

# Bayswater

Weld County, CO (NAD 83)  
Sec. 26-T7N-R65W-6th P.M.  
Booth G-26H

**PAD 9 Permit Plan**

**Plan: Plan A Rev 0 Proposal - Permit Plan**

## Sperry Drilling Services Proposal Report

**13 December, 2013**

Well Coordinates: 1,444,962.55 N, 3,242,074.93 E (40° 33' 05.61" N, 104° 37' 43.90" W)

Ground Level: 4,896.00 ft

Local Coordinate Origin:

Centered on Well Booth G-26H

Viewing Datum:

WELL RKB 16' @ 4912.0ft (Original Well Elev)

TVDs to System:

N

North Reference:

True

Unit System:

API - US Survey Feet

Version: 2003.16 Build: 431

**HALLIBURTON**

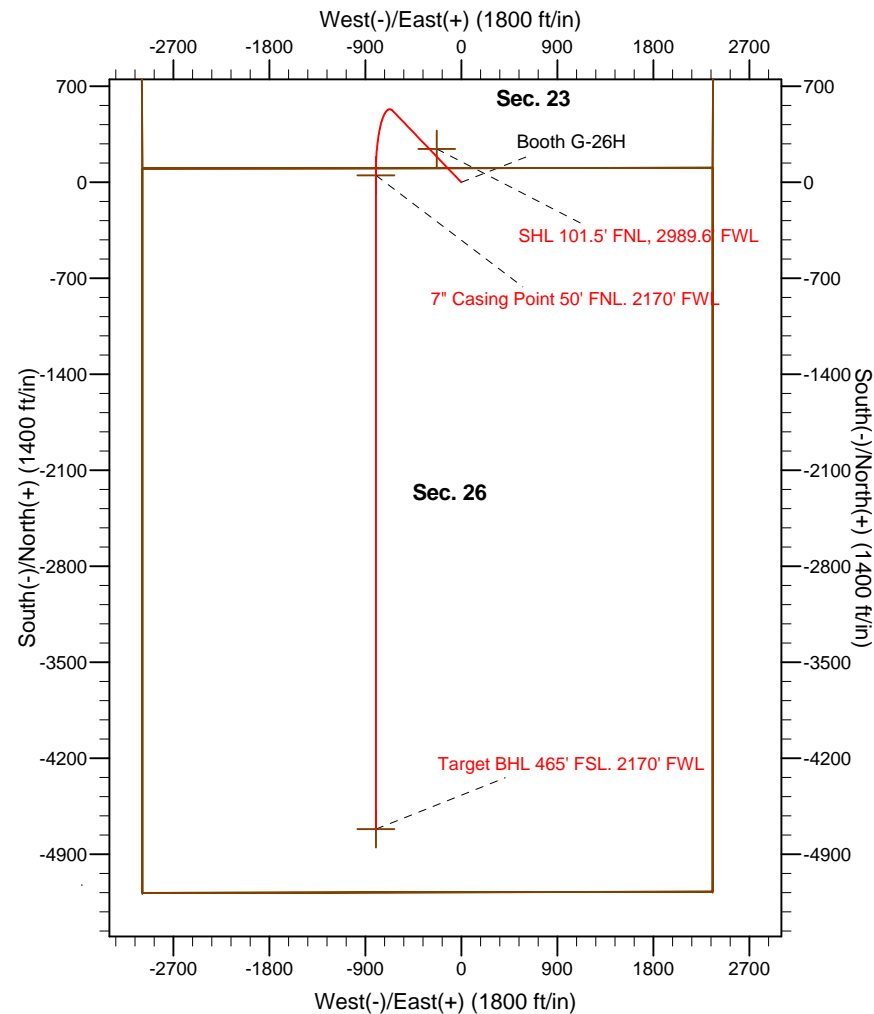
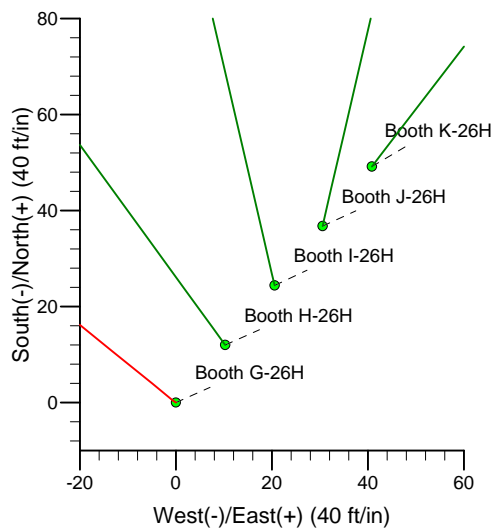
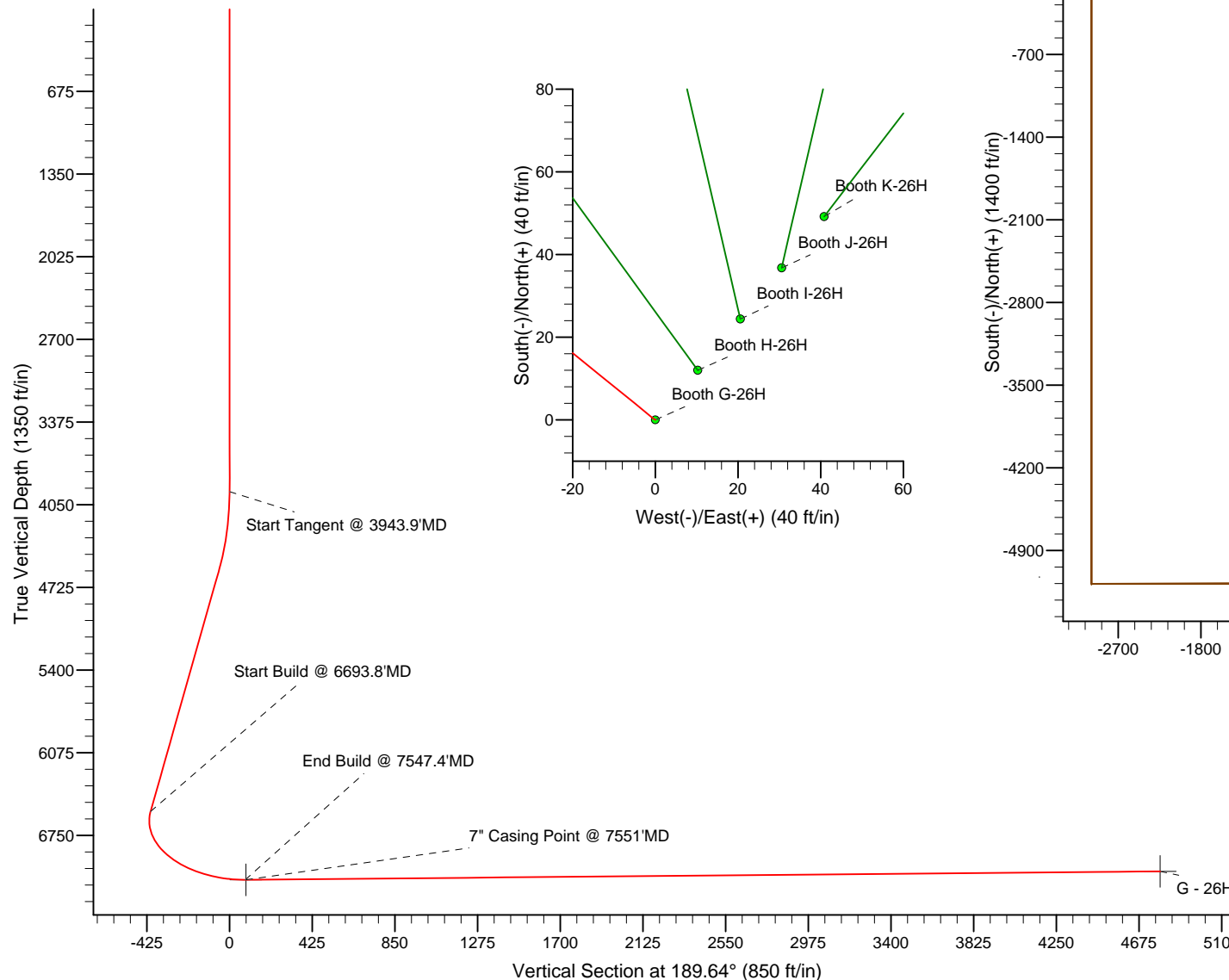
Project: Weld County,CO (NAD 83)  
Site: Sec. 26-T7N-R65W-6th P.M.  
Well: Booth G-26H  
Wellbore: PAD 9 Permit Plan  
Design: Plan A Rev 0 Proposal - Permit Plan

# Bayswater

**HALLIBURTON**  
Sperry Drilling

## SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	3943.9	0.00	0.00	3943.9	0.0	0.0	0.00	0.00	0.0	
3	4610.6	20.00	309.00	4597.1	72.5	-89.5	3.00	309.00	-56.5	
4	6693.8	20.00	309.00	6554.7	520.9	-643.2	0.00	0.00	-405.8	
5	7547.3	90.00	180.00	7113.0	54.6	-801.2	12.00	-127.27	80.3	
6	7551.0	90.00	180.00	7113.0	50.9	-801.2	0.00	0.00	84.0	G - 26H 7" Casing Point
7	7578.7	90.83	180.00	7112.8	23.3	-801.2	3.00	-0.08	111.2	
8	12319.0	90.83	180.00	7044.1	-4716.6	-801.2	0.00	0.00	4784.1	G - 26H Target BHL



## WELL DETAILS: Booth G-26H

Ground Level: 4896.0

Northing	Easting	Latitude	Longitude
1444962.55	3242074.93	40° 33' 5.609 N	104° 37' 43.900 W

## REFERENCE INFORMATION

Co-ordinate (N/E) Reference: Well Booth G-26H, True North  
Vertical (TVD) Reference: WELL RKB 16' @ 4912.0ft (Original Well Elev)  
Section (VS) Reference: Slot - (0.0N, 0.0E)  
Measured Depth Reference: WELL RKB 16' @ 4912.0ft (Original Well Elev)  
Calculation Method: Minimum Curvature

## Plan Report for Booth G-26H - Plan A Rev 0 Proposal - Permit Plan

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 (°)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00
700.0	0.00	0.00	700.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00
800.0	0.00	0.00	800.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00
900.0	0.00	0.00	900.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00
1,100.0	0.00	0.00	1,100.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00
1,200.0	0.00	0.00	1,200.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00
1,300.0	0.00	0.00	1,300.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00
1,400.0	0.00	0.00	1,400.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00
1,500.0	0.00	0.00	1,500.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00
1,600.0	0.00	0.00	1,600.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00
1,700.0	0.00	0.00	1,700.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00
1,800.0	0.00	0.00	1,800.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00
1,900.0	0.00	0.00	1,900.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00
2,000.0	0.00	0.00	2,000.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00
2,100.0	0.00	0.00	2,100.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00
2,200.0	0.00	0.00	2,200.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00
2,300.0	0.00	0.00	2,300.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00
2,400.0	0.00	0.00	2,400.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00
2,500.0	0.00	0.00	2,500.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00
2,600.0	0.00	0.00	2,600.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00
2,700.0	0.00	0.00	2,700.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00
2,800.0	0.00	0.00	2,800.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00
2,900.0	0.00	0.00	2,900.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00
3,000.0	0.00	0.00	3,000.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00
3,100.0	0.00	0.00	3,100.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00
3,200.0	0.00	0.00	3,200.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00
3,300.0	0.00	0.00	3,300.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00
3,400.0	0.00	0.00	3,400.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00
3,500.0	0.00	0.00	3,500.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00
3,600.0	0.00	0.00	3,600.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00
3,700.0	0.00	0.00	3,700.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00
3,800.0	0.00	0.00	3,800.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00
3,900.0	0.00	0.00	3,900.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00
3,943.9	0.00	0.00	3,943.9	0.0	0.0	0.0	0.00	0.00	0.00	0.00
<b>Start Tangent @ 3943.9'MD</b>										
4,000.0	1.68	309.00	4,000.0	0.5	-0.6	-0.4	3.00	3.00	0.00	309.00
4,100.0	4.68	309.00	4,099.8	4.0	-5.0	-3.1	3.00	3.00	0.00	0.00
4,200.0	7.68	309.00	4,199.2	10.8	-13.3	-8.4	3.00	3.00	0.00	0.00
4,300.0	10.68	309.00	4,297.9	20.8	-25.7	-16.2	3.00	3.00	0.00	0.00
4,400.0	13.68	309.00	4,395.7	34.1	-42.1	-26.6	3.00	3.00	0.00	0.00
4,500.0	16.68	309.00	4,492.2	50.6	-62.5	-39.4	3.00	3.00	0.00	0.00
4,600.0	19.68	309.00	4,587.2	70.2	-86.7	-54.7	3.00	3.00	0.00	0.00
4,610.6	20.00	309.00	4,597.1	72.5	-89.5	-56.5	3.00	3.00	0.00	0.00
4,700.0	20.00	309.00	4,681.1	91.7	-113.3	-71.5	0.00	0.00	0.00	0.00
4,800.0	20.00	309.00	4,775.1	113.3	-139.9	-88.2	0.00	0.00	0.00	0.00
4,900.0	20.00	309.00	4,869.1	134.8	-166.4	-105.0	0.00	0.00	0.00	0.00
5,000.0	20.00	309.00	4,963.0	156.3	-193.0	-121.8	0.00	0.00	0.00	0.00
5,100.0	20.00	309.00	5,057.0	177.8	-219.6	-138.5	0.00	0.00	0.00	0.00
5,200.0	20.00	309.00	5,151.0	199.4	-246.2	-155.3	0.00	0.00	0.00	0.00
5,300.0	20.00	309.00	5,245.0	220.9	-272.8	-172.1	0.00	0.00	0.00	0.00
5,400.0	20.00	309.00	5,338.9	242.4	-299.3	-188.8	0.00	0.00	0.00	0.00

**Plan Report for Booth G-26H - Plan A Rev 0 Proposal - Permit Plan**

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 (°)
5,500.0	20.00	309.00	5,432.9	263.9	-325.9	-205.6	0.00	0.00	0.00	0.00
5,600.0	20.00	309.00	5,526.9	285.4	-352.5	-222.4	0.00	0.00	0.00	0.00
5,700.0	20.00	309.00	5,620.8	307.0	-379.1	-239.2	0.00	0.00	0.00	0.00
5,800.0	20.00	309.00	5,714.8	328.5	-405.7	-255.9	0.00	0.00	0.00	0.00
5,900.0	20.00	309.00	5,808.8	350.0	-432.2	-272.7	0.00	0.00	0.00	0.00
6,000.0	20.00	309.00	5,902.7	371.5	-458.8	-289.5	0.00	0.00	0.00	0.00
6,100.0	20.00	309.00	5,996.7	393.1	-485.4	-306.2	0.00	0.00	0.00	0.00
6,200.0	20.00	309.00	6,090.7	414.6	-512.0	-323.0	0.00	0.00	0.00	0.00
6,300.0	20.00	309.00	6,184.6	436.1	-538.6	-339.8	0.00	0.00	0.00	0.00
6,400.0	20.00	309.00	6,278.6	457.6	-565.1	-356.5	0.00	0.00	0.00	0.00
6,500.0	20.00	309.00	6,372.6	479.2	-591.7	-373.3	0.00	0.00	0.00	0.00
6,600.0	20.00	309.00	6,466.6	500.7	-618.3	-390.1	0.00	0.00	0.00	0.00
6,693.8	20.00	309.00	6,554.7	520.9	-643.2	-405.8	0.00	0.00	0.00	0.00
<b>Start Build @ 6693.8'MD</b>										
6,700.0	19.56	307.23	6,560.5	522.2	-644.9	-406.8	12.04	-7.15	-28.62	-127.27
6,800.0	15.80	268.84	6,656.1	532.1	-671.9	-412.0	12.00	-3.76	-38.39	-125.60
6,900.0	19.93	231.26	6,751.6	521.1	-698.9	-396.7	12.00	4.13	-37.57	-88.88
7,000.0	28.73	211.06	6,842.8	489.7	-724.7	-361.4	12.00	8.80	-20.20	-52.98
7,100.0	39.16	200.32	6,925.7	439.3	-748.2	-307.8	12.00	10.43	-10.74	-34.49
7,200.0	50.22	193.62	6,996.7	372.1	-768.3	-238.2	12.00	11.05	-6.70	-25.53
7,300.0	61.54	188.82	7,052.7	291.0	-784.1	-155.6	12.00	11.33	-4.80	-20.74
7,400.0	73.01	184.96	7,091.3	199.6	-795.0	-63.7	12.00	11.46	-3.86	-18.03
7,500.0	84.53	181.55	7,110.7	101.9	-800.5	33.6	12.00	11.53	-3.41	-16.54
7,547.4	90.00	180.00	7,113.0	54.6	-801.2	80.4	11.99	11.54	-3.27	-15.87
<b>End Build @ 7547.4'MD</b>										
7,551.0	90.00	180.00	7,113.0	51.0	-801.2	83.9	0.00	0.00	0.00	0.00
<b>7" Casing Point @ 7551'MD</b>										
7,578.7	90.83	180.00	7,112.8	23.3	-801.2	111.2	3.00	3.00	0.00	-0.08
7,600.0	90.83	180.00	7,112.5	2.0	-801.2	132.2	0.00	0.00	0.00	0.00
7,700.0	90.83	180.00	7,111.0	-98.0	-801.2	230.8	0.00	0.00	0.00	0.00
7,800.0	90.83	180.00	7,109.6	-198.0	-801.2	329.4	0.00	0.00	0.00	0.00
7,900.0	90.83	180.00	7,108.1	-298.0	-801.2	428.0	0.00	0.00	0.00	0.00
8,000.0	90.83	180.00	7,106.7	-398.0	-801.2	526.5	0.00	0.00	0.00	0.00
8,100.0	90.83	180.00	7,105.3	-498.0	-801.2	625.1	0.00	0.00	0.00	0.00
8,200.0	90.83	180.00	7,103.8	-598.0	-801.2	723.7	0.00	0.00	0.00	0.00
8,300.0	90.83	180.00	7,102.4	-698.0	-801.2	822.3	0.00	0.00	0.00	0.00
8,400.0	90.83	180.00	7,100.9	-798.0	-801.2	920.8	0.00	0.00	0.00	0.00
8,500.0	90.83	180.00	7,099.5	-897.9	-801.2	1,019.4	0.00	0.00	0.00	0.00
8,600.0	90.83	180.00	7,098.0	-997.9	-801.2	1,118.0	0.00	0.00	0.00	0.00
8,700.0	90.83	180.00	7,096.6	-1,097.9	-801.2	1,216.6	0.00	0.00	0.00	0.00
8,800.0	90.83	180.00	7,095.1	-1,197.9	-801.2	1,315.2	0.00	0.00	0.00	0.00
8,900.0	90.83	180.00	7,093.7	-1,297.9	-801.2	1,413.7	0.00	0.00	0.00	0.00
9,000.0	90.83	180.00	7,092.2	-1,397.9	-801.2	1,512.3	0.00	0.00	0.00	0.00
9,100.0	90.83	180.00	7,090.8	-1,497.9	-801.2	1,610.9	0.00	0.00	0.00	0.00
9,200.0	90.83	180.00	7,089.3	-1,597.9	-801.2	1,709.5	0.00	0.00	0.00	0.00
9,300.0	90.83	180.00	7,087.9	-1,697.9	-801.2	1,808.0	0.00	0.00	0.00	0.00
9,400.0	90.83	180.00	7,086.4	-1,797.8	-801.2	1,906.6	0.00	0.00	0.00	0.00
9,500.0	90.83	180.00	7,085.0	-1,897.8	-801.2	2,005.2	0.00	0.00	0.00	0.00
9,600.0	90.83	180.00	7,083.5	-1,997.8	-801.2	2,103.8	0.00	0.00	0.00	0.00
9,700.0	90.83	180.00	7,082.1	-2,097.8	-801.2	2,202.4	0.00	0.00	0.00	0.00
9,800.0	90.83	180.00	7,080.6	-2,197.8	-801.2	2,300.9	0.00	0.00	0.00	0.00
9,900.0	90.83	180.00	7,079.2	-2,297.8	-801.2	2,399.5	0.00	0.00	0.00	0.00
10,000.0	90.83	180.00	7,077.7	-2,397.8	-801.2	2,498.1	0.00	0.00	0.00	0.00
10,100.0	90.83	180.00	7,076.3	-2,497.8	-801.2	2,596.7	0.00	0.00	0.00	0.00
10,200.0	90.83	180.00	7,074.8	-2,597.8	-801.2	2,695.2	0.00	0.00	0.00	0.00
10,300.0	90.83	180.00	7,073.4	-2,697.7	-801.2	2,793.8	0.00	0.00	0.00	0.00
10,400.0	90.83	180.00	7,071.9	-2,797.7	-801.2	2,892.4	0.00	0.00	0.00	0.00
10,500.0	90.83	180.00	7,070.5	-2,897.7	-801.2	2,991.0	0.00	0.00	0.00	0.00
10,600.0	90.83	180.00	7,069.0	-2,997.7	-801.2	3,089.5	0.00	0.00	0.00	0.00

## Plan Report for Booth G-26H - Plan A Rev 0 Proposal - Permit Plan

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 (°)
10,700.0	90.83	180.00	7,067.6	-3,097.7	-801.2	3,188.1	0.00	0.00	0.00	0.00
10,800.0	90.83	180.00	7,066.1	-3,197.7	-801.2	3,286.7	0.00	0.00	0.00	0.00
10,900.0	90.83	180.00	7,064.7	-3,297.7	-801.2	3,385.3	0.00	0.00	0.00	0.00
11,000.0	90.83	180.00	7,063.2	-3,397.7	-801.2	3,483.9	0.00	0.00	0.00	0.00
11,100.0	90.83	180.00	7,061.8	-3,497.7	-801.2	3,582.4	0.00	0.00	0.00	0.00
11,200.0	90.83	180.00	7,060.3	-3,597.7	-801.2	3,681.0	0.00	0.00	0.00	0.00
11,300.0	90.83	180.00	7,058.9	-3,697.6	-801.2	3,779.6	0.00	0.00	0.00	0.00
11,400.0	90.83	180.00	7,057.4	-3,797.6	-801.2	3,878.2	0.00	0.00	0.00	0.00
11,500.0	90.83	180.00	7,056.0	-3,897.6	-801.2	3,976.7	0.00	0.00	0.00	0.00
11,600.0	90.83	180.00	7,054.6	-3,997.6	-801.2	4,075.3	0.00	0.00	0.00	0.00
11,700.0	90.83	180.00	7,053.1	-4,097.6	-801.2	4,173.9	0.00	0.00	0.00	0.00
11,800.0	90.83	180.00	7,051.7	-4,197.6	-801.2	4,272.5	0.00	0.00	0.00	0.00
11,900.0	90.83	180.00	7,050.2	-4,297.6	-801.2	4,371.1	0.00	0.00	0.00	0.00
12,000.0	90.83	180.00	7,048.8	-4,397.6	-801.2	4,469.6	0.00	0.00	0.00	0.00
12,100.0	90.83	180.00	7,047.3	-4,497.6	-801.2	4,568.2	0.00	0.00	0.00	0.00
12,200.0	90.83	180.00	7,045.9	-4,597.5	-801.2	4,666.8	0.00	0.00	0.00	0.00
12,300.0	90.83	180.00	7,044.4	-4,697.5	-801.2	4,765.4	0.00	0.00	0.00	0.00
12,319.0	90.83	180.00	7,044.1	-4,716.5	-801.2	4,784.1	0.00	0.00	0.00	0.00

TD @ 12319'MD, 7044.2'TVD

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
3,943.9	3,943.9	0.0	0.0	Start Tangent @ 3943.9'MD
6,693.8	6,554.7	520.9	-643.2	Start Build @ 6693.8'MD
7,547.4	7,113.0	54.6	-801.2	End Build @ 7547.4'MD
7,551.0	7,113.0	51.0	-801.2	7" Casing Point @ 7551'MD
12,319.0	7,044.1	-4,716.5	-801.2	TD @ 12319'MD, 7044.2'TVD

Vertical Section Information

Angle Type	Target	Azimuth (°)	Origin Type	Origin		Start TVD (ft)
				+N/_S (ft)	+E/-W (ft)	
TD	No Target (Freehand)	189.64	Slot	0.0	0.0	0.0

Survey tool program

From (ft)	To (ft)	Survey/Plan	Survey Tool
0.0	12,318.9	Plan A Rev 0 Proposal - Permit Plan	MWD

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**Plan Report for Booth G-26H - Plan A Rev 0 Proposal - Permit Plan**

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*Targets associated with this wellbore*

Target Name	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Shape
G - 26H 7" Casing Point	7,113.0	50.9	-801.2	Point
E - 26H Target BHL	7,049.0	-4,716.6	-1,461.2	Point
G - 26H SHL	0.0	241.5	-230.6	Point
G - 26H Target BHL	7,044.0	-4,716.6	-801.2	Point
E - 26H 7" Casing Point	7,121.0	51.1	-1,461.2	Point
F - 26H 7" Casing Point	7,198.0	51.0	-1,131.1	Point
F - 26H Target BHL	7,198.0	-4,716.6	-1,131.2	Point

## North Reference Sheet for Sec. 26-T7N-R65W-6th P.M. - Booth G-26H - PAD 9

### Permit Plan

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

Vertical Depths are relative to WELL RKB 16' @ 4912.0ft (Original Well Elev). Northing and Easting are relative to Booth G-26H

Coordinate System is US State Plane 1983, Colorado Northern Zone using datum North American Datum 1983, ellipsoid GRS 1980

Projection method is Lambert Conformal Conic (2 parallel)

Central Meridian is -105.50°, Longitude Origin: 0° 0' 0.000 E°, Latitude Origin: 40° 47' 0.000 N°

False Easting: 3,000,000.00ft, False Northing: 1,000,000.00ft, Scale Reduction: 0.99997060

Grid Coordinates of Well: 1,444,962.55 ft N, 3,242,074.93 ft E

Geographical Coordinates of Well: 40° 33' 05.61" N, 104° 37' 43.90" W

Grid Convergence at Surface is: 0.56°

Based upon Minimum Curvature type calculations, at a Measured Depth of 12,318.98ft  
the Bottom Hole Displacement is 4,784.09ft in the Direction of 189.64° (True).

Magnetic Convergence at surface is: -7.94° ( 9 December 2013, , BGGM2013)

