

Noble Energy (Rockies)

Garfield County, CO

Sec. 35-T7S-R95W (SGV 35D2 PAD)

BM 35-11D - A 7

Wellbore #1

Plan: Plan #1 Proposal

Sperry Drilling Services Proposal Report

21 October, 2009

Well Coordinates: 579,152.13 N, 1,301,237.84 E (39° 23' 50.83" N, 107° 58' 22.44" W)
Ground Level: 8,846.00 ft

Local Coordinate Origin:	Centered on Well BM 35-11D - Slot A 7
Viewing Datum:	RKB - 24' @ 8870.00ft
TVDs to System:	N
North Reference:	Grid
Unit System:	API - US Survey Feet - Custom

Geodetic Scale Factor Applied
Version: 2003.16 Build: 431

HALLIBURTON

Plan Report for BM 35-11D - Plan #1 Proposal

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)	Toolface Azimuth (°)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
BM 35-11D 100' FSL Hardline Tgt										
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
225.00	0.00	0.00	225.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Kickoff at 225.00ft										
300.00	1.50	68.72	299.99	0.36	0.91	0.98	2.00	2.00	0.00	68.72
355.00	2.60	68.72	354.96	1.07	2.75	2.95	2.00	2.00	0.00	0.00
Build Rate = 2.00°/100ft										
400.00	3.50	68.72	399.89	1.94	4.98	5.34	2.00	2.00	0.00	0.00
489.90	5.30	68.72	489.52	4.44	11.40	12.24	2.00	2.00	0.00	0.00
End Build at 489.90ft										
500.00	5.30	68.72	499.58	4.78	12.27	13.17	0.00	0.00	0.00	0.00
600.00	5.30	68.72	599.15	8.13	20.88	22.40	0.00	0.00	0.00	0.00
700.00	5.30	68.72	698.73	11.48	29.48	31.64	0.00	0.00	0.00	0.00
800.00	5.30	68.72	798.30	14.83	38.09	40.87	0.00	0.00	0.00	0.00
900.00	5.30	68.72	897.87	18.18	46.69	50.10	0.00	0.00	0.00	0.00
1,000.00	5.30	68.72	997.44	21.53	55.29	59.34	0.00	0.00	0.00	0.00
1,100.00	5.30	68.72	1,097.02	24.88	63.90	68.57	0.00	0.00	0.00	0.00
1,200.00	5.30	68.72	1,196.59	28.23	72.50	77.80	0.00	0.00	0.00	0.00
1,300.00	5.30	68.72	1,296.16	31.59	81.11	87.03	0.00	0.00	0.00	0.00
1,400.00	5.30	68.72	1,395.73	34.94	89.71	96.27	0.00	0.00	0.00	0.00
1,500.00	5.30	68.72	1,495.31	38.29	98.31	105.50	0.00	0.00	0.00	0.00
1,600.00	5.30	68.72	1,594.88	41.64	106.92	114.73	0.00	0.00	0.00	0.00
1,700.00	5.30	68.72	1,694.45	44.99	115.52	123.97	0.00	0.00	0.00	0.00
1,800.00	5.30	68.72	1,794.03	48.34	124.13	133.20	0.00	0.00	0.00	0.00
1,900.00	5.30	68.72	1,893.60	51.69	132.73	142.43	0.00	0.00	0.00	0.00
2,000.00	5.30	68.72	1,993.17	55.04	141.33	151.67	0.00	0.00	0.00	0.00
2,100.00	5.30	68.72	2,092.74	58.39	149.94	160.90	0.00	0.00	0.00	0.00
2,200.00	5.30	68.72	2,192.32	61.74	158.54	170.13	0.00	0.00	0.00	0.00
2,300.00	5.30	68.72	2,291.89	65.09	167.15	179.36	0.00	0.00	0.00	0.00
2,380.00	5.30	68.72	2,371.55	67.77	174.03	186.75	0.00	0.00	0.00	0.00
8 5/8" Casing Pt.										
2,400.00	5.30	68.72	2,391.46	68.44	175.75	188.60	0.00	0.00	0.00	0.00
2,500.00	5.30	68.72	2,491.04	71.79	184.35	197.83	0.00	0.00	0.00	0.00
2,600.00	5.30	68.72	2,590.61	75.15	192.96	207.06	0.00	0.00	0.00	0.00
2,700.00	5.30	68.72	2,690.18	78.50	201.56	216.30	0.00	0.00	0.00	0.00
2,800.00	5.30	68.72	2,789.75	81.85	210.17	225.53	0.00	0.00	0.00	0.00
2,900.00	5.30	68.72	2,889.33	85.20	218.77	234.76	0.00	0.00	0.00	0.00
3,000.00	5.30	68.72	2,988.90	88.55	227.37	244.00	0.00	0.00	0.00	0.00
3,100.00	5.30	68.72	3,088.47	91.90	235.98	253.23	0.00	0.00	0.00	0.00
3,200.00	5.30	68.72	3,188.05	95.25	244.58	262.46	0.00	0.00	0.00	0.00
3,300.00	5.30	68.72	3,287.62	98.60	253.19	271.69	0.00	0.00	0.00	0.00
3,400.00	5.30	68.72	3,387.19	101.95	261.79	280.93	0.00	0.00	0.00	0.00
3,470.00	5.30	68.72	3,456.89	104.30	267.81	287.39	0.00	0.00	0.00	0.00
5.30 Inclination										
3,500.00	5.30	68.72	3,486.76	105.30	270.39	290.16	0.00	0.00	0.00	0.00
3,600.00	5.30	68.72	3,586.34	108.65	279.00	299.39	0.00	0.00	0.00	0.00
3,700.00	5.30	68.72	3,685.91	112.00	287.60	308.63	0.00	0.00	0.00	0.00
3,800.00	5.30	68.72	3,785.48	115.35	296.21	317.86	0.00	0.00	0.00	0.00
3,900.00	5.30	68.72	3,885.05	118.71	304.81	327.09	0.00	0.00	0.00	0.00
4,000.00	5.30	68.72	3,984.63	122.06	313.41	336.32	0.00	0.00	0.00	0.00
4,100.00	5.30	68.72	4,084.20	125.41	322.02	345.56	0.00	0.00	0.00	0.00
4,200.00	5.30	68.72	4,183.77	128.76	330.62	354.79	0.00	0.00	0.00	0.00
4,300.00	5.30	68.72	4,283.35	132.11	339.23	364.02	0.00	0.00	0.00	0.00
4,400.00	5.30	68.72	4,382.92	135.46	347.83	373.26	0.00	0.00	0.00	0.00
4,500.00	5.30	68.72	4,482.49	138.81	356.43	382.49	0.00	0.00	0.00	0.00
4,600.00	5.30	68.72	4,582.06	142.16	365.04	391.72	0.00	0.00	0.00	0.00

Plan Report for BM 35-11D - Plan #1 Proposal

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)	Toolface Azimuth (°)
4,700.00	5.30	68.72	4,681.64	145.51	373.64	400.96	0.00	0.00	0.00	0.00
4,800.00	5.30	68.72	4,781.21	148.86	382.25	410.19	0.00	0.00	0.00	0.00
4,900.00	5.30	68.72	4,880.78	152.21	390.85	419.42	0.00	0.00	0.00	0.00
5,000.00	5.30	68.72	4,980.36	155.56	399.45	428.65	0.00	0.00	0.00	0.00
5,100.00	5.30	68.72	5,079.93	158.91	408.06	437.89	0.00	0.00	0.00	0.00
5,200.00	5.30	68.72	5,179.50	162.27	416.66	447.12	0.00	0.00	0.00	0.00
5,300.00	5.30	68.72	5,279.07	165.62	425.27	456.35	0.00	0.00	0.00	0.00
5,400.00	5.30	68.72	5,378.65	168.97	433.87	465.59	0.00	0.00	0.00	0.00
5,500.00	5.30	68.72	5,478.22	172.32	442.47	474.82	0.00	0.00	0.00	0.00
5,600.00	5.30	68.72	5,577.79	175.67	451.08	484.05	0.00	0.00	0.00	0.00
5,700.00	5.30	68.72	5,677.37	179.02	459.68	493.29	0.00	0.00	0.00	0.00
5,800.00	5.30	68.72	5,776.94	182.37	468.29	502.52	0.00	0.00	0.00	0.00
5,900.00	5.30	68.72	5,876.51	185.72	476.89	511.75	0.00	0.00	0.00	0.00
6,000.00	5.30	68.72	5,976.08	189.07	485.49	520.98	0.00	0.00	0.00	0.00
6,100.00	5.30	68.72	6,075.66	192.42	494.10	530.22	0.00	0.00	0.00	0.00
6,200.00	5.30	68.72	6,175.23	195.77	502.70	539.45	0.00	0.00	0.00	0.00
6,300.00	5.30	68.72	6,274.80	199.12	511.31	548.68	0.00	0.00	0.00	0.00
6,357.75	5.30	68.72	6,332.31	201.06	516.27	554.02	0.00	0.00	0.00	0.00
Begin Drop at 6357.75ft										
6,400.00	4.66	68.72	6,374.40	202.39	519.69	557.68	1.50	-1.50	0.00	180.00
6,440.00	4.06	68.72	6,414.28	203.49	522.53	560.73	1.50	-1.50	0.00	-180.00
Drop Rate = 1.50°/100ft										
6,500.00	3.16	68.72	6,474.16	204.87	526.05	564.51	1.50	-1.50	0.00	180.00
6,600.00	1.66	68.72	6,574.07	206.40	529.98	568.72	1.50	-1.50	0.00	180.00
6,700.00	0.16	68.72	6,674.05	206.97	531.47	570.32	1.50	-1.50	0.00	180.00
6,710.87	0.00	68.67	6,684.92	206.98	531.48	570.33	1.50	-1.50	-0.49	-180.00
BM 35-11D Plan #1 Zone Tgt										
6,710.95	0.00	0.00	6,685.00	206.98	531.48	570.33	1.50	-1.50	-86,085.09	-179.95
End Drop at 6710.95ft - Williams Fork - BM 35-11D Plan #1 Driller's Tgt										
6,800.00	0.07	243.44	6,774.05	206.96	531.43	570.28	0.08	0.08	-130.89	-116.57
6,900.00	0.15	243.44	6,874.05	206.87	531.26	570.08	0.08	0.08	0.00	0.00
7,000.00	0.23	243.44	6,974.05	206.72	530.96	569.75	0.08	0.08	0.00	0.00
7,100.00	0.31	243.44	7,074.05	206.51	530.53	569.28	0.08	0.08	0.00	0.00
7,200.00	0.39	243.44	7,174.05	206.23	529.99	568.67	0.08	0.08	0.00	0.00
7,300.00	0.47	243.44	7,274.05	205.90	529.31	567.92	0.08	0.08	0.00	0.00
7,400.00	0.55	243.44	7,374.04	205.50	528.52	567.04	0.08	0.08	0.00	0.00
7,500.00	0.63	243.44	7,474.04	205.04	527.59	566.01	0.08	0.08	0.00	0.00
7,600.00	0.71	243.44	7,574.03	204.51	526.54	564.84	0.08	0.08	0.00	0.00
7,692.98	0.79	243.44	7,667.00	203.97	525.46	563.64	0.08	0.08	0.00	0.00
Top of Gas										
7,700.00	0.79	243.44	7,674.02	203.93	525.37	563.54	0.08	0.08	0.00	0.00
7,800.00	0.87	243.44	7,774.01	203.28	524.07	562.10	0.08	0.08	0.00	0.00
7,900.00	0.95	243.44	7,874.00	202.57	522.65	560.51	0.08	0.08	0.00	0.00
8,000.00	1.03	243.44	7,973.98	201.79	521.10	558.79	0.08	0.08	0.00	0.00
8,100.00	1.11	243.44	8,073.97	200.96	519.43	556.93	0.08	0.08	0.00	0.00
8,200.00	1.19	243.44	8,173.95	200.06	517.64	554.93	0.08	0.08	0.00	0.00
8,300.00	1.27	243.44	8,273.92	199.10	515.71	552.80	0.08	0.08	0.00	0.00
8,400.00	1.35	243.44	8,373.90	198.07	513.67	550.52	0.08	0.08	0.00	0.00
8,500.00	1.43	243.44	8,473.87	196.99	511.49	548.11	0.08	0.08	0.00	0.00
8,600.00	1.51	243.44	8,573.83	195.84	509.20	545.55	0.08	0.08	0.00	0.00
8,686.96	1.58	243.44	8,660.76	194.79	507.10	543.22	0.08	0.08	0.00	0.00
8,700.00	1.57	243.44	8,673.80	194.63	506.78	542.86	0.08	-0.08	0.00	180.00
8,800.00	1.49	243.44	8,773.76	193.43	504.39	540.20	0.08	-0.08	0.00	180.00
8,900.00	1.42	243.44	8,873.73	192.30	502.11	537.67	0.08	-0.08	0.00	180.00
9,000.00	1.34	243.44	8,973.70	191.22	499.96	535.27	0.08	-0.08	0.00	180.00
9,100.00	1.27	243.44	9,073.67	190.20	497.92	533.01	0.08	-0.08	0.00	180.00
9,200.00	1.19	243.44	9,173.65	189.24	496.00	530.88	0.08	-0.08	0.00	180.00
9,254.36	1.15	243.44	9,228.00	188.75	495.01	529.77	0.08	-0.08	0.00	180.00
Cameo										

Plan Report for BM 35-11D - Plan #1 Proposal

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)	Toolface Azimuth (°)
9,300.00	1.11	243.44	9,273.63	188.34	494.21	528.88	0.08	-0.08	0.00	-180.00
9,400.00	1.04	243.44	9,373.61	187.50	492.53	527.01	0.08	-0.08	0.00	180.00
9,500.00	0.96	243.44	9,473.60	186.72	490.97	525.27	0.08	-0.08	0.00	180.00
9,600.00	0.89	243.44	9,573.58	186.00	489.52	523.67	0.08	-0.08	0.00	180.00
9,627.42	0.86	243.44	9,601.00	185.81	489.15	523.25	0.08	-0.08	0.00	180.00
Rollins										
9,700.00	0.81	243.44	9,673.57	185.34	488.20	522.20	0.08	-0.08	0.00	-180.00
9,800.00	0.73	243.44	9,773.56	184.74	487.00	520.86	0.08	-0.08	0.00	180.00
9,900.00	0.66	243.44	9,873.56	184.20	485.91	519.65	0.08	-0.08	0.00	180.00
9,975.45	0.60	243.44	9,949.00	183.83	485.17	518.83	0.08	-0.08	0.00	180.00
Cozzette										
10,000.00	0.58	243.44	9,973.55	183.71	484.94	518.58	0.08	-0.08	0.00	-180.00
10,100.00	0.51	243.44	10,073.55	183.29	484.10	517.63	0.08	-0.08	0.00	180.00
10,200.00	0.43	243.44	10,173.54	182.92	483.37	516.82	0.08	-0.08	0.00	180.00
10,272.46	0.37	243.44	10,246.00	182.70	482.91	516.32	0.08	-0.08	0.00	-180.00
Corcora										
10,300.00	0.35	243.44	10,273.54	182.62	482.76	516.14	0.08	-0.08	0.00	180.00
10,400.00	0.28	243.44	10,373.54	182.37	482.26	515.60	0.08	-0.08	0.00	180.00
10,500.00	0.20	243.44	10,473.54	182.19	481.89	515.18	0.08	-0.08	0.00	180.00
10,513.46	0.19	243.44	10,487.00	182.17	481.85	515.14	0.08	-0.08	0.00	180.00
Mancos										
10,600.00	0.12	243.44	10,573.54	182.06	481.64	514.90	0.08	-0.08	0.00	-180.00
10,700.00	0.05	243.44	10,673.54	181.99	481.50	514.75	0.08	-0.08	0.00	180.00
10,763.46	0.00	0.00	10,737.00	181.98	481.48	514.72	0.08	-0.08	183.68	180.00
Total Depth = 10763.46ft - BM 35-11D Plan #1 BH Tgt										

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	Kickoff at 225.00ft
355.00	354.96	1.07	2.75	Build Rate = 2.00°/100ft
489.90	489.52	4.44	11.40	End Build at 489.90ft
3,470.00	3,456.89	104.30	267.81	5.30 Inclination
6,357.75	6,332.31	201.06	516.27	Begin Drop at 6357.75ft
6,440.00	6,414.28	203.49	522.53	Drop Rate = 1.50°/100ft
6,710.95	6,685.00	206.98	531.48	End Drop at 6710.95ft
10,763.46	10,737.00	181.98	481.48	Total Depth = 10763.46ft

Vertical Section Information

Angle Type	Target	Azimuth (°)	Origin Type	+N/-S (ft)	+E/-W (ft)	Start TVD (ft)
Target	BM 35-11D Plan #1 BH Tgt	69.30	Slot	0.00	0.00	0.00

Survey tool program

From (ft)	To (ft)	Survey/Plan	Survey Tool
0.00	10,763.46	Plan #1 Proposal	MWD

Plan Report for BM 35-11D - Plan #1 Proposal

Casing Details

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
2,380.00	2,371.55	8 5/8" Casing Pt.	8-5/8	11

Formation Details

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
6,710.95	6,685.00	Williams Fork		0.00	
7,692.98	7,667.00	Top of Gas		0.00	
9,254.36	9,228.00	Cameo		0.00	
9,627.42	9,601.00	Rollins		0.00	
9,975.45	9,949.00	Cozzette		0.00	
10,272.46	10,246.00	Corcora		0.00	
10,513.46	10,487.00	Mancos		0.00	

Targets associated with this wellbore

Target Name	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Shape
BM 35-11D 100' FSL Hardline Tgt	0.00	0.00	0.00	Polygon
BM 35-11D Plan #1 Driller's Tgt	6,685.00	206.98	531.48	Rectangle
BM 35-11D Plan #1 BH Tgt	10,737.00	181.98	481.48	Point
BM 35-11D Plan #1 Zone Tgt	6,685.00	181.98	481.48	Rectangle

North Reference Sheet for Sec. 35-T7S-R95W (SGV 35D2 PAD) - BM 35-11D - Wellbore #1

All data is in US Feet unless otherwise stated. Directions and Coordinates are relative to Grid North Reference.

Vertical Depths are relative to RKB - 24' @ 8870.00ft. Northing and Easting are relative to BM 35-11D - Slot A 7

Coordinate System is US State Plane 1927 (Exact solution), Colorado Central 502 using datum NAD 1927 (NADCON CONUS), ellipsoid Clarke 1866

Projection method is Lambert Conformal Conic (2 parallel)

Central Meridian is -105.50°, Longitude Origin: 0° 0' 0.000 E°, Latitude Origin: 39° 45' 0.000 N°

False Easting: 2,000,000.00ft, False Northing: 0.00ft, Scale Reduction: 0.99994926

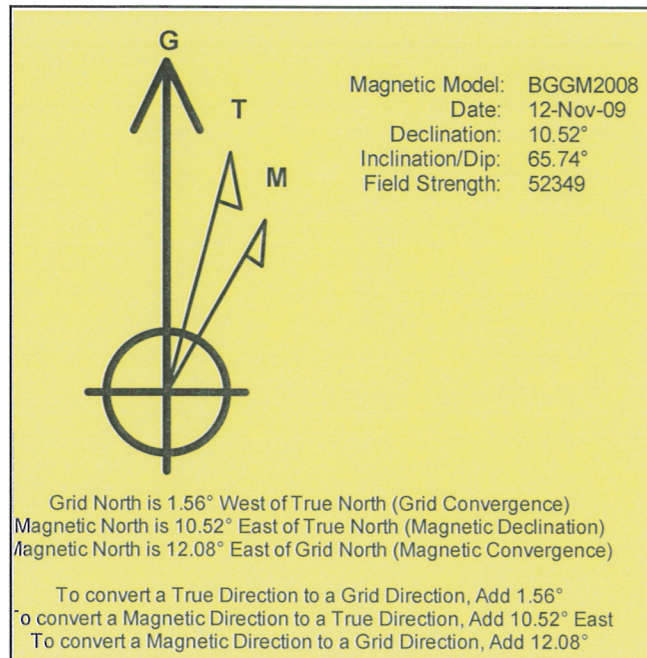
Grid Coordinates of Well: 579,152.13 ft N, 1,301,237.84 ft E

Geographical Coordinates of Well: 39° 23' 50.83" N, 107° 58' 22.44" W

Grid Convergence at Surface is: -1.56°

Based upon Minimum Curvature type calculations, at a Measured Depth of 10,763.46ft the Bottom Hole Displacement is 514.72ft in the Direction of 69.30° (Grid).

Magnetic Convergence at surface is: -12.08° (12 November 2009, , BGGM2008)



Project: Garfield County, CO
Site: Sec. 35-T7S-R95W (SGV 35D2 PAD)
Well: BM 35-11D
Wellbore: Wellbore #1
Plan: Plan #1 Proposal

Noble Energy (Rockies)

HALLIBURTON

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
489.90	5.30	68.72	489.52	4.44	11.40	2.00	68.72	12.24
6357.75	5.30	68.72	6332.31	201.06	516.27	0.00	0.00	554.02
6710.95	0.00	0.00	6685.00	206.98	531.48	1.50	180.00	570.33
8686.96	1.58	243.44	8660.76	194.79	507.10	0.08	243.44	543.22
10763.46	0.00	360.00	10737.00	181.98	481.48	0.08	180.00	514.72

WELL DETAILS: BM 35-11D

Ground Level:	8846.00	Latitude	39° 23' 50.832 N	Longitude	107° 58' 22.437 W	A 7
Northing	579152.13	Easting	1301237.84			

WELLBORE TARGET DETAILS

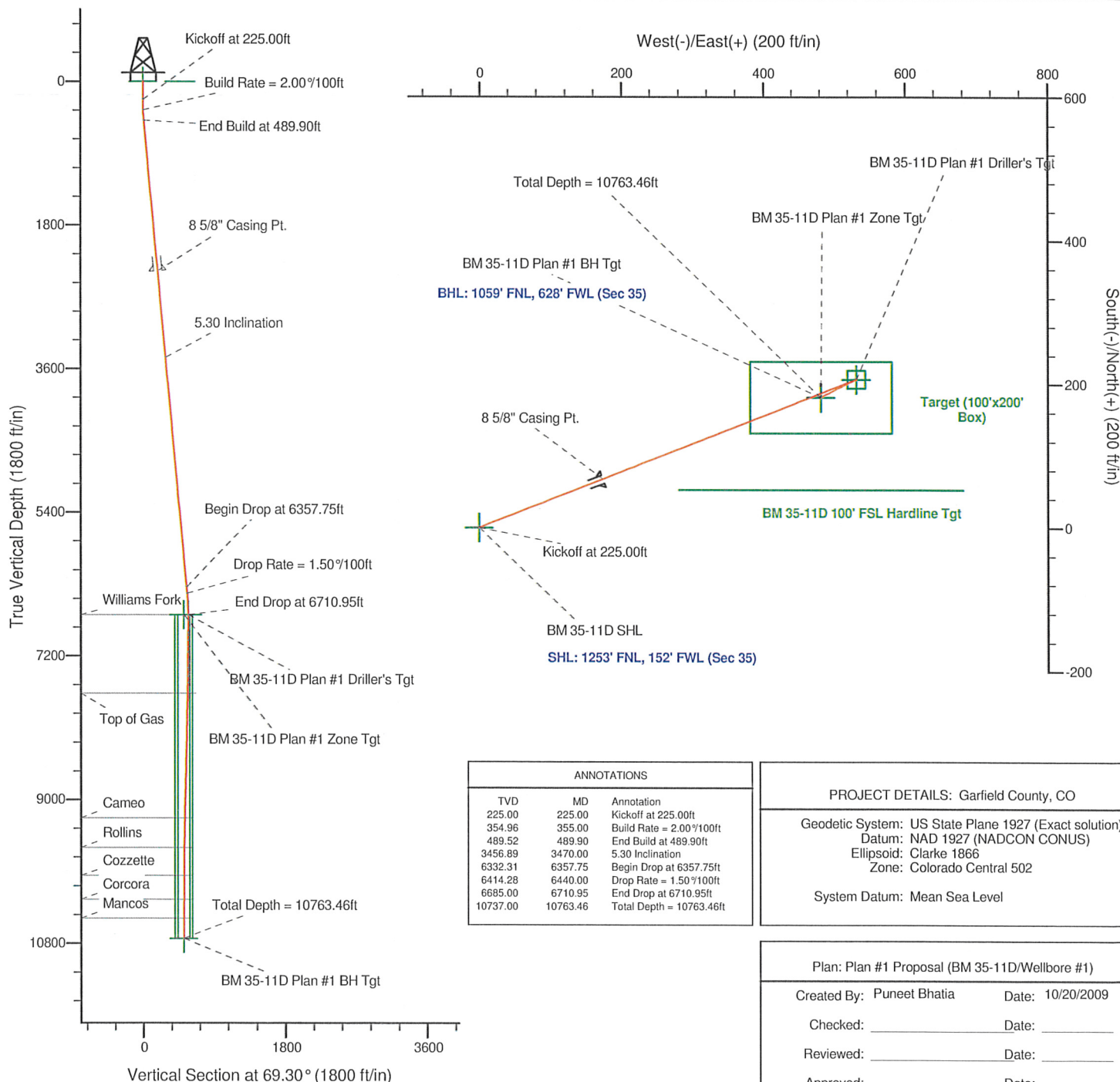
Name	TVD	+N/-S	+E/-W	Shape
BM 35-11D 100' FSL Hardline Tgt	0.00	0.00	0.00	Polygon
BM 35-11D Plan #1 Driller's Tgt	6685.00	206.98	531.48	Rectangle (Sides: L25.00 W25.00)
BM 35-11D Plan #1 Zone Tgt	6685.00	181.98	481.48	Rectangle (Sides: L100.00 W200.00)
BM 35-11D Plan #1 BH Tgt	10737.00	181.98	481.48	Point



Azimuths to Grid North
True North: 1.56°
Magnetic North: 12.08°
Magnetic Field
Strength: 52348.7snT
Dip Angle: 65.74°
Date: 11/12/2009
Model: BGGM2008

FORMATION TOP DETAILS

TVDPath	MDPath	Formation
6685.00	6710.95	Williams Fork
7667.00	7692.98	Top of Gas
9228.00	9254.36	Cameo
9601.00	9627.42	Rollins
9949.00	9975.45	Cozzette
10246.00	10272.46	Corcora
10487.00	10513.46	Mancos



ANNOTATIONS

TVD	MD	Annotation
225.00	225.00	Kickoff at 225.00ft
354.96	355.00	Build Rate = 2.00°/100ft
489.52	489.90	End Build at 489.90ft
3456.89	3470.00	5.30 Inclination
6332.31	6357.75	Begin Drop at 6357.75ft
6414.28	6440.00	Drop Rate = 1.50°/100ft
6685.00	6710.95	End Drop at 6710.95ft
10737.00	10763.46	Total Depth = 10763.46ft

PROJECT DETAILS: Garfield County, CO

Geodetic System: US State Plane 1927 (Exact solution)
Datum: NAD 1927 (NADCON CONUS)
Ellipsoid: Clarke 1866
Zone: Colorado Central 502
System Datum: Mean Sea Level

Plan: Plan #1 Proposal (BM 35-11D/Wellbore #1)

Created By: Puneet Bhatia Date: 10/20/2009
Checked: _____ Date: _____
Reviewed: _____ Date: _____
Approved: _____ Date: _____