

# Noble Energy

Garfield County, CO

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

SGV Federal 7-41C - B 1

Plan #1

Plan: Plan #1 Proposal

## Sperry Drilling Services

### Proposal Report

06 April, 2009

Well Coordinates: 573,813.96 N, 1,286,153.27 E (39° 22' 53.99" N, 108° 01' 32.63" W)

Ground Level: 6,342.00 ft

Local Coordinate Origin: Centered on Well SGV Federal 7-41C - Slot B 1

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 7-41C - 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
<b>Kickoff at 225.00ft</b>										
300.00	1.50	295.82	299.99	0.43	-0.88	0.98	2.00	2.00	0.00	295.82
400.00	3.50	295.82	399.89	2.33	-4.81	5.34	2.00	2.00	0.00	0.00
500.00	5.50	295.82	499.58	5.74	-11.87	13.18	2.00	2.00	0.00	0.00
600.00	7.50	295.82	598.93	10.67	-22.06	24.49	2.00	2.00	0.00	0.00
610.00	7.70	295.82	608.84	11.25	-23.25	25.81	2.00	2.00	0.00	0.00
<b>Build Rate = 2.00°/100ft</b>										
700.00	9.50	295.82	697.83	17.11	-35.37	39.26	2.00	2.00	0.00	0.00
800.00	11.50	295.82	796.15	25.05	-51.77	57.47	2.00	2.00	0.00	0.00
900.00	13.50	295.82	893.77	34.47	-71.25	79.09	2.00	2.00	0.00	0.00
994.76	15.40	295.82	985.53	44.77	-92.53	102.71	2.00	2.00	0.00	0.00
<b>End Build at 994.76ft</b>										
1,000.00	15.40	295.82	990.58	45.38	-93.79	104.10	0.00	0.00	0.00	0.00
1,100.00	15.40	295.82	1,086.99	56.94	-117.68	130.63	0.00	0.00	0.00	0.00
1,200.00	15.40	295.82	1,183.41	68.50	-141.58	157.16	0.00	0.00	0.00	0.00
1,300.00	15.40	295.82	1,279.82	80.06	-165.48	183.68	0.00	0.00	0.00	0.00
1,400.00	15.40	295.82	1,376.23	91.63	-189.37	210.21	0.00	0.00	0.00	0.00
1,500.00	15.40	295.82	1,472.64	103.19	-213.27	236.73	0.00	0.00	0.00	0.00
<b>8 5/8" Casing Pt</b>										
1,600.00	15.40	295.82	1,569.05	114.75	-237.17	263.26	0.00	0.00	0.00	0.00
1,700.00	15.40	295.82	1,665.47	126.31	-261.07	289.79	0.00	0.00	0.00	0.00
1,800.00	15.40	295.82	1,761.88	137.88	-284.96	316.31	0.00	0.00	0.00	0.00
1,900.00	15.40	295.82	1,858.29	149.44	-308.86	342.84	0.00	0.00	0.00	0.00
2,000.00	15.40	295.82	1,954.70	161.00	-332.76	369.37	0.00	0.00	0.00	0.00
2,100.00	15.40	295.82	2,051.11	172.56	-356.66	395.89	0.00	0.00	0.00	0.00
2,200.00	15.40	295.82	2,147.52	184.13	-380.55	422.42	0.00	0.00	0.00	0.00
2,300.00	15.40	295.82	2,243.94	195.69	-404.45	448.95	0.00	0.00	0.00	0.00
2,400.00	15.40	295.82	2,340.35	207.25	-428.35	475.47	0.00	0.00	0.00	0.00
2,500.00	15.40	295.82	2,436.76	218.81	-452.25	502.00	0.00	0.00	0.00	0.00
2,562.00	15.40	295.82	2,496.53	225.98	-467.06	518.44	0.00	0.00	0.00	0.00
<b>15.40 Inclination</b>										
2,600.00	15.40	295.82	2,533.17	230.38	-476.14	528.52	0.00	0.00	0.00	0.00
2,700.00	15.40	295.82	2,629.58	241.94	-500.04	555.05	0.00	0.00	0.00	0.00
2,800.00	15.40	295.82	2,725.99	253.50	-523.94	581.58	0.00	0.00	0.00	0.00
2,900.00	15.40	295.82	2,822.41	265.06	-547.83	608.10	0.00	0.00	0.00	0.00
3,000.00	15.40	295.82	2,918.82	276.63	-571.73	634.63	0.00	0.00	0.00	0.00
3,100.00	15.40	295.82	3,015.23	288.19	-595.63	661.16	0.00	0.00	0.00	0.00
3,200.00	15.40	295.82	3,111.64	299.75	-619.53	687.68	0.00	0.00	0.00	0.00
3,300.00	15.40	295.82	3,208.05	311.31	-643.42	714.21	0.00	0.00	0.00	0.00
3,400.00	15.40	295.82	3,304.47	322.88	-667.32	740.73	0.00	0.00	0.00	0.00
3,500.00	15.40	295.82	3,400.88	334.44	-691.22	767.26	0.00	0.00	0.00	0.00
3,600.00	15.40	295.82	3,497.29	346.00	-715.12	793.79	0.00	0.00	0.00	0.00
3,700.00	15.40	295.82	3,593.70	357.56	-739.01	820.31	0.00	0.00	0.00	0.00
3,800.00	15.40	295.82	3,690.11	369.13	-762.91	846.84	0.00	0.00	0.00	0.00
3,900.00	15.40	295.82	3,786.52	380.69	-786.81	873.37	0.00	0.00	0.00	0.00
4,000.00	15.40	295.82	3,882.94	392.25	-810.71	899.89	0.00	0.00	0.00	0.00
4,100.00	15.40	295.82	3,979.35	403.81	-834.60	926.42	0.00	0.00	0.00	0.00
4,127.64	15.40	295.82	4,006.00	407.01	-841.21	933.75	0.00	0.00	0.00	0.00
<b>Williams Fork</b>										
4,130.71	15.40	295.82	4,008.96	407.36	-841.94	934.57	0.00	0.00	0.00	0.00
<b>Begin Drop at 4130.71ft</b>										
4,200.00	14.36	295.82	4,075.92	415.11	-857.95	952.34	1.50	-1.50	0.00	180.00
4,300.00	12.86	295.82	4,173.11	425.36	-879.13	975.84	1.50	-1.50	0.00	180.00

## Plan Report for SGV Federal 7-41C - 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	11.36	295.82	4,270.89	434.49	-898.01	996.80	1.50	-1.50	0.00	180.00
4,500.00	9.86	295.82	4,369.18	442.51	-914.57	1,015.19	1.50	-1.50	0.00	180.00
4,600.00	8.36	295.82	4,467.91	449.40	-928.82	1,031.00	1.50	-1.50	0.00	180.00
4,644.00	7.70	295.82	4,511.48	452.08	-934.35	1,037.14	1.50	-1.50	0.00	-180.00
<b>Drop Rate = 1.50°/100ft</b>										
4,700.00	6.86	295.82	4,567.03	455.16	-940.73	1,044.23	1.50	-1.50	0.00	180.00
4,800.00	5.36	295.82	4,666.46	459.80	-950.31	1,054.85	1.50	-1.50	0.00	180.00
4,900.00	3.86	295.82	4,766.13	463.29	-957.54	1,062.88	1.50	-1.50	0.00	180.00
5,000.00	2.36	295.82	4,865.98	465.65	-962.41	1,068.29	1.50	-1.50	0.00	180.00
5,100.00	0.86	295.82	4,965.94	466.87	-964.94	1,071.09	1.50	-1.50	0.00	180.00
5,157.06	0.00	0.00	5,023.00	467.06	-965.32	1,071.52	1.50	-1.50	112.48	180.00
<b>End Drop at 5157.06ft - Top of gas - SGV Federal 7-41C Plan #1 Driller's Tgt</b>										
5,200.00	0.08	243.44	5,065.94	467.05	-965.35	1,071.54	0.19	0.19	-271.45	-116.56
5,300.00	0.27	243.44	5,165.94	466.91	-965.62	1,071.73	0.19	0.19	0.00	0.00
5,400.00	0.46	243.44	5,265.94	466.62	-966.20	1,072.15	0.19	0.19	0.00	0.00
5,500.00	0.65	243.44	5,365.93	466.19	-967.06	1,072.77	0.19	0.19	0.00	0.00
5,600.00	0.84	243.44	5,465.92	465.61	-968.23	1,073.60	0.19	0.19	0.00	0.00
5,700.00	1.03	243.44	5,565.91	464.87	-969.69	1,074.65	0.19	0.19	0.00	0.00
5,800.00	1.22	243.44	5,665.89	464.00	-971.45	1,075.91	0.19	0.19	0.00	0.00
5,900.00	1.41	243.44	5,765.86	462.97	-973.51	1,077.39	0.19	0.19	0.00	0.00
6,000.00	1.60	243.44	5,865.83	461.79	-975.86	1,079.08	0.19	0.19	0.00	0.00
6,100.00	1.79	243.44	5,965.79	460.47	-978.51	1,080.98	0.19	0.19	0.00	0.00
6,200.00	1.98	243.44	6,065.73	459.00	-981.45	1,083.09	0.19	0.19	0.00	0.00
6,300.00	2.17	243.44	6,165.67	457.38	-984.69	1,085.41	0.19	0.19	0.00	0.00
6,400.00	2.36	243.44	6,265.59	455.61	-988.23	1,087.95	0.19	0.19	0.00	0.00
6,453.62	2.46	243.44	6,319.16	454.60	-990.25	1,089.40	0.19	0.19	0.00	0.00
6,500.00	2.38	243.44	6,365.50	453.72	-992.00	1,090.65	0.19	-0.19	0.00	180.00
6,547.54	2.29	243.44	6,413.00	452.86	-993.73	1,091.89	0.19	-0.19	0.00	-180.00
<b>Cameo</b>										
6,600.00	2.19	243.44	6,465.42	451.94	-995.56	1,093.21	0.19	-0.19	0.00	180.00
6,700.00	2.00	243.44	6,565.35	450.31	-998.83	1,095.55	0.19	-0.19	0.00	180.00
6,800.00	1.81	243.44	6,665.30	448.82	-1,001.80	1,097.68	0.19	-0.19	0.00	180.00
6,886.74	1.65	243.44	6,752.00	447.66	-1,004.14	1,099.36	0.19	-0.19	0.00	-180.00
<b>Rollins</b>										
6,900.00	1.62	243.44	6,765.25	447.49	-1,004.47	1,099.60	0.19	-0.19	0.00	180.00
7,000.00	1.43	243.44	6,865.22	446.30	-1,006.86	1,101.31	0.19	-0.19	0.00	180.00
7,100.00	1.24	243.44	6,965.19	445.25	-1,008.94	1,102.81	0.19	-0.19	0.00	180.00
7,155.82	1.14	243.44	7,021.00	444.73	-1,009.98	1,103.55	0.19	-0.19	0.00	180.00
<b>Cozzette</b>										
7,200.00	1.05	243.44	7,065.17	444.36	-1,010.73	1,104.09	0.19	-0.19	0.00	-180.00
7,300.00	0.86	243.44	7,165.16	443.61	-1,012.23	1,105.17	0.19	-0.19	0.00	180.00
7,393.85	0.69	243.44	7,259.00	443.04	-1,013.37	1,105.98	0.19	-0.19	0.00	180.00
<b>Corcoran</b>										
7,400.00	0.68	243.44	7,265.15	443.01	-1,013.43	1,106.03	0.19	-0.19	0.00	-180.00
7,500.00	0.49	243.44	7,365.14	442.55	-1,014.34	1,106.68	0.19	-0.19	0.00	180.00
7,507.86	0.47	243.44	7,373.00	442.52	-1,014.40	1,106.72	0.19	-0.19	0.00	-180.00
<b>Mancos</b>										
7,600.00	0.30	243.44	7,465.14	442.25	-1,014.96	1,107.12	0.19	-0.19	0.00	180.00
7,700.00	0.11	243.44	7,565.14	442.09	-1,015.27	1,107.35	0.19	-0.19	0.00	180.00
7,757.86	0.00	0.00	7,623.00	442.06	-1,015.32	1,107.38	0.19	-0.19	201.45	180.00
<b>Total Depth = 7757.86ft - SGV Federal 7-41C Plan #1 BH Tgt</b>										

## Plan Report for SGV Federal 7-41C - 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
610.00	608.84	11.25	-23.25	Build Rate = 2.00°/100ft
994.76	985.53	44.77	-92.53	End Build at 994.76ft
2,562.00	2,496.53	225.98	-467.06	15.40 Inclination
4,130.71	4,008.96	407.36	-841.94	Begin Drop at 4130.71ft
4,644.00	4,511.48	452.08	-934.35	Drop Rate = 1.50°/100ft
5,157.06	5,023.00	467.06	-965.32	End Drop at 5157.06ft
7,757.86	7,623.00	442.06	-1,015.32	Total Depth = 7757.86ft

Vertical Section Information

Angle Type	Target	Azimuth (°)	Origin Type	Origin		Start TVD (ft)
				+N/-S (ft)	+E/-W (ft)	
Target	SGV Federal 7-41C Plan #1 BH Tgt	293.53	Slot	0.00	0.00	0.00

Survey tool program

From (ft)	To (ft)	Survey/Plan	Survey Tool
0.00	7,757.86	Plan #1 Proposal	MWD

Casing Details

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
1,500.00	1,472.64	8 5/8" Casing Pt	8-5/8	12-1/4

Formation Details

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
4,127.64	4,006.00	Williams Fork		0.00	
5,157.06	5,023.00	Top of gas		0.00	
6,547.54	6,413.00	Cameo		0.00	
6,886.74	6,752.00	Rollins		0.00	
7,155.82	7,021.00	Cozzette		0.00	
7,393.85	7,259.00	Corcoran		0.00	
7,507.86	7,373.00	Mancos		0.00	

Targets associated with this wellbore

Target Name	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Shape
SGV Federal 7-41C Plan #1 Driller's Tgt	5,023.00	467.06	-965.32	Rectangle
SGV Federal 7-41C Plan #1 Zone Tgt	5,023.00	442.06	-1,015.32	Rectangle
SGV Federal 7-41C Plan #1 BH Tgt	7,623.00	442.06	-1,015.32	Point

**North Reference Sheet for Sec. 8-T8S-R95W (SGV 8D PAD) - SGV Federal 7-41C - 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 7-41C - Slot B 1

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

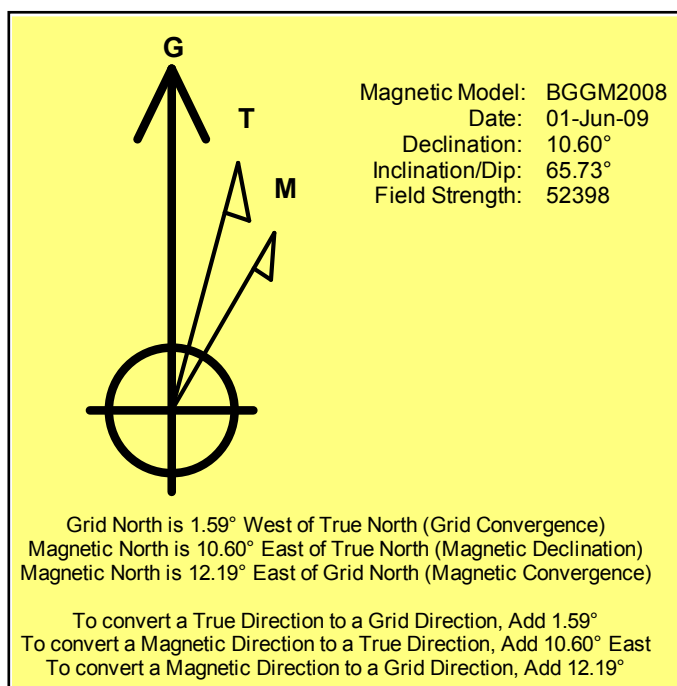
Grid Coordinates of Well: 573,813.96 ft N, 1,286,153.27 ft E

Geographical Coordinates of Well: 39° 22' 53.99" N, 108° 01' 32.63" W

Grid Convergence at Surface is: -1.59°

Based upon Minimum Curvature type calculations, at a Measured Depth of 7,757.86ft  
the Bottom Hole Displacement is 1,107.38ft in the Direction of 293.53° (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 7-41C  
Wellbore: Plan #1  
Plan: Plan #1 Proposal

# Noble Energy

HALLIBURTON

## SECTION DETAILS

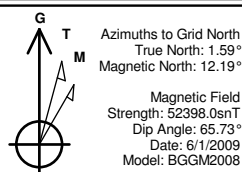
MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
225.00	0.00	0.00	225.00	0.00	0.00	0.00	0.00	0.00
994.76	15.40	295.82	985.53	44.77	-92.53	2.00	295.82	102.71
4130.71	15.40	295.82	4008.96	407.36	-841.94	0.00	0.00	934.57
5157.06	0.00	0.00	5023.00	467.06	-965.32	1.50	180.00	1071.52
6453.62	2.46	243.44	6319.16	454.60	-990.25	0.19	243.44	1089.40
7757.86	0.00	1.60	7623.00	442.06	-1015.32	0.19	180.00	1107.38

SGV Federal 7-41C Plan #1 Driller's Tgt

SGV Federal 7-41C Plan #1 BH Tgt

## WELL DETAILS: SGV Federal 7-41C

Ground Level:	6342.00	Latitude	39° 22' 53.988 N	Longitude	108° 1' 32.631 W	B 1
Northing	573813.96	Easting	1286153.27			



## FORMATION TOP DETAILS

TVDPath	MDPath	Formation
4006.00	4127.64	Williams Fork
5023.00	5157.06	Top of gas
6413.00	6547.54	Cameo
6752.00	6886.74	Rollins
7021.00	7155.82	Cozzette
7259.00	7393.85	Corcoran
7373.00	7507.86	Mancos

## WELLBORE TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Shape
SGV Federal 7-41C Plan #1 Driller's Tgt	5023.00	467.06	-965.32	Rectangle (Sides: L25.00 W25.00)
SGV Federal 7-41C Plan #1 Zone Tgt	5023.00	442.06	-1015.32	Rectangle (Sides: L100.00 W200.00)
SGV Federal 7-41C Plan #1 BH Tgt	7623.00	442.06	-1015.32	Point

