

Noble Energy

Garfield County, CO

Sec. 8-T8S-R95W (SGV 8D PAD)

SGV Federal 7-41B - A 2

Plan #1

Plan: Plan #1 Proposal

Sperry Drilling Services

Proposal Report

06 April, 2009

Well Coordinates: 573,825.49 N, 1,286,156.95 E (39° 22' 54.10" N, 108° 01' 32.59" W)

Ground Level: 6,342.00 ft

Local Coordinate Origin:

Centered on Well SGV Federal 7-41B - Slot A 2

Viewing Datum:

RKB 25' @ 6367.00ft (Original Well Elev)

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 SGV Federal 7-41B - 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
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	311.26	299.99	0.65	-0.74	0.98	2.00	2.00	0.00	311.26
400.00	3.50	311.26	399.89	3.52	-4.02	5.34	2.00	2.00	0.00	0.00
500.00	5.50	311.26	499.58	8.70	-9.91	13.18	2.00	2.00	0.00	0.00
600.00	7.50	311.26	598.93	16.16	-18.42	24.49	2.00	2.00	0.00	0.00
661.00	8.72	311.26	659.32	21.84	-24.89	33.09	2.00	2.00	0.00	0.00
Build Rate = 2.00°/100ft										
700.00	9.50	311.26	697.83	25.91	-29.53	39.26	2.00	2.00	0.00	0.00
800.00	11.50	311.26	796.15	37.93	-43.23	57.46	2.00	2.00	0.00	0.00
900.00	13.50	311.26	893.77	52.20	-59.50	79.09	2.00	2.00	0.00	0.00
1,000.00	15.50	311.26	990.58	68.71	-78.32	104.10	2.00	2.00	0.00	0.00
1,097.88	17.46	311.26	1,084.44	87.02	-99.19	131.84	2.00	2.00	0.00	0.00
End Build at 1097.88ft										
1,100.00	17.46	311.26	1,086.46	87.44	-99.67	132.48	0.00	0.00	0.00	0.00
1,200.00	17.46	311.26	1,181.85	107.23	-122.22	162.45	0.00	0.00	0.00	0.00
1,300.00	17.46	311.26	1,277.25	127.01	-144.77	192.43	0.00	0.00	0.00	0.00
1,400.00	17.46	311.26	1,372.64	146.80	-167.32	222.40	0.00	0.00	0.00	0.00
1,500.00	17.46	311.26	1,468.03	166.58	-189.87	252.38	0.00	0.00	0.00	0.00
8 5/8" Casing Pt										
1,600.00	17.46	311.26	1,563.43	186.37	-212.43	282.35	0.00	0.00	0.00	0.00
1,700.00	17.46	311.26	1,658.82	206.15	-234.98	312.33	0.00	0.00	0.00	0.00
1,800.00	17.46	311.26	1,754.22	225.94	-257.53	342.30	0.00	0.00	0.00	0.00
1,900.00	17.46	311.26	1,849.61	245.72	-280.08	372.28	0.00	0.00	0.00	0.00
2,000.00	17.46	311.26	1,945.00	265.51	-302.63	402.25	0.00	0.00	0.00	0.00
2,100.00	17.46	311.26	2,040.40	285.29	-325.18	432.23	0.00	0.00	0.00	0.00
2,200.00	17.46	311.26	2,135.79	305.08	-347.73	462.20	0.00	0.00	0.00	0.00
2,300.00	17.46	311.26	2,231.19	324.86	-370.28	492.18	0.00	0.00	0.00	0.00
2,400.00	17.46	311.26	2,326.58	344.65	-392.83	522.15	0.00	0.00	0.00	0.00
2,500.00	17.46	311.26	2,421.97	364.43	-415.39	552.13	0.00	0.00	0.00	0.00
2,600.00	17.46	311.26	2,517.37	384.22	-437.94	582.10	0.00	0.00	0.00	0.00
2,653.00	17.46	311.26	2,567.93	394.70	-449.89	597.99	0.00	0.00	0.00	0.00
17.46 Inclination										
2,700.00	17.46	311.26	2,612.76	404.00	-460.49	612.08	0.00	0.00	0.00	0.00
2,800.00	17.46	311.26	2,708.16	423.79	-483.04	642.05	0.00	0.00	0.00	0.00
2,900.00	17.46	311.26	2,803.55	443.57	-505.59	672.02	0.00	0.00	0.00	0.00
3,000.00	17.46	311.26	2,898.94	463.36	-528.14	702.00	0.00	0.00	0.00	0.00
3,100.00	17.46	311.26	2,994.34	483.14	-550.69	731.97	0.00	0.00	0.00	0.00
3,200.00	17.46	311.26	3,089.73	502.93	-573.24	761.95	0.00	0.00	0.00	0.00
3,300.00	17.46	311.26	3,185.13	522.71	-595.80	791.92	0.00	0.00	0.00	0.00
3,400.00	17.46	311.26	3,280.52	542.49	-618.35	821.90	0.00	0.00	0.00	0.00
3,500.00	17.46	311.26	3,375.91	562.28	-640.90	851.87	0.00	0.00	0.00	0.00
3,600.00	17.46	311.26	3,471.31	582.06	-663.45	881.85	0.00	0.00	0.00	0.00
3,700.00	17.46	311.26	3,566.70	601.85	-686.00	911.82	0.00	0.00	0.00	0.00
3,800.00	17.46	311.26	3,662.10	621.63	-708.55	941.80	0.00	0.00	0.00	0.00
3,900.00	17.46	311.26	3,757.49	641.42	-731.10	971.77	0.00	0.00	0.00	0.00
4,000.00	17.46	311.26	3,852.88	661.20	-753.65	1,001.75	0.00	0.00	0.00	0.00
4,100.00	17.46	311.26	3,948.28	680.99	-776.20	1,031.72	0.00	0.00	0.00	0.00
4,200.00	17.46	311.26	4,043.67	700.77	-798.76	1,061.70	0.00	0.00	0.00	0.00
4,208.82	17.46	311.26	4,052.08	702.52	-800.75	1,064.34	0.00	0.00	0.00	0.00
Begin Drop at 4208.82ft										
4,300.00	16.09	311.26	4,139.38	719.87	-820.53	1,090.63	1.50	-1.50	0.00	180.00
4,343.24	15.44	311.26	4,181.00	727.62	-829.36	1,102.37	1.50	-1.50	0.00	-180.00
Williams Fork										

Plan Report for SGV Federal 7-41B - 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 (°)
4,400.00	14.59	311.26	4,235.82	737.32	-840.41	1,117.06	1.50	-1.50	0.00	180.00
4,500.00	13.09	311.26	4,332.91	753.09	-858.39	1,140.96	1.50	-1.50	0.00	180.00
4,600.00	11.59	311.26	4,430.60	767.19	-874.46	1,162.32	1.50	-1.50	0.00	180.00
4,700.00	10.09	311.26	4,528.81	779.59	-888.59	1,181.11	1.50	-1.50	0.00	180.00
4,790.00	8.74	311.26	4,617.60	789.30	-899.66	1,195.82	1.50	-1.50	0.00	180.00
Drop Rate = 1.50°/100ft										
4,800.00	8.59	311.26	4,627.48	790.29	-900.79	1,197.32	1.50	-1.50	0.00	-180.00
4,900.00	7.09	311.26	4,726.55	799.29	-911.05	1,210.95	1.50	-1.50	0.00	180.00
5,000.00	5.59	311.26	4,825.93	806.57	-919.35	1,221.98	1.50	-1.50	0.00	180.00
5,100.00	4.09	311.26	4,925.57	812.13	-925.69	1,230.41	1.50	-1.50	0.00	180.00
5,200.00	2.59	311.26	5,025.40	815.98	-930.07	1,236.23	1.50	-1.50	0.00	180.00
5,300.00	1.09	311.26	5,125.34	818.09	-932.48	1,239.44	1.50	-1.50	0.00	180.00
5,372.66	0.00	0.00	5,198.00	818.55	-933.00	1,240.13	1.50	-1.50	67.08	180.00
End Drop at 5372.66ft - Top of gas - SGV Federal 7-41B Plan #1 Driller's Tgt										
5,400.00	0.05	243.44	5,225.34	818.54	-933.01	1,240.14	0.19	0.19	-426.35	-116.56
5,500.00	0.24	243.44	5,325.34	818.43	-933.24	1,240.24	0.19	0.19	0.00	0.00
5,600.00	0.43	243.44	5,425.34	818.17	-933.77	1,240.49	0.19	0.19	0.00	0.00
5,700.00	0.62	243.44	5,525.33	817.76	-934.59	1,240.87	0.19	0.19	0.00	0.00
5,800.00	0.81	243.44	5,625.33	817.20	-935.71	1,241.39	0.19	0.19	0.00	0.00
5,900.00	1.00	243.44	5,725.31	816.49	-937.12	1,242.05	0.19	0.19	0.00	0.00
6,000.00	1.19	243.44	5,825.29	815.63	-938.84	1,242.84	0.19	0.19	0.00	0.00
6,100.00	1.38	243.44	5,925.27	814.63	-940.85	1,243.77	0.19	0.19	0.00	0.00
6,200.00	1.57	243.44	6,025.24	813.48	-943.15	1,244.84	0.19	0.19	0.00	0.00
6,300.00	1.76	243.44	6,125.19	812.17	-945.75	1,246.05	0.19	0.19	0.00	0.00
6,400.00	1.95	243.44	6,225.14	810.73	-948.65	1,247.39	0.19	0.19	0.00	0.00
6,500.00	2.14	243.44	6,325.08	809.13	-951.85	1,248.88	0.19	0.19	0.00	0.00
6,600.00	2.33	243.44	6,425.00	807.38	-955.34	1,250.50	0.19	0.19	0.00	0.00
6,669.21	2.46	243.44	6,494.15	806.09	-957.93	1,251.70	0.19	0.19	0.00	0.00
6,700.00	2.41	243.44	6,524.91	805.50	-959.10	1,252.24	0.19	-0.19	0.00	180.00
6,763.14	2.29	243.44	6,588.00	804.35	-961.41	1,253.31	0.19	-0.19	0.00	-180.00
Cameo										
6,800.00	2.22	243.44	6,624.83	803.70	-962.70	1,253.92	0.19	-0.19	0.00	180.00
6,900.00	2.03	243.44	6,724.76	802.04	-966.01	1,255.45	0.19	-0.19	0.00	180.00
7,000.00	1.84	243.44	6,824.71	800.54	-969.03	1,256.85	0.19	-0.19	0.00	180.00
7,100.00	1.65	243.44	6,924.66	799.17	-971.75	1,258.12	0.19	-0.19	0.00	180.00
7,102.34	1.65	243.44	6,927.00	799.14	-971.81	1,258.14	0.19	-0.19	0.00	-180.00
Rollins										
7,200.00	1.46	243.44	7,024.62	797.96	-974.18	1,259.24	0.19	-0.19	0.00	180.00
7,300.00	1.27	243.44	7,124.59	796.89	-976.31	1,260.23	0.19	-0.19	0.00	180.00
7,371.42	1.14	243.44	7,196.00	796.22	-977.66	1,260.86	0.19	-0.19	0.00	-180.00
Cozzette										
7,400.00	1.08	243.44	7,224.57	795.98	-978.15	1,261.09	0.19	-0.19	0.00	180.00
7,500.00	0.89	243.44	7,324.56	795.20	-979.70	1,261.80	0.19	-0.19	0.00	180.00
7,600.00	0.71	243.44	7,424.55	794.58	-980.95	1,262.38	0.19	-0.19	0.00	180.00
7,609.45	0.69	243.44	7,434.00	794.53	-981.05	1,262.43	0.19	-0.19	0.00	180.00
Corcoran										
7,700.00	0.52	243.44	7,524.54	794.10	-981.90	1,262.82	0.19	-0.19	0.00	-180.00
7,723.46	0.47	243.44	7,548.00	794.01	-982.08	1,262.91	0.19	-0.19	0.00	180.00
Mancos										
7,800.00	0.33	243.44	7,624.54	793.77	-982.56	1,263.13	0.19	-0.19	0.00	-180.00
7,900.00	0.14	243.44	7,724.54	793.59	-982.92	1,263.30	0.19	-0.19	0.00	180.00
7,973.46	0.00	0.00	7,798.00	793.55	-983.00	1,263.33	0.19	-0.19	158.68	180.00
Total Depth = 7973.46ft - SGV Federal 7-41B Plan #1 BH Tgt										

Plan Report for SGV Federal 7-41B - Plan #1 Proposal

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
661.00	659.32	21.84	-24.89	Build Rate = 2.00°/100ft
1,097.88	1,084.44	87.02	-99.19	End Build at 1097.88ft
2,653.00	2,567.93	394.70	-449.89	17.46 Inclination
4,208.82	4,052.08	702.52	-800.75	Begin Drop at 4208.82ft
4,790.00	4,617.60	789.30	-899.66	Drop Rate = 1.50°/100ft
5,372.66	5,198.00	818.55	-933.00	End Drop at 5372.66ft
7,973.46	7,798.00	793.55	-983.00	Total Depth = 7973.46ft

Vertical Section Information

Angle Type	Target	Azimuth (°)	Origin Type	Origin		Start TVD (ft)
				+N/-S (ft)	+E/-W (ft)	
Target	SGV Federal 7-41B Plan #1 BH Tgt	308.91	Slot	0.00	0.00	0.00

Survey tool program

From (ft)	To (ft)	Survey/Plan	Survey Tool
0.00	7,973.46	Plan #1 Proposal	MWD

Casing Details

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
1,500.00	1,468.03	8 5/8" Casing Pt	8-5/8	12-1/4

Formation Details

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
4,343.24	4,181.00	Williams Fork		0.00	
5,372.66	5,198.00	Top of gas		0.00	
6,763.14	6,588.00	Cameo		0.00	
7,102.34	6,927.00	Rollins		0.00	
7,371.42	7,196.00	Cozzette		0.00	
7,609.45	7,434.00	Corcoran		0.00	
7,723.46	7,548.00	Mancos		0.00	

Targets associated with this wellbore

Target Name	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Shape
SGV Federal 7-41B Plan #1 Zone Tgt	5,198.00	793.55	-983.00	Rectangle
SGV Federal 7-41B Plan #1 BH Tgt	7,798.00	793.55	-983.00	Point
SGV Federal 7-41B Plan #1 Driller's Tgt	5,198.00	818.55	-933.00	Rectangle

North Reference Sheet for Sec. 8-T8S-R95W (SGV 8D PAD) - SGV Federal 7-41B - Plan #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 25' @ 6367.00ft (Original Well Elev). Northing and Easting are relative to SGV Federal 7-41B - Slot A 2

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: 0.99994788

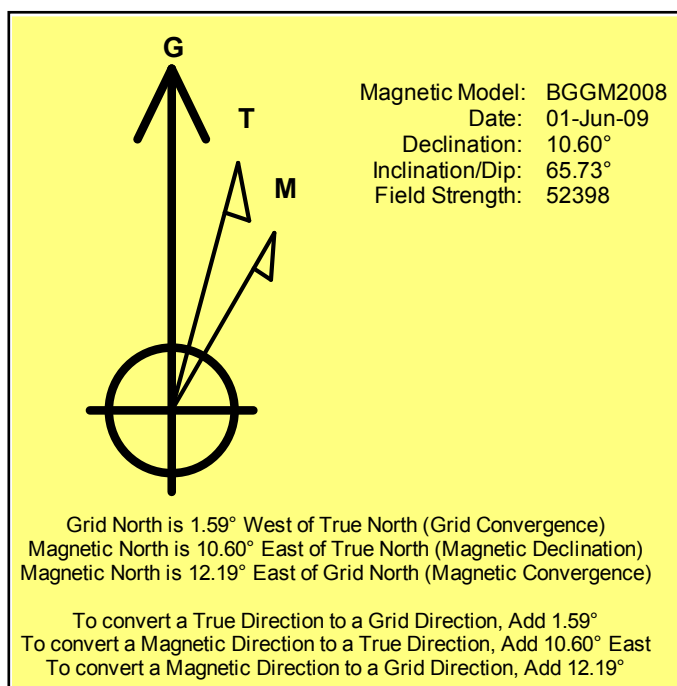
Grid Coordinates of Well: 573,825.49 ft N, 1,286,156.95 ft E

Geographical Coordinates of Well: 39° 22' 54.10" N, 108° 01' 32.59" W

Grid Convergence at Surface is: -1.59°

Based upon Minimum Curvature type calculations, at a Measured Depth of 7,973.46ft
the Bottom Hole Displacement is 1,263.33ft in the Direction of 308.91° (Grid).

Magnetic Convergence at surface is: -12.19° (1 June 2009 , BGGM2008)



Project: Garfield County, CO
Site: Sec. 8-T8S-R95W (SGV 8D PAD)
Well: SGV Federal 7-41B
Wellbore: Plan #1
Plan: Plan #1 Proposal

Noble Energy

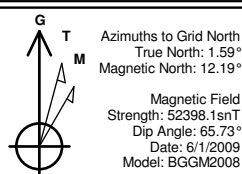
HALLIBURTON

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	
1097.88	17.46	311.26	1084.44	87.02	-99.19	2.00	311.26	131.84	
4208.82	17.46	311.26	4052.09	702.52	-800.75	0.00	0.00	1064.34	
5372.66	0.00	0.00	5198.00	818.55	-933.00	1.50	180.00	1240.13	SGV Federal 7-41B Plan #1 Driller's Tgt
6669.21	2.46	243.44	6494.15	806.09	-957.93	0.19	243.44	1251.70	
7973.46	0.00	1.60	7798.00	793.55	-983.00	0.19	180.00	1263.33	SGV Federal 7-41B Plan #1 BH Tgt

WELL DETAILS: SGV Federal 7-41B

Ground Level:	6342.00				
Northings	573825.49	Eastings	1286156.95	Latitude	39° 22' 54.103 N
				Longitude	108° 1' 32.588 W
					A 2



FORMATION TOP DETAILS

TVDPath	MDPath	Formation
4181.00	4343.24	Williams Fork
5198.00	5372.66	Top of gas
6588.00	6763.14	Cameo
6927.00	7102.34	Rollins
7196.00	7371.42	Cozzette
7434.00	7609.45	Corcoran
7548.00	7723.46	Mancos

WELLBORE TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Shape
SGV Federal 7-41B Plan #1 Driller's Tgt	5198.00	818.55	-933.00	Rectangle (Sides: L25.00 W25.00)
SGV Federal 7-41B Plan #1 Zone Tgt	5198.00	793.55	-983.00	Rectangle (Sides: L100.00 W200.00)
SGV Federal 7-41B Plan #1 BH Tgt	7798.00	793.55	-983.00	Point

