



Noble Energy (Rockies)

Garfield County, CO (NAD 83)

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

BM 35-31A

BM 35-31A

Plan: BM 35-31A 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 35-31A
Wellbore: BM 35-31A
Plan: BM 35-31A 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
225.00	0.00	0.00	225.00	0.00	0.00	0.00	0.00	0.00
558.33	5.00	45.00	557.91	10.28	10.28	1.50	45.00	10.28
1839.95	23.84	65.21	1794.02	159.79	287.54	1.50	25.09	159.79
3354.09	23.84	65.21	3178.93	416.44	843.21	0.00	0.00	416.44
4943.64	0.00	2.43	4723.00	553.13	1139.16	1.50	180.00	553.13
711443.64	0.00	2.43	11223.00	553.13	1139.16	0.00	0.00	553.13

WELL DETAILS: BM 35-31A

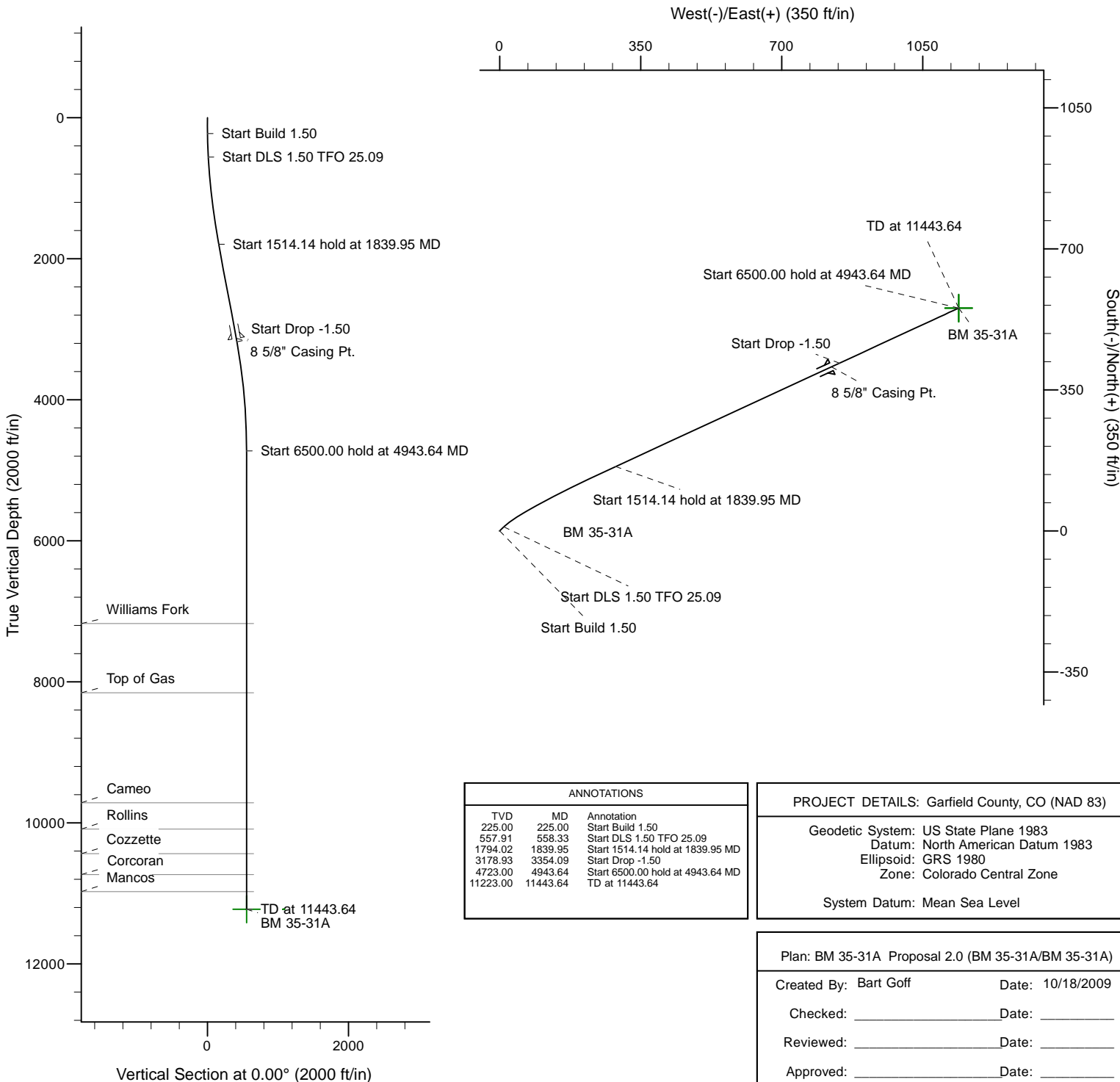
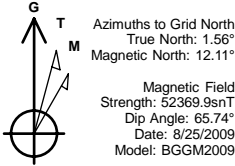
North	East	Ground Level	Latitude	Longitude
1579661.90	2303064.30	9233.00	39° 23' 56.242 N	107° 57' 59.581 W

FORMATION TOP DETAILS

TVDPath	MDPath	Formation
7171.00	7391.64	Williams Fork
8153.00	8373.64	Top of Gas
9714.00	9934.64	Cameo
10087.00	10307.64	Rollins
10435.00	10655.64	Cozzette
10732.00	10952.64	Corcoran
10973.00	11193.64	Mancos

WELLBORE TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Shape
BM 35-31A	11223.00	553.13	1139.16	Polygon



ANNOTATIONS

TVD	MD	Annotation
225.00	225.00	Start Build 1.50
557.91	558.33	Start DLS 1.50 TFO 25.09
1794.02	1839.95	Start 1514.14 hold at 1839.95 MD
3178.93	3354.09	Start Drop -1.50
4723.00	4943.64	Start 6500.00 hold at 4943.64 MD
11223.00	11443.64	TD at 11443.64

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 35-31A Proposal 2.0 (BM 35-31A/BM 35-31A)

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

Database:	.Sperry EDM .16 PRD	Local Co-ordinate Reference:	Well BM 35-31A
Company:	Noble Energy (Rockies)	TVD Reference:	24 @ 9257.00ft (24'KB+9233 Pad Ele)
Project:	Garfield County, CO (NAD 83)	MD Reference:	24 @ 9257.00ft (24'KB+9233 Pad Ele)
Site:	Sec. 35-T7S-R95W (BM 35C PAD)	North Reference:	Grid
Well:	BM 35-31A	Survey Calculation Method:	Minimum Curvature
Wellbore:	BM 35-31A		
Design:	BM 35-31A Proposal 2.0		

Project	Garfield County, CO (NAD 83)		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	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 35-31A					
Well Position	+N/-S	0.00 ft	Northing:	1,579,661.90 ft	Latitude:	39° 23' 56.242 N
	+E/-W	0.00 ft	Easting:	2,303,064.30 ft	Longitude:	107° 57' 59.581 W
Position Uncertainty		0.00 ft	Wellhead Elevation:	0.00 ft	Ground Level:	9,233.00 ft

Wellbore	BM 35-31A				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	BGGM2009	8/25/2009	10.56	65.74	52,370

Design	BM 35-31A Proposal 2.0			
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	0.00

Plan Sections										
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
225.00	0.00	0.00	225.00	-9,032.00	0.00	0.00	0.00	0.00	0.00	0.00
558.33	5.00	45.00	557.91	-8,699.09	10.28	10.28	1.50	1.50	0.00	45.00
1,839.95	23.84	65.21	1,794.02	-7,462.98	159.79	287.54	1.50	1.47	1.58	25.09
3,354.09	23.84	65.21	3,178.93	-6,078.07	416.44	843.21	0.00	0.00	0.00	0.00
4,943.64	0.00	2.43	4,723.00	-4,534.00	553.13	1,139.16	1.50	-1.50	0.00	180.00
11,443.64	0.00	2.43	11,223.00	1,966.00	553.13	1,139.16	0.00	0.00	0.00	0.00

Database:	.Sperry EDM .16 PRD	Local Co-ordinate Reference:	Well BM 35-31A
Company:	Noble Energy (Rockies)	TVD Reference:	24 @ 9257.00ft (24'KB+9233 Pad Ele)
Project:	Garfield County, CO (NAD 83)	MD Reference:	24 @ 9257.00ft (24'KB+9233 Pad Ele)
Site:	Sec. 35-T7S-R95W (BM 35C PAD)	North Reference:	Grid
Well:	BM 35-31A	Survey Calculation Method:	Minimum Curvature
Wellbore:	BM 35-31A		
Design:	BM 35-31A 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	1,579,661.90	2,303,064.30	0.00	0.00
100.00	0.00	0.00	100.00	-9,157.00	0.00	0.00	1,579,661.90	2,303,064.30	0.00	0.00
200.00	0.00	0.00	200.00	-9,057.00	0.00	0.00	1,579,661.90	2,303,064.30	0.00	0.00
225.00	0.00	0.00	225.00	-9,032.00	0.00	0.00	1,579,661.90	2,303,064.30	0.00	0.00
Start Build 1.50										
300.00	1.13	45.00	300.00	-8,957.00	0.52	0.52	1,579,662.42	2,303,064.82	1.50	0.52
400.00	2.63	45.00	399.94	-8,857.06	2.83	2.83	1,579,664.73	2,303,067.13	1.50	2.83
500.00	4.13	45.00	499.76	-8,757.24	7.00	7.00	1,579,668.90	2,303,071.30	1.50	7.00
558.33	5.00	45.00	557.91	-8,699.09	10.28	10.28	1,579,672.18	2,303,074.58	1.50	10.28
Start DLS 1.50 TFO 25.09										
600.00	5.57	47.73	599.40	-8,657.60	12.92	13.06	1,579,674.82	2,303,077.36	1.50	12.92
700.00	6.98	52.43	698.80	-8,558.20	19.89	21.47	1,579,681.79	2,303,085.77	1.50	19.89
800.00	8.42	55.55	797.89	-8,459.11	27.74	32.33	1,579,689.64	2,303,096.63	1.50	27.74
900.00	9.88	57.75	896.62	-8,360.38	36.47	45.63	1,579,698.37	2,303,109.92	1.50	36.47
1,000.00	11.35	59.39	994.90	-8,262.10	46.06	61.36	1,579,707.96	2,303,125.65	1.50	46.06
1,100.00	12.83	60.66	1,092.68	-8,164.32	56.51	79.51	1,579,718.41	2,303,143.80	1.50	56.51
1,200.00	14.31	61.67	1,189.89	-8,067.11	67.81	100.06	1,579,729.71	2,303,164.36	1.50	67.81
1,300.00	15.79	62.50	1,286.46	-7,970.54	79.96	123.01	1,579,741.86	2,303,187.31	1.50	79.96
1,400.00	17.28	63.18	1,382.32	-7,874.68	92.95	148.34	1,579,754.85	2,303,212.63	1.50	92.95
1,500.00	18.77	63.76	1,477.41	-7,779.59	106.77	176.03	1,579,768.66	2,303,240.32	1.50	106.77
1,600.00	20.26	64.26	1,571.66	-7,685.34	121.40	206.06	1,579,783.29	2,303,270.35	1.50	121.40
1,700.00	21.75	64.69	1,665.01	-7,591.99	136.84	238.41	1,579,798.73	2,303,302.70	1.50	136.84
1,800.00	23.25	65.07	1,757.39	-7,499.61	153.08	273.06	1,579,814.97	2,303,337.35	1.50	153.08
1,839.95	23.84	65.21	1,794.02	-7,462.98	159.79	287.54	1,579,821.68	2,303,351.83	1.50	159.79
Start 1514.14 hold at 1839.95 MD										
1,900.00	23.84	65.21	1,848.94	-7,408.06	169.97	309.58	1,579,831.86	2,303,373.86	0.00	169.97
2,000.00	23.84	65.21	1,940.41	-7,316.59	186.92	346.28	1,579,848.81	2,303,410.56	0.00	186.92
2,100.00	23.84	65.21	2,031.87	-7,225.13	203.87	382.98	1,579,865.76	2,303,447.26	0.00	203.87
2,200.00	23.84	65.21	2,123.34	-7,133.66	220.82	419.67	1,579,882.71	2,303,483.95	0.00	220.82
2,300.00	23.84	65.21	2,214.80	-7,042.20	237.77	456.37	1,579,899.66	2,303,520.65	0.00	237.77
2,400.00	23.84	65.21	2,306.27	-6,950.73	254.72	493.07	1,579,916.61	2,303,557.35	0.00	254.72
2,500.00	23.84	65.21	2,397.74	-6,859.26	271.67	529.77	1,579,933.56	2,303,594.04	0.00	271.67
2,600.00	23.84	65.21	2,489.20	-6,767.80	288.62	566.47	1,579,950.50	2,303,630.74	0.00	288.62
2,700.00	23.84	65.21	2,580.67	-6,676.33	305.57	603.17	1,579,967.45	2,303,667.43	0.00	305.57
2,800.00	23.84	65.21	2,672.13	-6,584.87	322.52	639.86	1,579,984.40	2,303,704.13	0.00	322.52
2,900.00	23.84	65.21	2,763.60	-6,493.40	339.47	676.56	1,580,001.35	2,303,740.83	0.00	339.47
3,000.00	23.84	65.21	2,855.06	-6,401.94	356.42	713.26	1,580,018.30	2,303,777.52	0.00	356.42
3,100.00	23.84	65.21	2,946.53	-6,310.47	373.37	749.96	1,580,035.25	2,303,814.22	0.00	373.37
3,200.00	23.84	65.21	3,037.99	-6,219.01	390.32	786.66	1,580,052.20	2,303,850.92	0.00	390.32
3,300.00	23.84	65.21	3,129.46	-6,127.54	407.27	823.36	1,580,069.15	2,303,887.61	0.00	407.27
8 5/8" Casing Pt.										
3,354.09	23.84	65.21	3,178.93	-6,078.07	416.44	843.21	1,580,078.32	2,303,907.46	0.00	416.44
Start Drop -1.50										
3,400.00	23.15	65.21	3,221.04	-6,035.96	424.11	859.82	1,580,085.99	2,303,924.08	1.50	424.11
3,500.00	21.65	65.21	3,313.48	-5,943.52	440.09	894.42	1,580,101.97	2,303,958.68	1.50	440.09

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Project:	Garfield County, CO (NAD 83)	MD Reference:	24 @ 9257.00ft (24'KB+9233 Pad Ele)
Site:	Sec. 35-T7S-R95W (BM 35C PAD)	North Reference:	Grid
Well:	BM 35-31A	Survey Calculation Method:	Minimum Curvature
Wellbore:	BM 35-31A		
Design:	BM 35-31A 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 -5,850.10	Vert Section
3,600.00	20.15	65.21	3,406.90	-5,850.10	455.05	926.82	1,580,116.93	2,303,991.07	1.50	455.05
3,700.00	18.65	65.21	3,501.22	-5,755.78	468.98	956.98	1,580,130.86	2,304,021.23	1.50	468.98
3,800.00	17.15	65.21	3,596.37	-5,660.63	481.88	984.89	1,580,143.75	2,304,049.14	1.50	481.88
3,900.00	15.65	65.21	3,692.30	-5,564.70	493.72	1,010.53	1,580,155.59	2,304,074.77	1.50	493.72
4,000.00	14.15	65.21	3,788.93	-5,468.07	504.50	1,033.88	1,580,166.38	2,304,098.12	1.50	504.50
4,100.00	12.65	65.21	3,886.20	-5,370.80	514.22	1,054.92	1,580,176.10	2,304,119.17	1.50	514.22
4,200.00	11.15	65.21	3,984.05	-5,272.95	522.87	1,073.65	1,580,184.74	2,304,137.89	1.50	522.87
4,300.00	9.65	65.21	4,082.40	-5,174.60	530.44	1,090.04	1,580,192.32	2,304,154.29	1.50	530.44
4,400.00	8.15	65.21	4,181.19	-5,075.81	536.93	1,104.10	1,580,198.81	2,304,168.34	1.50	536.93
4,500.00	6.65	65.21	4,280.36	-4,976.64	542.34	1,115.79	1,580,204.21	2,304,180.04	1.50	542.34
4,600.00	5.15	65.21	4,379.82	-4,877.18	546.65	1,125.13	1,580,208.52	2,304,189.38	1.50	546.65
4,700.00	3.65	65.21	4,479.53	-4,777.47	549.87	1,132.11	1,580,211.74	2,304,196.35	1.50	549.87
4,800.00	2.15	65.21	4,579.39	-4,677.61	552.00	1,136.71	1,580,213.87	2,304,200.95	1.50	552.00
4,900.00	0.65	65.21	4,679.36	-4,577.64	553.02	1,138.93	1,580,214.90	2,304,203.17	1.50	553.02
4,943.64	0.00	2.43	4,723.00	-4,534.00	553.13	1,139.16	1,580,215.00	2,304,203.40	1.50	553.13
Start 6500.00 hold at 4943.64 MD										
5,000.00	0.00	2.43	4,779.36	-4,477.64	553.13	1,139.16	1,580,215.00	2,304,203.40	0.00	553.13
5,100.00	0.00	2.43	4,879.36	-4,377.64	553.13	1,139.16	1,580,215.00	2,304,203.40	0.00	553.13
5,200.00	0.00	2.43	4,979.36	-4,277.64	553.13	1,139.16	1,580,215.00	2,304,203.40	0.00	553.13
5,300.00	0.00	2.43	5,079.36	-4,177.64	553.13	1,139.16	1,580,215.00	2,304,203.40	0.00	553.13
5,400.00	0.00	2.43	5,179.36	-4,077.64	553.13	1,139.16	1,580,215.00	2,304,203.40	0.00	553.13
5,500.00	0.00	2.43	5,279.36	-3,977.64	553.13	1,139.16	1,580,215.00	2,304,203.40	0.00	553.13
5,600.00	0.00	2.43	5,379.36	-3,877.64	553.13	1,139.16	1,580,215.00	2,304,203.40	0.00	553.13
5,700.00	0.00	2.43	5,479.36	-3,777.64	553.13	1,139.16	1,580,215.00	2,304,203.40	0.00	553.13
5,800.00	0.00	2.43	5,579.36	-3,677.64	553.13	1,139.16	1,580,215.00	2,304,203.40	0.00	553.13
5,900.00	0.00	2.43	5,679.36	-3,577.64	553.13	1,139.16	1,580,215.00	2,304,203.40	0.00	553.13
6,000.00	0.00	2.43	5,779.36	-3,477.64	553.13	1,139.16	1,580,215.00	2,304,203.40	0.00	553.13
6,100.00	0.00	2.43	5,879.36	-3,377.64	553.13	1,139.16	1,580,215.00	2,304,203.40	0.00	553.13
6,200.00	0.00	2.43	5,979.36	-3,277.64	553.13	1,139.16	1,580,215.00	2,304,203.40	0.00	553.13
6,300.00	0.00	2.43	6,079.36	-3,177.64	553.13	1,139.16	1,580,215.00	2,304,203.40	0.00	553.13
6,400.00	0.00	2.43	6,179.36	-3,077.64	553.13	1,139.16	1,580,215.00	2,304,203.40	0.00	553.13
6,500.00	0.00	2.43	6,279.36	-2,977.64	553.13	1,139.16	1,580,215.00	2,304,203.40	0.00	553.13
6,600.00	0.00	2.43	6,379.36	-2,877.64	553.13	1,139.16	1,580,215.00	2,304,203.40	0.00	553.13
6,700.00	0.00	2.43	6,479.36	-2,777.64	553.13	1,139.16	1,580,215.00	2,304,203.40	0.00	553.13
6,800.00	0.00	2.43	6,579.36	-2,677.64	553.13	1,139.16	1,580,215.00	2,304,203.40	0.00	553.13
6,900.00	0.00	2.43	6,679.36	-2,577.64	553.13	1,139.16	1,580,215.00	2,304,203.40	0.00	553.13
7,000.00	0.00	2.43	6,779.36	-2,477.64	553.13	1,139.16	1,580,215.00	2,304,203.40	0.00	553.13
7,100.00	0.00	2.43	6,879.36	-2,377.64	553.13	1,139.16	1,580,215.00	2,304,203.40	0.00	553.13
7,200.00	0.00	2.43	6,979.36	-2,277.64	553.13	1,139.16	1,580,215.00	2,304,203.40	0.00	553.13
7,300.00	0.00	2.43	7,079.36	-2,177.64	553.13	1,139.16	1,580,215.00	2,304,203.40	0.00	553.13
7,391.64	0.00	2.43	7,171.00	-2,086.00	553.13	1,139.16	1,580,215.00	2,304,203.40	0.00	553.13
Williams Fork										
7,400.00	0.00	2.43	7,179.36	-2,077.64	553.13	1,139.16	1,580,215.00	2,304,203.40	0.00	553.13
7,500.00	0.00	2.43	7,279.36	-1,977.64	553.13	1,139.16	1,580,215.00	2,304,203.40	0.00	553.13
7,600.00	0.00	2.43	7,379.36	-1,877.64	553.13	1,139.16	1,580,215.00	2,304,203.40	0.00	553.13

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Wellbore:	BM 35-31A		
Design:	BM 35-31A 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 -1,777.64	Vert Section
7,700.00	0.00	2.43	7,479.36	-1,777.64	553.13	1,139.16	1,580,215.00	2,304,203.40	0.00	553.13
7,800.00	0.00	2.43	7,579.36	-1,677.64	553.13	1,139.16	1,580,215.00	2,304,203.40	0.00	553.13
7,900.00	0.00	2.43	7,679.36	-1,577.64	553.13	1,139.16	1,580,215.00	2,304,203.40	0.00	553.13
8,000.00	0.00	2.43	7,779.36	-1,477.64	553.13	1,139.16	1,580,215.00	2,304,203.40	0.00	553.13
8,100.00	0.00	2.43	7,879.36	-1,377.64	553.13	1,139.16	1,580,215.00	2,304,203.40	0.00	553.13
8,200.00	0.00	2.43	7,979.36	-1,277.64	553.13	1,139.16	1,580,215.00	2,304,203.40	0.00	553.13
8,300.00	0.00	2.43	8,079.36	-1,177.64	553.13	1,139.16	1,580,215.00	2,304,203.40	0.00	553.13
8,373.64	0.00	2.43	8,153.00	-1,104.00	553.13	1,139.16	1,580,215.00	2,304,203.40	0.00	553.13
Top of Gas										
8,400.00	0.00	2.43	8,179.36	-1,077.64	553.13	1,139.16	1,580,215.00	2,304,203.40	0.00	553.13
8,500.00	0.00	2.43	8,279.36	-977.64	553.13	1,139.16	1,580,215.00	2,304,203.40	0.00	553.13
8,600.00	0.00	2.43	8,379.36	-877.64	553.13	1,139.16	1,580,215.00	2,304,203.40	0.00	553.13
8,700.00	0.00	2.43	8,479.36	-777.64	553.13	1,139.16	1,580,215.00	2,304,203.40	0.00	553.13
8,800.00	0.00	2.43	8,579.36	-677.64	553.13	1,139.16	1,580,215.00	2,304,203.40	0.00	553.13
8,900.00	0.00	2.43	8,679.36	-577.64	553.13	1,139.16	1,580,215.00	2,304,203.40	0.00	553.13
9,000.00	0.00	2.43	8,779.36	-477.64	553.13	1,139.16	1,580,215.00	2,304,203.40	0.00	553.13
9,100.00	0.00	2.43	8,879.36	-377.64	553.13	1,139.16	1,580,215.00	2,304,203.40	0.00	553.13
9,200.00	0.00	2.43	8,979.36	-277.64	553.13	1,139.16	1,580,215.00	2,304,203.40	0.00	553.13
9,300.00	0.00	2.43	9,079.36	-177.64	553.13	1,139.16	1,580,215.00	2,304,203.40	0.00	553.13
9,400.00	0.00	2.43	9,179.36	-77.64	553.13	1,139.16	1,580,215.00	2,304,203.40	0.00	553.13
9,500.00	0.00	2.43	9,279.36	22.36	553.13	1,139.16	1,580,215.00	2,304,203.40	0.00	553.13
9,600.00	0.00	2.43	9,379.36	122.36	553.13	1,139.16	1,580,215.00	2,304,203.40	0.00	553.13
9,700.00	0.00	2.43	9,479.36	222.36	553.13	1,139.16	1,580,215.00	2,304,203.40	0.00	553.13
9,800.00	0.00	2.43	9,579.36	322.36	553.13	1,139.16	1,580,215.00	2,304,203.40	0.00	553.13
9,900.00	0.00	2.43	9,679.36	422.36	553.13	1,139.16	1,580,215.00	2,304,203.40	0.00	553.13
9,934.64	0.00	2.43	9,714.00	457.00	553.13	1,139.16	1,580,215.00	2,304,203.40	0.00	553.13
Cameo										
10,000.00	0.00	2.43	9,779.36	522.36	553.13	1,139.16	1,580,215.00	2,304,203.40	0.00	553.13
10,100.00	0.00	2.43	9,879.36	622.36	553.13	1,139.16	1,580,215.00	2,304,203.40	0.00	553.13
10,200.00	0.00	2.43	9,979.36	722.36	553.13	1,139.16	1,580,215.00	2,304,203.40	0.00	553.13
10,300.00	0.00	2.43	10,079.36	822.36	553.13	1,139.16	1,580,215.00	2,304,203.40	0.00	553.13
10,307.64	0.00	2.43	10,087.00	830.00	553.13	1,139.16	1,580,215.00	2,304,203.40	0.00	553.13
Rollins										
10,400.00	0.00	2.43	10,179.36	922.36	553.13	1,139.16	1,580,215.00	2,304,203.40	0.00	553.13
10,500.00	0.00	2.43	10,279.36	1,022.36	553.13	1,139.16	1,580,215.00	2,304,203.40	0.00	553.13
10,600.00	0.00	2.43	10,379.36	1,122.36	553.13	1,139.16	1,580,215.00	2,304,203.40	0.00	553.13
10,655.64	0.00	2.43	10,435.00	1,178.00	553.13	1,139.16	1,580,215.00	2,304,203.40	0.00	553.13
Cozzette										
10,700.00	0.00	2.43	10,479.36	1,222.36	553.13	1,139.16	1,580,215.00	2,304,203.40	0.00	553.13
10,800.00	0.00	2.43	10,579.36	1,322.36	553.13	1,139.16	1,580,215.00	2,304,203.40	0.00	553.13
10,900.00	0.00	2.43	10,679.36	1,422.36	553.13	1,139.16	1,580,215.00	2,304,203.40	0.00	553.13
10,952.64	0.00	2.43	10,732.00	1,475.00	553.13	1,139.16	1,580,215.00	2,304,203.40	0.00	553.13
Corcoran										
11,000.00	0.00	2.43	10,779.36	1,522.36	553.13	1,139.16	1,580,215.00	2,304,203.40	0.00	553.13
11,100.00	0.00	2.43	10,879.36	1,622.36	553.13	1,139.16	1,580,215.00	2,304,203.40	0.00	553.13

Database:	.Sperry EDM .16 PRD	Local Co-ordinate Reference:	Well BM 35-31A
Company:	Noble Energy (Rockies)	TVD Reference:	24 @ 9257.00ft (24'KB+9233 Pad Ele)
Project:	Garfield County, CO (NAD 83)	MD Reference:	24 @ 9257.00ft (24'KB+9233 Pad Ele)
Site:	Sec. 35-T7S-R95W (BM 35C PAD)	North Reference:	Grid
Well:	BM 35-31A	Survey Calculation Method:	Minimum Curvature
Wellbore:	BM 35-31A		
Design:	BM 35-31A 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 1,716.00	Vert Section
11,193.64	0.00	2.43	10,973.00	1,716.00	553.13	1,139.16	1,580,215.00	2,304,203.40	0.00	553.13
Mancos										
11,200.00	0.00	2.43	10,979.36	1,722.36	553.13	1,139.16	1,580,215.00	2,304,203.40	0.00	553.13
11,300.00	0.00	2.43	11,079.36	1,822.36	553.13	1,139.16	1,580,215.00	2,304,203.40	0.00	553.13
11,400.00	0.00	2.43	11,179.36	1,922.36	553.13	1,139.16	1,580,215.00	2,304,203.40	0.00	553.13
11,443.64	0.00	2.43	11,223.00	1,966.00	553.13	1,139.16	1,580,215.00	2,304,203.40	0.00	553.13
TD at 11443.64 - BM 35-31A										

Targets									
Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)		
BM 35-31A	0.00	2.43	11,223.00	553.13	1,139.16	1,580,215.00	2,304,203.40		
- plan hits target center									
- Polygon									
Point 1			11,223.00	1,067.89	2,501.30	1,580,729.74	2,305,565.47		
Point 2			11,223.00	1,084.87	2,101.66	1,580,746.72	2,305,165.85		

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")	
3,300.00	3,129.46	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 (°)
9,934.64	9,714.00		Cameo			
7,391.64	7,171.00		Williams Fork			
10,655.64	10,435.00		Cozzette			
11,193.64	10,973.00		Mancos			
10,307.64	10,087.00		Rollins			
8,373.64	8,153.00		Top of Gas			
10,952.64	10,732.00		Corcoran			

Plan Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
225.00	225.00	0.00	0.00	Start Build 1.50
558.33	557.91	10.28	10.28	Start DLS 1.50 TFO 25.09
1,839.95	1,794.02	159.79	287.54	Start 1514.14 hold at 1839.95 MD
3,354.09	3,178.93	416.44	843.21	Start Drop -1.50
4,943.64	4,723.00	553.13	1,139.16	Start 6500.00 hold at 4943.64 MD
11,443.64	11,223.00	553.13	1,139.16	TD at 11443.64

Sperry Drilling

Anticollision Summary Report

Company:	Noble Energy (Rockies)	Local Co-ordinate Reference:	Well BM 35-31A
Project:	Garfield County, CO (NAD 83)	TVD Reference:	24 @ 9257.00ft (24'KB+9233 Pad Ele)
Reference Site:	Sec. 35-T7S-R95W (BM 35C PAD)	MD Reference:	24 @ 9257.00ft (24'KB+9233 Pad Ele)
Site Error:	0.00ft	North Reference:	Grid
Reference Well:	BM 35-31A	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	BM 35-31A	Database:	.Sperry EDM .16 PRD
Reference Design:	BM 35-31A Proposal 2.0	Offset TVD Reference:	Offset Datum

Reference	BM 35-31A Proposal 2.0		
Filter type:	GLOBAL FILTER APPLIED: All wellpaths within 200'+ 100/1000 of reference		
Interpolation Method:	MD Interval 100.00ft	Error Model:	ISCWSA
Depth Range:	Unlimited	Scan Method:	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 1,344.36ft	Error Surface:	Elliptical Conic
Warning Levels Evaluated at:	2.00 Sigma		

Survey Tool Program	Date	2/13/2010			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
0.00	11,443.64	BM 35-31A Proposal 2.0 (BM 35-31A)	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
Sec. 35-T7S-R95W (BM 35C PAD)						
BM 35-12 (Existing Well) - BM 35-12 - Plan #1 Proposal	200.00	203.00	31.51	30.89	50.251 CC, ES	
BM 35-12 (Existing Well) - BM 35-12 - Plan #1 Proposal	600.00	602.40	47.83	45.39	19.606 SF	
BM 35-21A - BM 35-21A - BM 35-21A Proposal 2.0	300.00	300.12	7.31	6.24	6.835 CC, ES	
BM 35-21A - BM 35-21A - BM 35-21A Proposal 2.0	400.00	400.13	9.01	7.49	5.922 SF	
BM 35-21B - BM 35-21B - BM 35-21B Proposal 2.0	200.00	200.00	22.47	21.85	36.217 CC	
BM 35-21B - BM 35-21B - BM 35-21B Proposal 2.0	300.00	300.21	22.82	21.75	21.358 ES	
BM 35-21B - BM 35-21B - BM 35-21B Proposal 2.0	500.00	500.17	29.44	27.46	14.871 SF	
BM 35-21C - BM 35-21C - BM 35-21C Proposal 2.0	200.00	200.00	37.50	36.88	60.456 CC, ES	
BM 35-21C - BM 35-21C - BM 35-21C Proposal 2.0	500.00	497.67	54.06	52.09	27.431 SF	
BM 35-21D (Existing Well) - BM 35-21D - BM 35-21D	108.94	111.94	52.42	52.16	203.228 CC, ES	
BM 35-21D (Existing Well) - BM 35-21D - BM 35-21D	600.00	597.01	89.48	86.99	36.031 SF	
BM 35-22A - BM 35-22A - BM 35-22A Proposal 2.0	200.00	200.00	75.56	74.94	121.808 CC, ES	
BM 35-22A - BM 35-22A - BM 35-22A Proposal 2.0	800.00	783.48	160.07	156.74	48.024 SF	
BM 35-22B - BM 35-22B - BM 35-22B Proposal 2.0	200.00	200.00	68.11	67.49	109.792 CC, ES	
BM 35-22B - BM 35-22B - BM 35-22B Proposal 2.0	700.00	685.74	124.79	121.91	43.332 SF	
BM 35-22C - BM 35-22C - BM 35-22C Proposal 2.0	200.00	200.00	60.77	60.15	97.953 CC, ES	
BM 35-22C - BM 35-22C - BM 35-22C Proposal 2.0	700.00	693.41	100.13	97.29	35.199 SF	
BM 35-31B - BM 35-31B - BM 35-31B Proposal 2.0	300.00	300.25	14.80	12.15	5.581 CC	
BM 35-31B - BM 35-31B - BM 35-31B Proposal 2.0	400.00	400.46	15.54	12.12	4.547 ES	
BM 35-31B - BM 35-31B - BM 35-31B Proposal 2.0	11,443.64	11,403.84	300.96	227.71	4.108 SF	
BM 35-31C - BM 35-31C - BM 35-31C Proposal 2.0	258.05	258.03	9.36	8.48	10.652 CC	
BM 35-31C - BM 35-31C - BM 35-31C Proposal 2.0	300.00	299.89	9.54	8.48	9.000 ES	
BM 35-31C - BM 35-31C - BM 35-31C Proposal 2.0	400.00	399.64	11.23	9.73	7.524 SF	
BM 35-31D - BM 35-31D - BM 35-31D Proposal 2.0	200.00	200.00	12.05	11.43	19.432 CC, ES	
BM 35-31D - BM 35-31D - BM 35-31D Proposal 2.0	400.00	399.46	16.87	15.38	11.291 SF	
BM 35-32A (Existing Well) - BM 35-32A - BM 35-32A	119.95	122.97	16.56	16.28	59.669 CC, ES	
BM 35-32A (Existing Well) - BM 35-32A - BM 35-32A	400.00	401.54	28.36	26.83	18.554 SF	
BM 35-32B - BM 35-32B - BM 35-32B Proposal 2.0	200.00	200.00	38.64	38.02	62.286 CC, ES	
BM 35-32B - BM 35-32B - BM 35-32B Proposal 2.0	600.00	598.77	55.79	53.37	23.102 SF	
BM 35-32C - BM 35-32C - BM 35-32C Proposal 2.0	200.00	200.00	45.97	45.35	74.100 CC, ES	
BM 35-32C - BM 35-32C - BM 35-32C Proposal 2.0	600.00	593.91	76.16	73.71	31.059 SF	

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

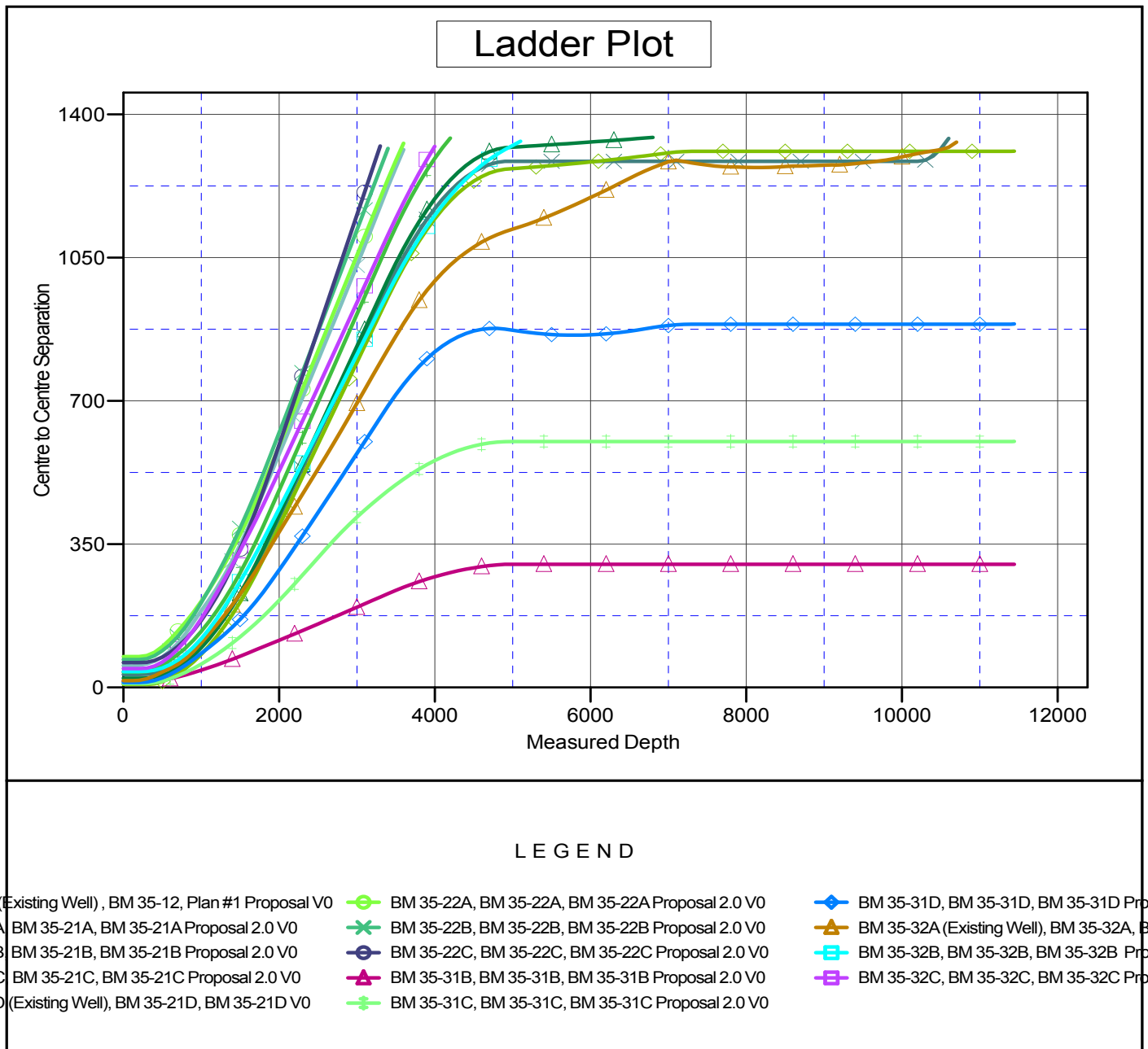
Sperry Drilling

Anticollision Summary Report

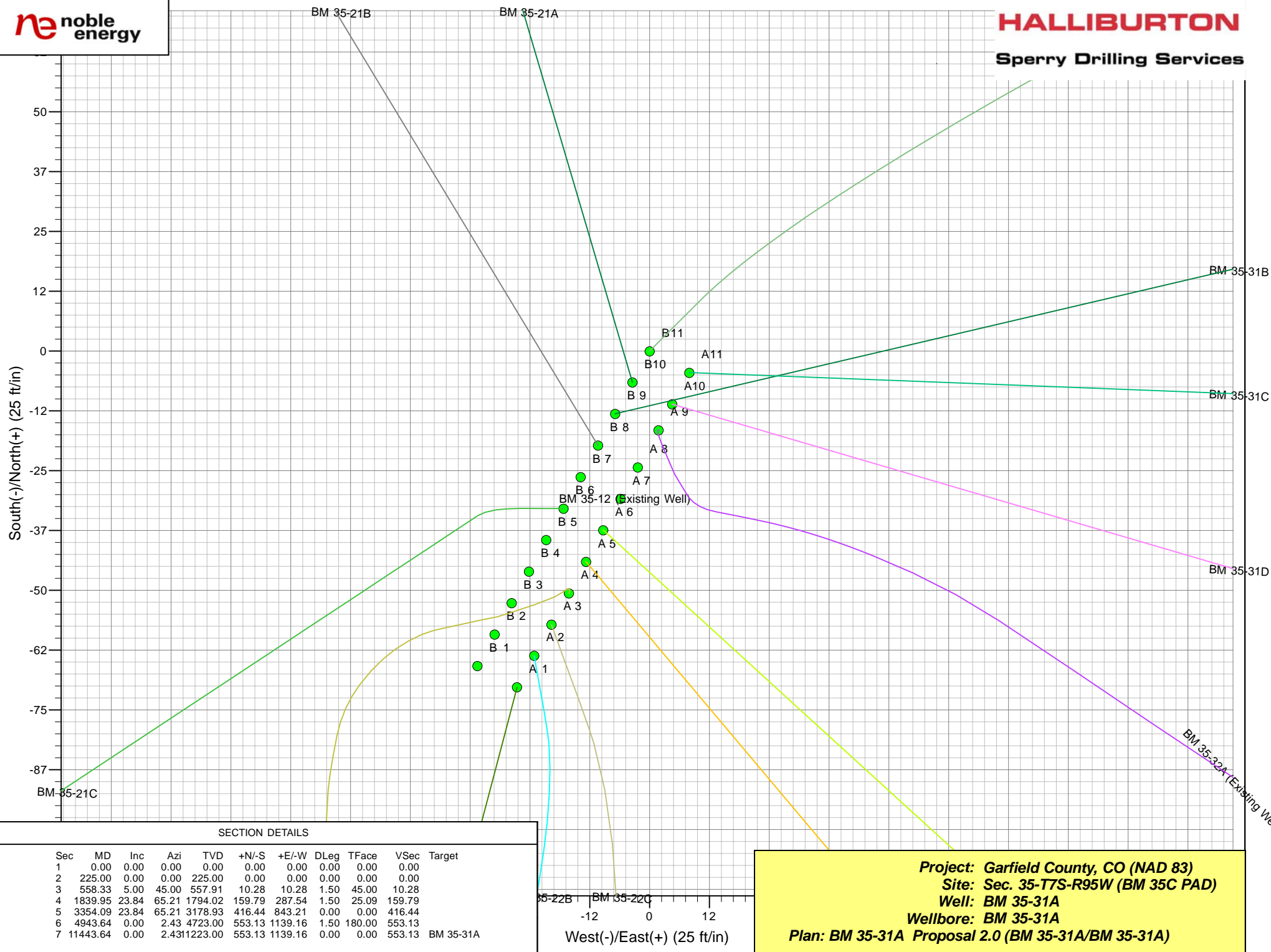
Company:	Noble Energy (Rockies)	Local Co-ordinate Reference:	Well BM 35-31A
Project:	Garfield County, CO (NAD 83)	TVD Reference:	24 @ 9257.00ft (24'KB+9233 Pad Ele)
Reference Site:	Sec. 35-T7S-R95W (BM 35C PAD)	MD Reference:	24 @ 9257.00ft (24'KB+9233 Pad Ele)
Site Error:	0.00ft	North Reference:	Grid
Reference Well:	BM 35-31A	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	BM 35-31A	Database:	.Sperry EDM .16 PRD
Reference Design:	BM 35-31A Proposal 2.0	Offset TVD Reference:	Offset Datum

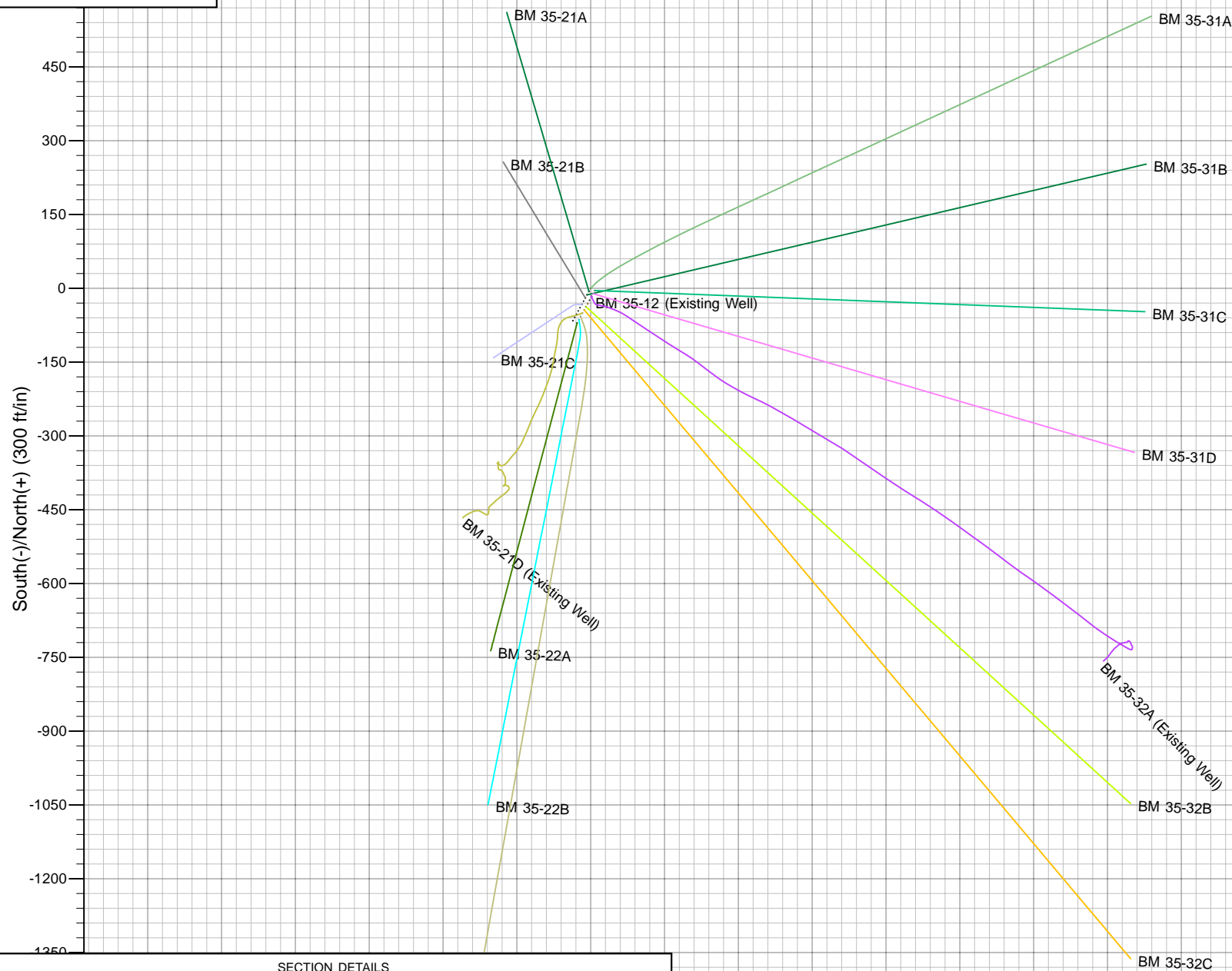
Reference Depths are relative to 24 @ 9257.00ft (24'KB+9233 Pad Ele)
Offset Depths are relative to Offset Datum
Central Meridian is 105° 30' 0.000 W °

Coordinates are relative to: BM 35-31A
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	225.00	0.00	0.00	225.00	0.00	0.00	0.00	0.00	0.00	
3	558.33	5.00	45.00	557.91	10.28	10.28	1.50	45.00	10.28	
4	1839.95	23.84	65.21	1794.02	159.79	287.54	1.50	25.09	159.79	
5	3354.09	23.84	65.21	3178.93	416.44	843.21	0.00	0.00	416.44	
6	4943.64	0.00	2.43	4723.00	553.13	1139.16	1.50	180.00	553.13	
7	11443.64	0.00	2.43	11223.00	553.13	1139.16	0.00	0.00	553.13	BM 35-31A

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

Project: Garfield County, CO (NAD 83)
Site: Sec. 35-T7S-R95W (BM 35C PAD)
Well: BM 35-31A
Wellbore: BM 35-31A
Plan: BM 35-31A Proposal 2.0 (BM 35-31A/BM 35-31A)