62
5,100.00	14.38	132.38	4,970.80	-4,286.20	-710.37	778.56	1,578,914.17	2,303,833.12	0.00	-710.37
5,200.00	14.38	132.38	5,067.66	-4,189.34	-727.11	796.91	1,578,897.42	2,303,851.47	0.00	-727.11
5,300.00	14.38	132.38	5,164.53	-4,092.47	-743.86	815.26	1,578,880.68	2,303,869.82	0.00	-743.86
5,400.00	14.38	132.38	5,261.39	-3,995.61	-760.60	833.61	1,578,863.93	2,303,888.17	0.00	-760.60
5,500.00	14.38	132.38	5,358.26	-3,898.74	-777.35	851.97	1,578,847.19	2,303,906.52	0.00	-777.35
5,600.00	14.38	132.38	5,455.12	-3,801.88	-794.09	870.32	1,578,830.45	2,303,924.87	0.00	-794.09
5,700.00	14.38	132.38	5,551.99	-3,705.01	-810.84	888.67	1,578,813.70	2,303,943.23	0.00	-810.84
5,800.00	14.38	132.38	5,648.85	-3,608.15	-827.58	907.02	1,578,796.96	2,303,961.58	0.00	-827.58
5,900.00	14.38	132.38	5,745.72	-3,511.28	-844.33	925.37	1,578,780.21	2,303,979.93	0.00	-844.33
6,000.00	14.38	132.38	5,842.58	-3,414.42	-861.07	943.73	1,578,763.47	2,303,998.28	0.00	-861.07
6,100.00	14.38	132.38	5,939.45	-3,317.55	-877.82	962.08	1,578,746.73	2,304,016.63	0.00	-877.82
6,200.00	14.38	132.38	6,036.31	-3,220.69	-894.56	980.43	1,578,729.98	2,304,034.98	0.00	-894.56
6,300.00	14.38	132.38	6,133.18	-3,123.82	-911.31	998.78	1,578,713.24	2,304,053.33	0.00	-911.31
6,400.00	14.38	132.38	6,230.04	-3,026.96	-928.05	1,017.14	1,578,696.49	2,304,071.69	0.00	-928.05
6,500.00	14.38	132.38	6,326.91	-2,930.09	-944.80	1,035.49	1,578,679.75	2,304,090.04	0.00	-944.80
6,525.17	14.38	132.38	6,351.29	-2,905.71	-949.01	1,040.11	1,578,675.53	2,304,094.66	0.00	-949.01
Start Drop -2.00										
6,600.00	12.89	132.38	6,424.01	-2,832.99	-960.90	1,053.14	1,578,663.64	2,304,107.69	2.00	-960.90
6,700.00	10.89	132.38	6,521.86	-2,735.14	-974.79	1,068.36	1,578,649.76	2,304,122.90	2.00	-974.79
6,800.00	8.89	132.38	6,620.37	-2,636.63	-986.36	1,081.04	1,578,638.19	2,304,135.59	2.00	-986.36
6,900.00	6.89	132.38	6,719.42	-2,537.58	-995.61	1,091.18	1,578,628.94	2,304,145.73	2.00	-995.61
7,000.00	4.89	132.38	6,818.88	-2,438.12	-1,002.53	1,098.76	1,578,622.02	2,304,153.30	2.00	-1,002.53
7,100.00	2.89	132.38	6,918.65	-2,338.35	-1,007.10	1,103.77	1,578,617.45	2,304,158.31	2.00	-1,007.10
7,200.00	0.89	132.38	7,018.59	-2,238.41	-1,009.32	1,106.20	1,578,615.23	2,304,160.75	2.00	-1,009.32
7,244.42	0.00	0.00	7,063.00	-2,194.00	-1,009.55	1,106.46	1,578,615.00	2,304,161.00	2.00	-1,009.55
Start 4100.00 hold at 7244.42 MD										
7,292.41	0.00	2.44	7,111.00	-2,146.00	-1,009.55	1,106.46	1,578,615.00	2,304,161.00	0.00	-1,009.55
Williams Fork										
7,300.00	0.00	2.44	7,118.59	-2,138.41	-1,009.55	1,106.46	1,578,615.00	2,304,161.00	0.00	-1,009.55
7,400.00	0.00	2.44	7,218.59	-2,038.41	-1,009.55	1,106.46	1,578,615.00	2,304,161.00	0.00	-1,009.55
7,500.00	0.00	2.44	7,318.59	-1,938.41	-1,009.55	1,106.46	1,578,615.00	2,304,161.00	0.00	-1,009.55
7,600.00	0.00	2.44	7,418.59	-1,838.41	-1,009.55	1,106.46	1,578,615.00	2,304,161.00	0.00	-1,009.55
7,700.00	0.00	2.44	7,518.59	-1,738.41	-1,009.55	1,106.46	1,578,615.00	2,304,161.00	0.00	-1,009.55
7,800.00	0.00	2.44	7,618.59	-1,638.41	-1,009.55	1,106.46	1,578,615.00	2,304,161.00	0.00	-1,009.55
7,900.00	0.00	2.44	7,718.59	-1,538.41	-1,009.55	1,106.46	1,578,615.00	2,304,161.00	0.00	-1,009.55

<b>Database:</b>	.Sperry EDM .16 PRD	<b>Local Co-ordinate Reference:</b>	Well BM 35-32B
<b>Company:</b>	Noble Energy (Rockies)	<b>TVD Reference:</b>	RKB - 24' @ 9257.00ft
<b>Project:</b>	Garfield County, CO (NAD 83)	<b>MD Reference:</b>	RKB - 24' @ 9257.00ft
<b>Site:</b>	Sec. 35-T7S-R95W (BM 35C PAD)	<b>North Reference:</b>	Grid
<b>Well:</b>	BM 35-32B	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	BM 35-32B		
<b>Design:</b>	BM 35-32B Proposal 2.0		

Planned Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	TVDss ft	+N/-S (ft)	+E/-W (ft)	Map Northing (ft)	Map Easting (ft)	DLS -1,438.41	Vert Section
8,000.00	0.00	2.44	7,818.59	-1,438.41	-1,009.55	1,106.46	1,578,615.00	2,304,161.00	0.00	-1,009.55
8,100.00	0.00	2.44	7,918.59	-1,338.41	-1,009.55	1,106.46	1,578,615.00	2,304,161.00	0.00	-1,009.55
8,200.00	0.00	2.44	8,018.59	-1,238.41	-1,009.55	1,106.46	1,578,615.00	2,304,161.00	0.00	-1,009.55
8,274.41	0.00	2.44	8,093.00	-1,164.00	-1,009.55	1,106.46	1,578,615.00	2,304,161.00	0.00	-1,009.55
Top of Gas										
8,300.00	0.00	2.44	8,118.59	-1,138.41	-1,009.55	1,106.46	1,578,615.00	2,304,161.00	0.00	-1,009.55
8,400.00	0.00	2.44	8,218.59	-1,038.41	-1,009.55	1,106.46	1,578,615.00	2,304,161.00	0.00	-1,009.55
8,500.00	0.00	2.44	8,318.59	-938.41	-1,009.55	1,106.46	1,578,615.00	2,304,161.00	0.00	-1,009.55
8,600.00	0.00	2.44	8,418.59	-838.41	-1,009.55	1,106.46	1,578,615.00	2,304,161.00	0.00	-1,009.55
8,700.00	0.00	2.44	8,518.59	-738.41	-1,009.55	1,106.46	1,578,615.00	2,304,161.00	0.00	-1,009.55
8,800.00	0.00	2.44	8,618.59	-638.41	-1,009.55	1,106.46	1,578,615.00	2,304,161.00	0.00	-1,009.55
8,900.00	0.00	2.44	8,718.59	-538.41	-1,009.55	1,106.46	1,578,615.00	2,304,161.00	0.00	-1,009.55
9,000.00	0.00	2.44	8,818.59	-438.41	-1,009.55	1,106.46	1,578,615.00	2,304,161.00	0.00	-1,009.55
9,100.00	0.00	2.44	8,918.59	-338.41	-1,009.55	1,106.46	1,578,615.00	2,304,161.00	0.00	-1,009.55
9,200.00	0.00	2.44	9,018.59	-238.41	-1,009.55	1,106.46	1,578,615.00	2,304,161.00	0.00	-1,009.55
9,300.00	0.00	2.44	9,118.59	-138.41	-1,009.55	1,106.46	1,578,615.00	2,304,161.00	0.00	-1,009.55
9,400.00	0.00	2.44	9,218.59	-38.41	-1,009.55	1,106.46	1,578,615.00	2,304,161.00	0.00	-1,009.55
9,500.00	0.00	2.44	9,318.59	61.59	-1,009.55	1,106.46	1,578,615.00	2,304,161.00	0.00	-1,009.55
9,600.00	0.00	2.44	9,418.59	161.59	-1,009.55	1,106.46	1,578,615.00	2,304,161.00	0.00	-1,009.55
9,700.00	0.00	2.44	9,518.59	261.59	-1,009.55	1,106.46	1,578,615.00	2,304,161.00	0.00	-1,009.55
9,800.00	0.00	2.44	9,618.59	361.59	-1,009.55	1,106.46	1,578,615.00	2,304,161.00	0.00	-1,009.55
9,835.41	0.00	2.44	9,654.00	397.00	-1,009.55	1,106.46	1,578,615.00	2,304,161.00	0.00	-1,009.55
Cameo										
9,900.00	0.00	2.44	9,718.59	461.59	-1,009.55	1,106.46	1,578,615.00	2,304,161.00	0.00	-1,009.55
10,000.00	0.00	2.44	9,818.59	561.59	-1,009.55	1,106.46	1,578,615.00	2,304,161.00	0.00	-1,009.55
10,100.00	0.00	2.44	9,918.59	661.59	-1,009.55	1,106.46	1,578,615.00	2,304,161.00	0.00	-1,009.55
10,200.00	0.00	2.44	10,018.59	761.59	-1,009.55	1,106.46	1,578,615.00	2,304,161.00	0.00	-1,009.55
10,208.41	0.00	2.44	10,027.00	770.00	-1,009.55	1,106.46	1,578,615.00	2,304,161.00	0.00	-1,009.55
Rollins										
10,300.00	0.00	2.44	10,118.59	861.59	-1,009.55	1,106.46	1,578,615.00	2,304,161.00	0.00	-1,009.55
10,400.00	0.00	2.44	10,218.59	961.59	-1,009.55	1,106.46	1,578,615.00	2,304,161.00	0.00	-1,009.55
10,500.00	0.00	2.44	10,318.59	1,061.59	-1,009.55	1,106.46	1,578,615.00	2,304,161.00	0.00	-1,009.55
10,556.41	0.00	2.44	10,375.00	1,118.00	-1,009.55	1,106.46	1,578,615.00	2,304,161.00	0.00	-1,009.55
Cozzette										
10,600.00	0.00	2.44	10,418.59	1,161.59	-1,009.55	1,106.46	1,578,615.00	2,304,161.00	0.00	-1,009.55
10,700.00	0.00	2.44	10,518.59	1,261.59	-1,009.55	1,106.46	1,578,615.00	2,304,161.00	0.00	-1,009.55
10,800.00	0.00	2.44	10,618.59	1,361.59	-1,009.55	1,106.46	1,578,615.00	2,304,161.00	0.00	-1,009.55
10,853.41	0.00	2.44	10,672.00	1,415.00	-1,009.55	1,106.46	1,578,615.00	2,304,161.00	0.00	-1,009.55
Corcoran										
10,900.00	0.00	2.44	10,718.59	1,461.59	-1,009.55	1,106.46	1,578,615.00	2,304,161.00	0.00	-1,009.55
11,000.00	0.00	2.44	10,818.59	1,561.59	-1,009.55	1,106.46	1,578,615.00	2,304,161.00	0.00	-1,009.55
11,094.41	0.00	2.44	10,913.00	1,656.00	-1,009.55	1,106.46	1,578,615.00	2,304,161.00	0.00	-1,009.55
Mancos										
11,100.00	0.00	2.44	10,918.59	1,661.59	-1,009.55	1,106.46	1,578,615.00	2,304,161.00	0.00	-1,009.55
11,200.00	0.00	2.44	11,018.59	1,761.59	-1,009.55	1,106.46	1,578,615.00	2,304,161.00	0.00	-1,009.55

<b>Database:</b>	.Sperry EDM .16 PRD	<b>Local Co-ordinate Reference:</b>	Well BM 35-32B
<b>Company:</b>	Noble Energy (Rockies)	<b>TVD Reference:</b>	RKB - 24' @ 9257.00ft
<b>Project:</b>	Garfield County, CO (NAD 83)	<b>MD Reference:</b>	RKB - 24' @ 9257.00ft
<b>Site:</b>	Sec. 35-T7S-R95W (BM 35C PAD)	<b>North Reference:</b>	Grid
<b>Well:</b>	BM 35-32B	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	BM 35-32B		
<b>Design:</b>	BM 35-32B Proposal 2.0		

Planned Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	TVDss ft	+N/-S (ft)	+E/-W (ft)	Map Northing (ft)	Map Easting (ft)	DLS 1,861.59	Vert Section
11,300.00	0.00	2.44	11,118.59	1,861.59	-1,009.55	1,106.46	1,578,615.00	2,304,161.00	0.00	-1,009.55
11,344.41	0.00	2.44	11,163.00	1,906.00	-1,009.55	1,106.46	1,578,615.00	2,304,161.00	0.00	-1,009.55
TD at 11344.41 - BM 35-32B Plan #1 BH Tgt										

Targets								
Target Name								
- hit/miss target		Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting
- Shape		(°)	(°)	(ft)	(ft)	(ft)	(ft)	(ft)
BM 35-32B Plan #1 BH Tgt		0.00	2.43	11,163.00	-1,009.55	1,106.46	1,578,615.00	2,304,161.00
- plan hits target center								
- Point								

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")	
3,300.00	3,227.23	8 5/8" Casing Pt.	8-5/8	11	

Formations							
Measured Depth (ft)	Vertical Depth (ft)	Vertical Depth SS ft	Name	Lithology	Dip (°)	Dip Direction (°)	
9,835.41	9,654.00		Cameo				
7,292.41	7,111.00		Williams Fork				
8,274.41	8,093.00		Top of Gas				
10,853.41	10,672.00		Corcoran				
11,094.41	10,913.00		Mancos				
10,208.41	10,027.00		Rollins				
10,556.41	10,375.00		Cozzette				

Plan Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
500.00	500.00	0.00	0.00	Start Build 2.00
1,219.25	1,211.72	-60.54	66.35	Start 5305.92 hold at 1219.25 MD
6,525.17	6,351.29	-949.01	1,040.11	Start Drop -2.00
7,244.42	7,063.00	-1,009.55	1,106.46	Start 4100.00 hold at 7244.42 MD
11,344.41	11,163.00	-1,009.55	1,106.46	TD at 11344.41

# Sperry Drilling

## Anticollision Summary Report

<b>Company:</b>	Noble Energy (Rockies)	<b>Local Co-ordinate Reference:</b>	Well BM 35-32B
<b>Project:</b>	Garfield County, CO (NAD 83)	<b>TVD Reference:</b>	RKB - 24' @ 9257.00ft
<b>Reference Site:</b>	Sec. 35-T7S-R95W (BM 35C PAD)	<b>MD Reference:</b>	RKB - 24' @ 9257.00ft
<b>Site Error:</b>	0.00ft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	BM 35-32B	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	BM 35-32B	<b>Database:</b>	.Sperry EDM .16 PRD
<b>Reference Design:</b>	BM 35-32B Proposal 2.0	<b>Offset TVD Reference:</b>	Offset Datum

<b>Reference</b>	BM 35-32B Proposal 2.0		
<b>Filter type:</b>	GLOBAL FILTER APPLIED: All wellpaths within 200'+ 100/1000 of reference		
<b>Interpolation Method:</b>	MD Interval 100.00ft	<b>Error Model:</b>	ISCWSA
<b>Depth Range:</b>	Unlimited	<b>Scan Method:</b>	Closest Approach 3D
<b>Results Limited by:</b>	Maximum center-center distance of 1,334.44ft	<b>Error Surface:</b>	Elliptical Conic
<b>Warning Levels Evaluated at:</b>	2.00 Sigma		

<b>Survey Tool Program</b>	<b>Date</b>	2/13/2010			
<b>From (ft)</b>	<b>To (ft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>	
0.00	11,344.41	BM 35-32B Proposal 2.0 (BM 35-32B)	MWD	MWD - Standard	

Summary						
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
Sec. 35-T7S-R95W (BM 35C PAD)						
BM 35-12 (Existing Well) - BM 35-12 - Plan #1 Proposal	500.00	503.00	7.43	5.46	3.762 CC, ES	
BM 35-12 (Existing Well) - BM 35-12 - Plan #1 Proposal	600.00	602.98	8.01	5.60	3.331 SF	
BM 35-21A - BM 35-21A - BM 35-21A Proposal 2.0	200.00	200.00	31.50	30.88	50.774 CC, ES	
BM 35-21A - BM 35-21A - BM 35-21A Proposal 2.0	600.00	596.17	51.64	49.21	21.273 SF	
BM 35-21B - BM 35-21B - BM 35-21B Proposal 2.0	200.00	200.00	17.74	17.11	28.589 CC, ES	
BM 35-21B - BM 35-21B - BM 35-21B Proposal 2.0	500.00	498.99	25.87	23.90	13.104 SF	
BM 35-21C - BM 35-21C - BM 35-21C Proposal 2.0	200.00	200.00	9.44	8.82	15.220 CC, ES	
BM 35-21C - BM 35-21C - BM 35-21C Proposal 2.0	400.00	399.39	14.25	12.75	9.488 SF	
BM 35-21D (Existing Well) - BM 35-21D - BM 35-21D	105.02	108.02	14.15	13.91	59.481 CC, ES	
BM 35-21D (Existing Well) - BM 35-21D - BM 35-21D	500.00	501.30	30.30	28.29	15.125 SF	
BM 35-22A - BM 35-22A - BM 35-22A Proposal 2.0	200.00	200.00	37.50	36.88	60.456 CC, ES	
BM 35-22A - BM 35-22A - BM 35-22A Proposal 2.0	1,200.00	1,188.39	120.40	114.77	21.386 SF	
BM 35-22B - BM 35-22B - BM 35-22B Proposal 2.0	200.00	200.00	29.99	29.37	48.336 CC, ES	
BM 35-22B - BM 35-22B - BM 35-22B Proposal 2.0	1,300.00	1,283.11	133.78	127.22	20.374 SF	
BM 35-22C - BM 35-22C - BM 35-22C Proposal 2.0	233.60	233.60	22.56	21.78	29.239 CC	
BM 35-22C - BM 35-22C - BM 35-22C Proposal 2.0	300.00	299.87	22.70	21.64	21.484 ES	
BM 35-22C - BM 35-22C - BM 35-22C Proposal 2.0	1,000.00	995.46	47.10	42.80	10.966 SF	
BM 35-31A - BM 35-31A - BM 35-31A Proposal 2.0	200.00	200.00	38.64	38.02	62.286 CC, ES	
BM 35-31A - BM 35-31A - BM 35-31A Proposal 2.0	600.00	595.71	55.63	53.22	23.075 SF	
BM 35-31B - BM 35-31B - BM 35-31B Proposal 2.0	234.48	234.48	24.43	22.50	12.646 CC	
BM 35-31B - BM 35-31B - BM 35-31B Proposal 2.0	300.00	299.89	24.54	21.88	9.235 ES	
BM 35-31B - BM 35-31B - BM 35-31B Proposal 2.0	500.00	499.13	28.17	24.29	7.270 SF	
BM 35-31C - BM 35-31C - BM 35-31C Proposal 2.0	233.84	233.84	37.50	36.73	48.552 CC	
BM 35-31C - BM 35-31C - BM 35-31C Proposal 2.0	300.00	299.78	37.65	36.59	35.422 ES	
BM 35-31C - BM 35-31C - BM 35-31C Proposal 2.0	11,344.41	11,259.90	999.97	935.04	15.400 SF	
BM 35-31D - BM 35-31D - BM 35-31D Proposal 2.0	200.00	200.00	29.99	29.37	48.336 CC	
BM 35-31D - BM 35-31D - BM 35-31D Proposal 2.0	300.00	299.81	30.29	29.24	28.689 ES	
BM 35-31D - BM 35-31D - BM 35-31D Proposal 2.0	11,344.41	11,264.36	713.38	648.87	11.058 SF	
BM 35-32A (Existing Well) - BM 35-32A - BM 35-32A	445.37	448.67	18.63	16.89	10.718 CC, ES	
BM 35-32A (Existing Well) - BM 35-32A - BM 35-32A	3,800.00	3,795.49	159.47	128.58	5.162 SF	
BM 35-32C - BM 35-32C - BM 35-32C Proposal 2.0	200.00	200.00	7.52	6.90	12.119 CC	
BM 35-32C - BM 35-32C - BM 35-32C Proposal 2.0	300.00	299.91	7.93	6.87	7.526 ES	
BM 35-32C - BM 35-32C - BM 35-32C Proposal 2.0	11,344.41	11,387.92	315.77	250.37	4.828 SF	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



# Sperry Drilling

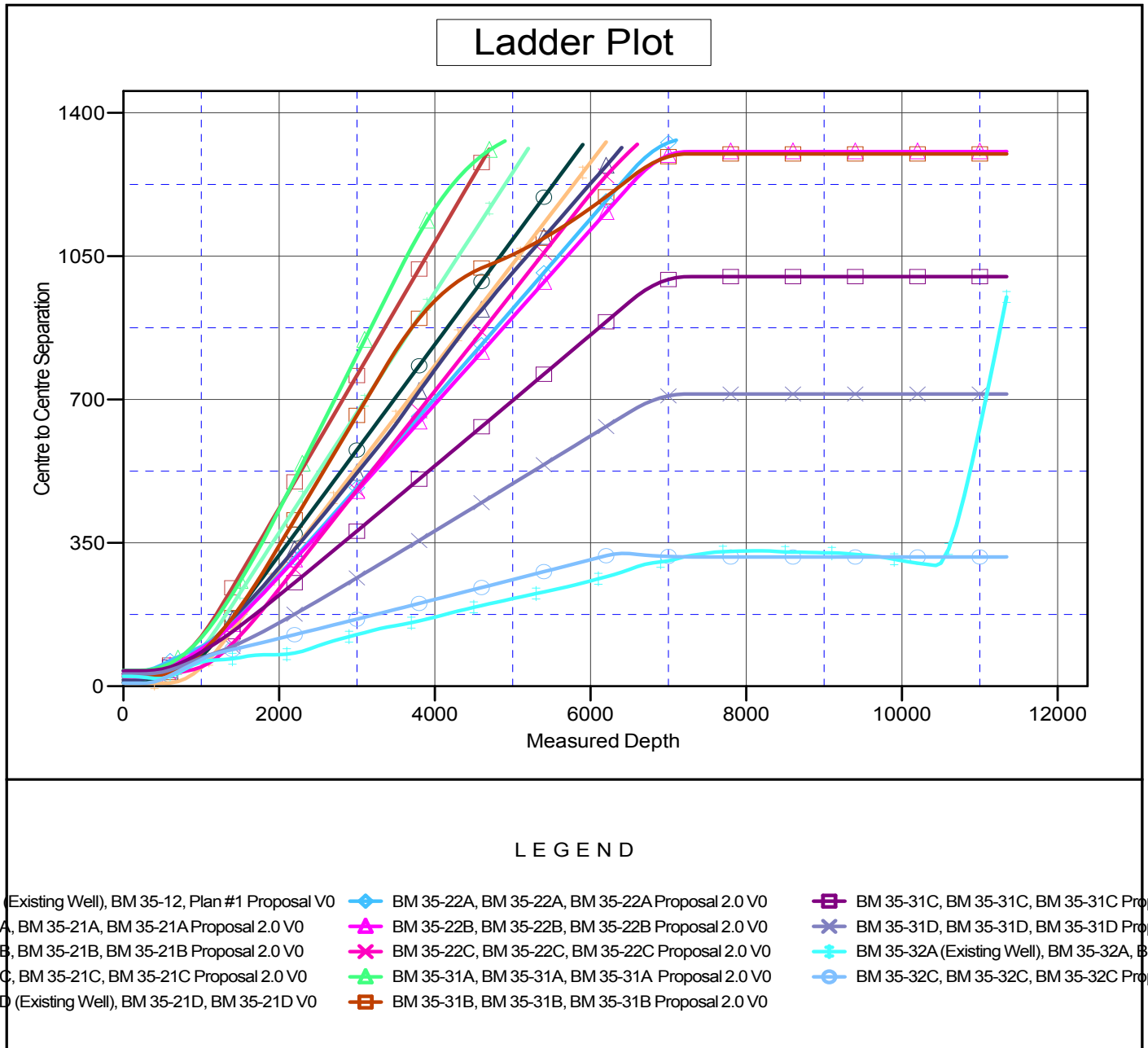
## Anticollision Summary Report

**Company:** Noble Energy (Rockies)  
**Project:** Garfield County, CO (NAD 83)  
**Reference Site:** Sec. 35-T7S-R95W (BM 35C PAD)  
**Site Error:** 0.00ft  
**Reference Well:** BM 35-32B  
**Well Error:** 0.00ft  
**Reference Wellbore:** BM 35-32B  
**Reference Design:** BM 35-32B Proposal 2.0

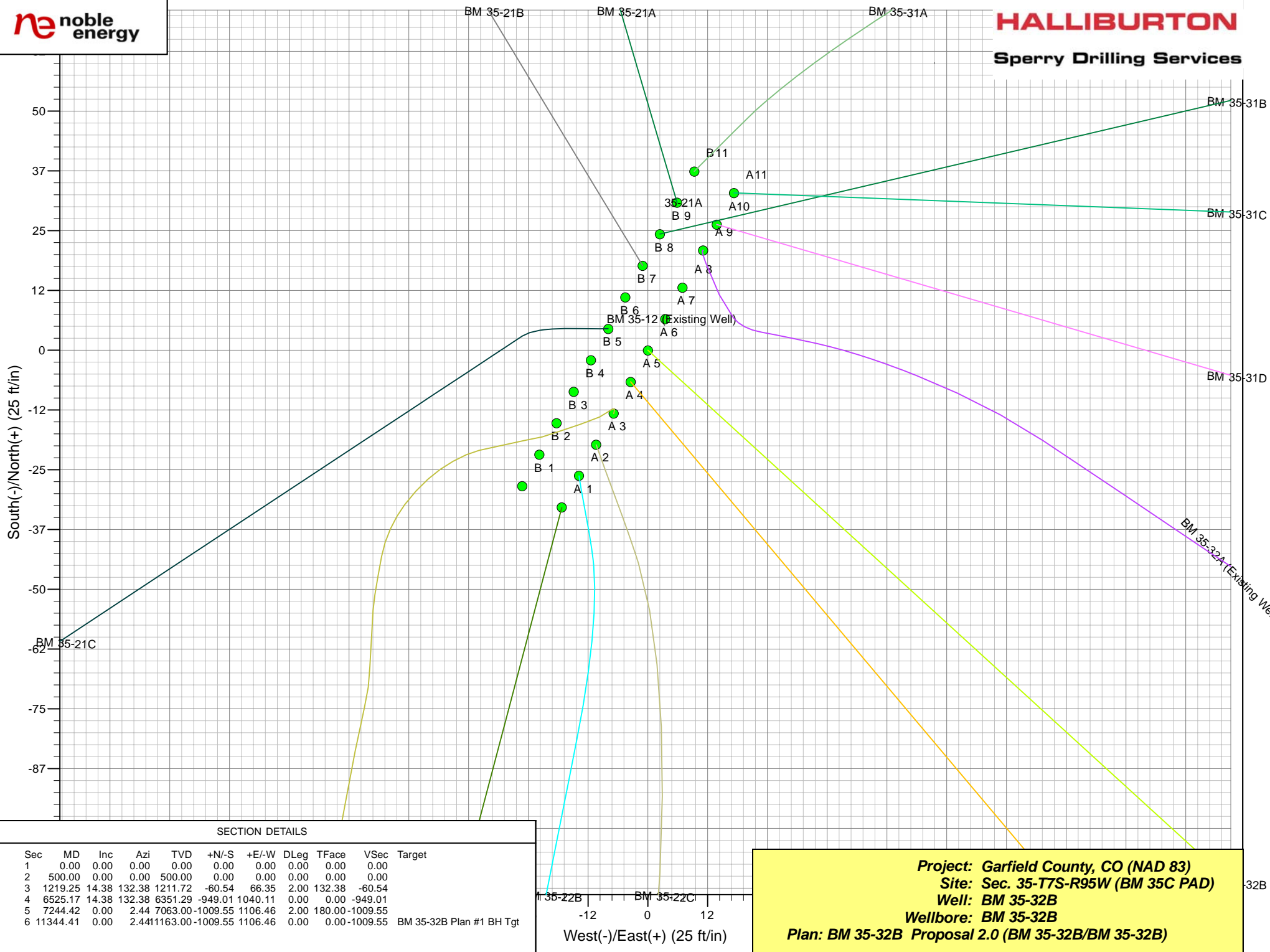
**Local Co-ordinate Reference:** Well BM 35-32B  
**TVD Reference:** RKB - 24' @ 9257.00ft  
**MD Reference:** RKB - 24' @ 9257.00ft  
**North Reference:** Grid  
**Survey Calculation Method:** Minimum Curvature  
**Output errors are at** 2.00 sigma  
**Database:** .Sperry EDM .16 PRD  
**Offset TVD Reference:** Offset Datum

Reference Depths are relative to RKB - 24' @ 9257.00ft  
 Offset Depths are relative to Offset Datum  
 Central Meridian is 105° 30' 0.000 W °

Coordinates are relative to: BM 35-32B  
 Coordinate System is US State Plane 1983, Colorado Central Zone  
 Grid Convergence at Surface is: -1.56°



CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

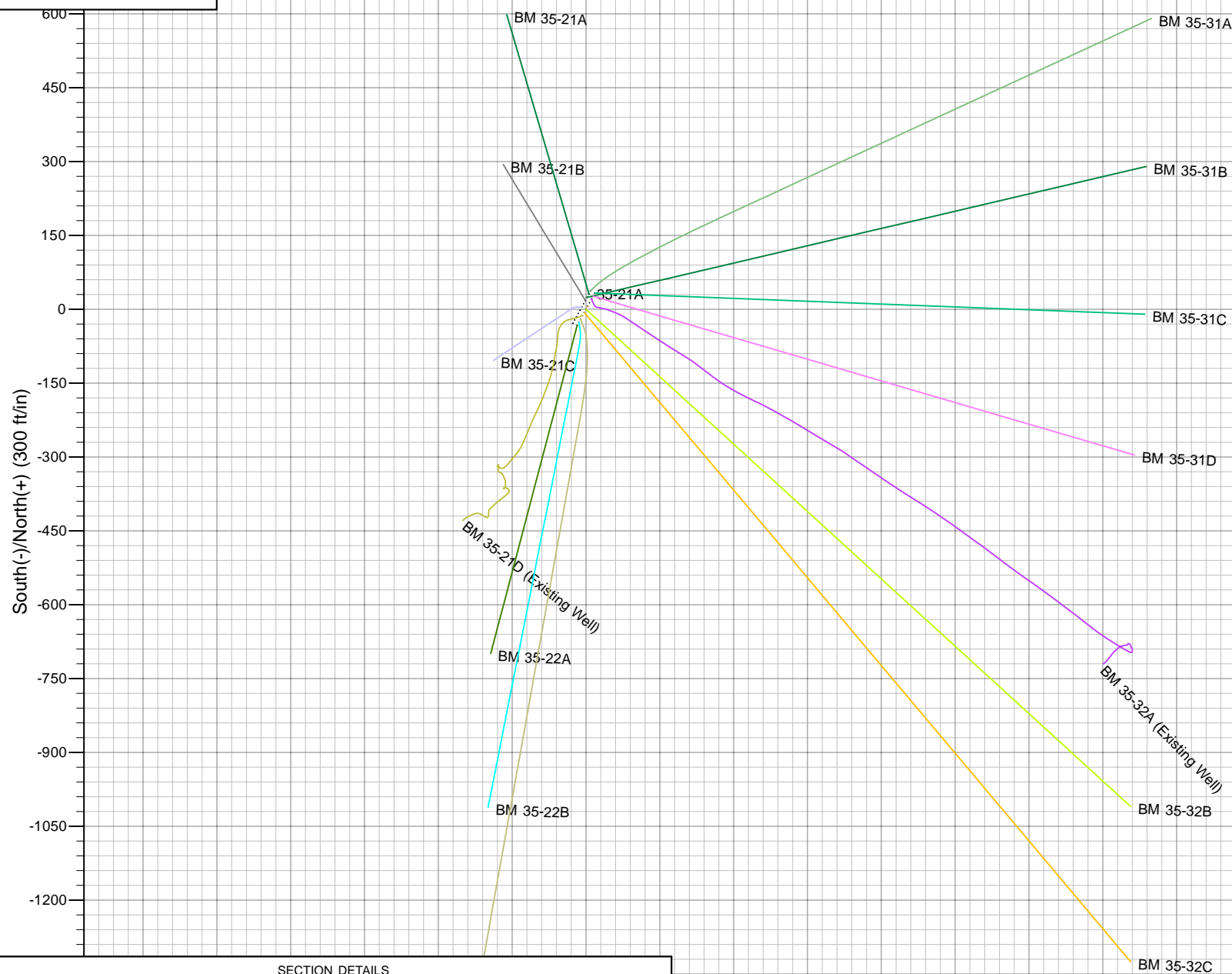


**SECTION DETAILS**

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	
3	1219.25	14.38	132.38	1211.72	-60.54	66.35	2.00	132.38	-60.54	
4	6525.17	14.38	132.38	6351.29	-949.01	1040.11	0.00	0.00	-949.01	
5	7244.42	0.00	2.44	7063.00	-1009.55	1106.46	2.00	180.00	-1009.55	
6	11344.41	0.00	2.44	1163.00	-1009.55	1106.46	0.00	0.00	-1009.55	BM 35-32B Plan #1 BH Tgt

West(-)/East(+) (25 ft/in)

**Project: Garfield County, CO (NAD 83)**  
**Site: Sec. 35-T7S-R95W (BM 35C PAD)**  
**Well: BM 35-32B**  
**Wellbore: BM 35-32B**  
**Plan: BM 35-32B Proposal 2.0 (BM 35-32B/BM 35-32B)**



**SECTION DETAILS**

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
1	0.00	0.00	0.00	-9257.00	0.00	0.00	0.00	0.00	0.00	
2	500.00	0.00	0.00	-8757.00	0.00	0.00	0.00	0.00	0.00	
3	1219.25	14.38	132.38	-8045.28	-60.54	66.35	2.00	132.38	-60.54	
4	6525.17	14.38	132.38	-2905.71	-949.01	1040.11	0.00	0.00	-949.01	
5	7244.42	0.00	2.44	-2194.00	-1009.55	1106.46	2.00	180.00	-1009.55	
6	11344.41	0.00	2.44	1906.00	-1009.55	1106.46	0.00	0.00	-1009.55	BM 35-32B Plan #1 BH Tgt

300 450 600  
West(-)/East(+) (300 ft/in)

**Project:** Garfield County, CO (NAD 83)  
**Site:** Sec. 35-T7S-R95W (BM 35C PAD)  
**Well:** BM 35-32B  
**Wellbore:** BM 35-32B  
**Plan:** BM 35-32B Proposal 2.0 (BM 35-32B/BM 35-32B)