



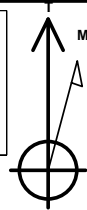
PROJECT DETAILS: Weld County, CO NAD 83

Geodetic System: US State Plane 1983
Datum: North American Datum 1983
Ellipsoid: GRS 1980
Zone: Colorado Northern Zone
System Datum: Mean Sea Level
Local North: True

Plan: Plan 1 (Hawkins 5-61-20-4033B2/OH)

Created By: Seth Burstad Date: 10-7-2016

Project: Weld County, CO NAD 83
Site: Hawkins 5-61-20_19 SW21 Pad
Well: Hawkins 5-61-20-4033B2
Wellbore: OH
Design: Plan 1



Azimuths to True North
Magnetic North: 8.13°



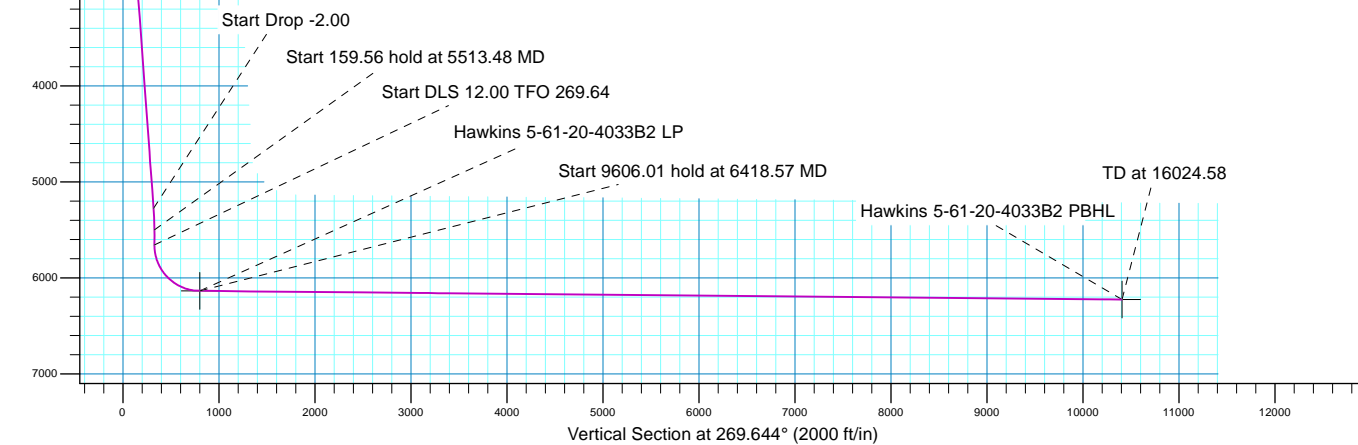
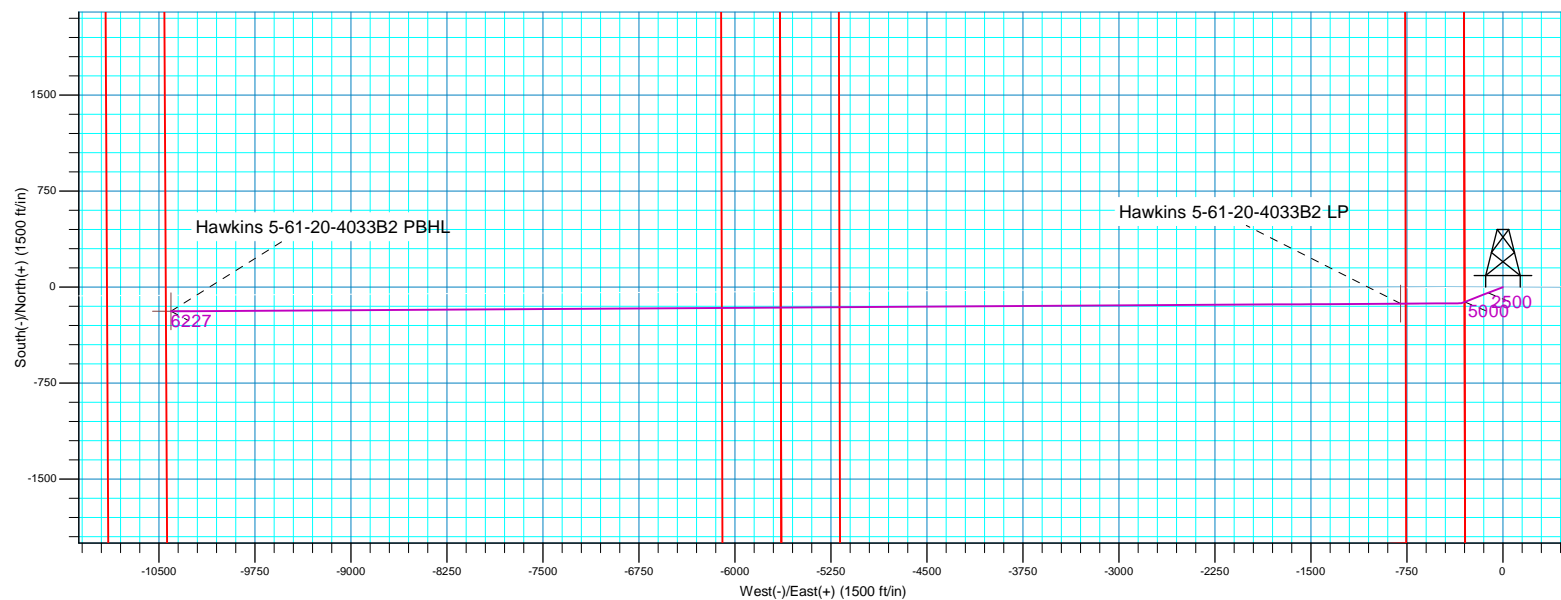
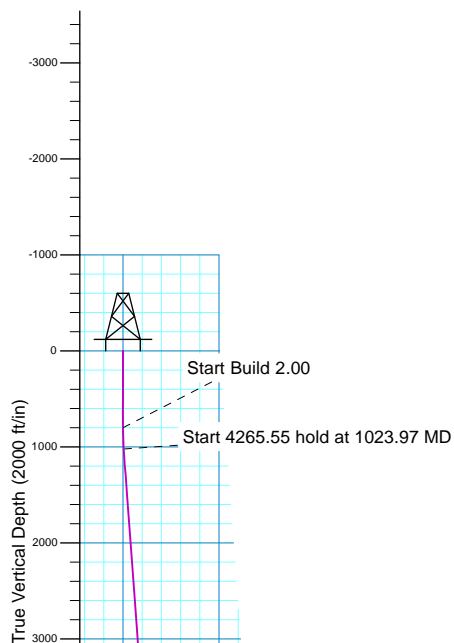
Magnetic Field
Strength: 52545.1nT
Dip Angle: 66.98°
Date: 10/6/2016
Model: BGGM2016

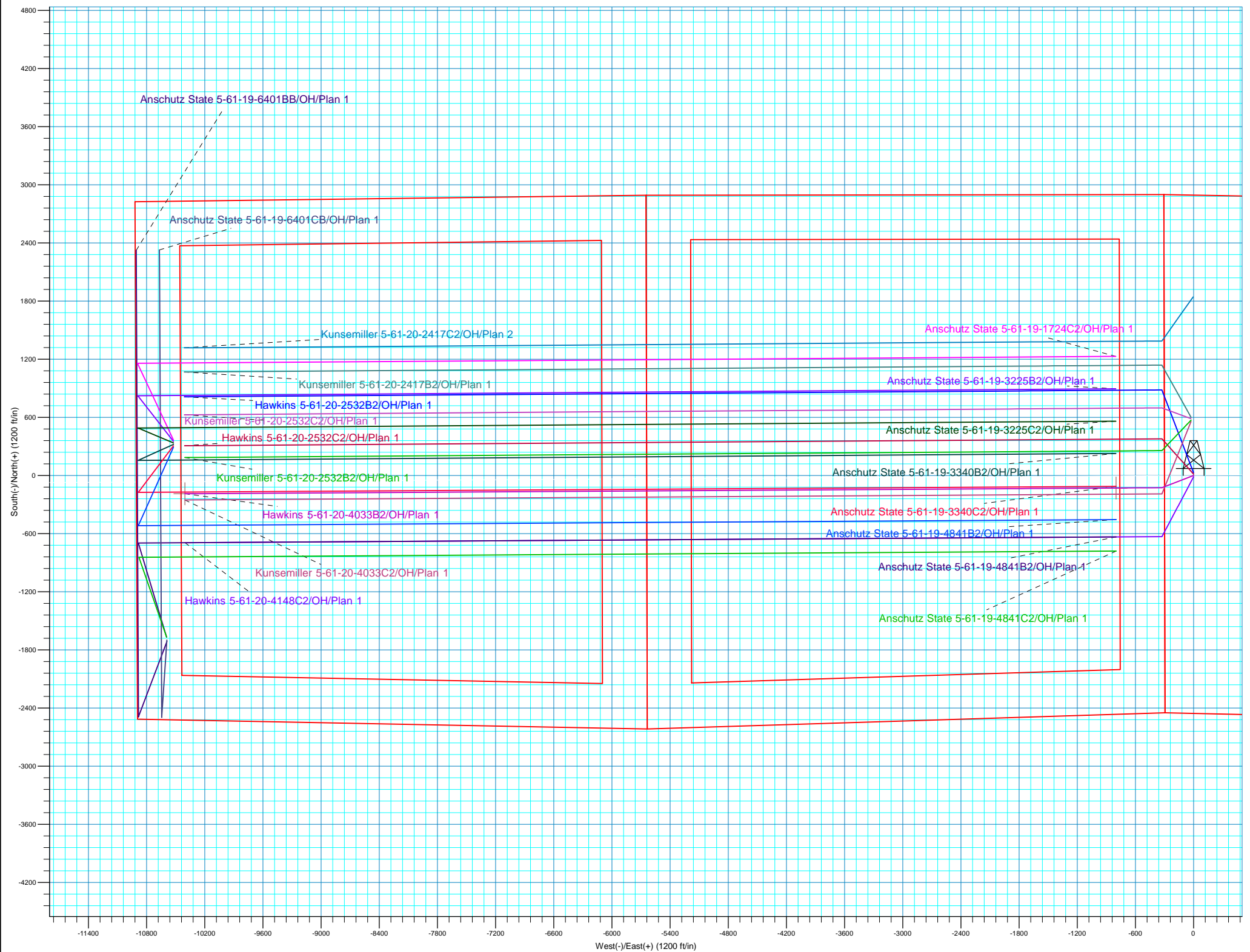
SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect
0.00	0.00	0.000	0.00	0.00	0.00	0.00	0.00	0.00
800.00	0.00	0.000	800.00	0.00	0.00	0.00	0.00	0.00
1023.97	4.48	248.876	1023.74	-3.15	-8.16	2.00	248.88	8.18
5289.52	4.48	248.876	5276.26	-123.21	-318.91	0.00	0.00	319.67
5513.48	0.00	0.000	5500.00	-126.36	-327.08	2.00	180.00	327.85
5673.04	0.00	0.000	5659.56	-126.36	-327.08	0.00	0.00	327.85
6418.57	89.46	269.644	6137.00	-129.31	-800.06	12.00	269.64	800.85
16024.58	89.46	269.644	6227.00	-189.05	-10405.46	0.00	0.00	10406.43

WELL DETAILS: Hawkins 5-61-20-4033B2

		GL 4664' & KB 20' @ 4684.00ft		4664.00	Longitude
+N/-S	+E/-W	Northing	Easting	Latitude	
0.00	0.00	1385989.81	3355837.74	40° 23' 9.269 N	104° 13' 21.270 W







Bill Barrett Corp.

Weld County, CO NAD 83
Hawkins 5-61-20_19 SW21 Pad
Hawkins 5-61-20-4033B2

OH

Plan: Plan 1

Standard Planning Report

07 October, 2016



Database:	Casper District	Local Co-ordinate Reference:	Well Hawkins 5-61-20-4033B2
Company:	Bill Barrett Corp.	TVD Reference:	GL 4664' & KB 20' @ 4684.00ft
Project:	Weld County, CO NAD 83	MD Reference:	GL 4664' & KB 20' @ 4684.00ft
Site:	Hawkins 5-61-20_19 SW21 Pad	North Reference:	True
Well:	Hawkins 5-61-20-4033B2	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan 1		

Project	Weld County, CO NAD 83		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Northern Zone		

Site	Hawkins 5-61-20_19 SW21 Pad, Site Center : 5-61-20-2532B2			
Site Position:		Northing:	1,386,019.32 usft	Latitude: 40° 23' 9.560 N
From:	Lat/Long	Easting:	3,355,836.47 usft	Longitude: 104° 13' 21.281 W
Position Uncertainty:	0.00 ft	Slot Radius:	13.200 in	Grid Convergence: 0.83 °

Well	Hawkins 5-61-20-4033B2, 2156' FSL 300' FWL Sec 21 T5N R61W			
Well Position	+N/-S	-29.52 ft	Northing:	1,385,989.81 usft
	+E/-W	0.84 ft	Easting:	3,355,837.73 usft
Position Uncertainty		0.00 ft	Wellhead Elevation:	0.00 ft
			Ground Level:	4,664.00 ft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	BGGM2016	10/6/2016	8.13	66.98	52,545

Design	Plan 1			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.00	0.00	0.00	269.644

Plan Sections										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.00	0.00	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
800.00	0.00	0.000	800.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,023.97	4.48	248.876	1,023.74	-3.15	-8.16	2.00	2.00	0.00	248.88	
5,289.52	4.48	248.876	5,276.26	-123.21	-318.91	0.00	0.00	0.00	0.00	
5,513.49	0.00	0.000	5,500.00	-126.36	-327.08	2.00	-2.00	0.00	180.00	
5,673.05	0.00	0.000	5,659.56	-126.36	-327.08	0.00	0.00	0.00	0.00	
6,418.57	89.46	269.644	6,137.00	-129.31	-800.06	12.00	12.00	-12.12	269.64	
16,024.58	89.46	269.644	6,227.00	-189.05	-10,405.46	0.00	0.00	0.00	0.00	Hawkins 5-61-20-403

Database:	Casper District	Local Co-ordinate Reference:	Well Hawkins 5-61-20-4033B2
Company:	Bill Barrett Corp.	TVD Reference:	GL 4664' & KB 20' @ 4684.00ft
Project:	Weld County, CO NAD 83	MD Reference:	GL 4664' & KB 20' @ 4684.00ft
Site:	Hawkins 5-61-20_19 SW21 Pad	North Reference:	True
Well:	Hawkins 5-61-20-4033B2	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan 1		

Planned Survey									
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)
0.00	0.00	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.00	0.000	100.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.000	200.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.000	300.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.00	0.000	400.00	0.00	0.00	0.00	0.00	0.00	0.00
500.00	0.00	0.000	500.00	0.00	0.00	0.00	0.00	0.00	0.00
600.00	0.00	0.000	600.00	0.00	0.00	0.00	0.00	0.00	0.00
700.00	0.00	0.000	700.00	0.00	0.00	0.00	0.00	0.00	0.00
800.00	0.00	0.000	800.00	0.00	0.00	0.00	0.00	0.00	0.00
Start Build 2.00									
900.00	2.00	248.876	899.98	-0.63	-1.63	1.63	2.00	2.00	0.00
1,000.00	4.00	248.876	999.84	-2.51	-6.51	6.53	2.00	2.00	0.00
1,023.97	4.48	248.876	1,023.74	-3.15	-8.16	8.18	2.00	2.00	0.00
Start 4265.55 hold at 1023.97 MD									
1,100.00	4.48	248.876	1,099.54	-5.29	-13.70	13.73	0.00	0.00	0.00
1,200.00	4.48	248.876	1,199.23	-8.11	-20.99	21.04	0.00	0.00	0.00
1,300.00	4.48	248.876	1,298.93	-10.92	-28.27	28.34	0.00	0.00	0.00
1,400.00	4.48	248.876	1,398.62	-13.74	-35.56	35.64	0.00	0.00	0.00
1,500.00	4.48	248.876	1,498.32	-16.55	-42.84	42.94	0.00	0.00	0.00
1,600.00	4.48	248.876	1,598.01	-19.37	-50.13	50.25	0.00	0.00	0.00
1,700.00	4.48	248.876	1,697.71	-22.18	-57.41	57.55	0.00	0.00	0.00
1,800.00	4.48	248.876	1,797.40	-25.00	-64.70	64.85	0.00	0.00	0.00
1,900.00	4.48	248.876	1,897.10	-27.81	-71.98	72.15	0.00	0.00	0.00
2,000.00	4.48	248.876	1,996.79	-30.62	-79.27	79.46	0.00	0.00	0.00
2,100.00	4.48	248.876	2,096.49	-33.44	-86.55	86.76	0.00	0.00	0.00
2,200.00	4.48	248.876	2,196.18	-36.25	-93.84	94.06	0.00	0.00	0.00
2,300.00	4.48	248.876	2,295.87	-39.07	-101.12	101.36	0.00	0.00	0.00
2,400.00	4.48	248.876	2,395.57	-41.88	-108.41	108.67	0.00	0.00	0.00
2,500.00	4.48	248.876	2,495.26	-44.70	-115.69	115.97	0.00	0.00	0.00
2,600.00	4.48	248.876	2,594.96	-47.51	-122.98	123.27	0.00	0.00	0.00
2,700.00	4.48	248.876	2,694.65	-50.33	-130.26	130.57	0.00	0.00	0.00
2,800.00	4.48	248.876	2,794.35	-53.14	-137.55	137.88	0.00	0.00	0.00
2,900.00	4.48	248.876	2,894.04	-55.96	-144.83	145.18	0.00	0.00	0.00
3,000.00	4.48	248.876	2,993.74	-58.77	-152.12	152.48	0.00	0.00	0.00
3,100.00	4.48	248.876	3,093.43	-61.58	-159.40	159.78	0.00	0.00	0.00
3,200.00	4.48	248.876	3,193.13	-64.40	-166.69	167.09	0.00	0.00	0.00
3,300.00	4.48	248.876	3,292.82	-67.21	-173.97	174.39	0.00	0.00	0.00
3,400.00	4.48	248.876	3,392.51	-70.03	-181.26	181.69	0.00	0.00	0.00
3,500.00	4.48	248.876	3,492.21	-72.84	-188.54	188.99	0.00	0.00	0.00
3,600.00	4.48	248.876	3,591.90	-75.66	-195.83	196.30	0.00	0.00	0.00
3,700.00	4.48	248.876	3,691.60	-78.47	-203.11	203.60	0.00	0.00	0.00
3,800.00	4.48	248.876	3,791.29	-81.29	-210.40	210.90	0.00	0.00	0.00
3,900.00	4.48	248.876	3,890.99	-84.10	-217.69	218.20	0.00	0.00	0.00
4,000.00	4.48	248.876	3,990.68	-86.92	-224.97	225.51	0.00	0.00	0.00
4,100.00	4.48	248.876	4,090.38	-89.73	-232.26	232.81	0.00	0.00	0.00
4,200.00	4.48	248.876	4,190.07	-92.55	-239.54	240.11	0.00	0.00	0.00
4,300.00	4.48	248.876	4,289.77	-95.36	-246.83	247.41	0.00	0.00	0.00
4,400.00	4.48	248.876	4,389.46	-98.17	-254.11	254.72	0.00	0.00	0.00
4,500.00	4.48	248.876	4,489.15	-100.99	-261.40	262.02	0.00	0.00	0.00
4,600.00	4.48	248.876	4,588.85	-103.80	-268.68	269.32	0.00	0.00	0.00
4,700.00	4.48	248.876	4,688.54	-106.62	-275.97	276.62	0.00	0.00	0.00
4,800.00	4.48	248.876	4,788.24	-109.43	-283.25	283.93	0.00	0.00	0.00
4,900.00	4.48	248.876	4,887.93	-112.25	-290.54	291.23	0.00	0.00	0.00
5,000.00	4.48	248.876	4,987.63	-115.06	-297.82	298.53	0.00	0.00	0.00

Database:	Casper District	Local Co-ordinate Reference:	Well Hawkins 5-61-20-4033B2
Company:	Bill Barrett Corp.	TVD Reference:	GL 4664' & KB 20' @ 4684.00ft
Project:	Weld County, CO NAD 83	MD Reference:	GL 4664' & KB 20' @ 4684.00ft
Site:	Hawkins 5-61-20_19 SW21 Pad	North Reference:	True
Well:	Hawkins 5-61-20-4033B2	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan 1		

Planned Survey									
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)
5,100.00	4.48	248.876	5,087.32	-117.88	-305.11	305.83	0.00	0.00	0.00
5,200.00	4.48	248.876	5,187.02	-120.69	-312.39	313.14	0.00	0.00	0.00
5,289.52	4.48	248.876	5,276.26	-123.21	-318.91	319.67	0.00	0.00	0.00
Start Drop -2.00									
5,300.00	4.27	248.876	5,286.71	-123.50	-319.66	320.42	2.00	-2.00	0.00
5,400.00	2.27	248.876	5,386.54	-125.55	-324.98	325.75	2.00	-2.00	0.00
5,500.00	0.27	248.876	5,486.52	-126.35	-327.05	327.82	2.00	-2.00	0.00
5,513.49	0.00	0.000	5,500.00	-126.36	-327.08	327.85	2.00	-2.00	0.00
Start 159.56 hold at 5513.48 MD									
5,600.00	0.00	0.000	5,586.52	-126.36	-327.08	327.85	0.00	0.00	0.00
5,673.05	0.00	0.000	5,659.56	-126.36	-327.08	327.85	0.00	0.00	0.00
Start DLS 12.00 TFO 269.64									
5,700.00	3.23	269.644	5,686.50	-126.37	-327.84	328.62	12.00	12.00	0.00
5,800.00	15.23	269.644	5,785.02	-126.47	-343.85	344.63	12.00	12.00	0.00
5,900.00	27.23	269.644	5,878.06	-126.69	-380.01	380.79	12.00	12.00	0.00
6,000.00	39.23	269.644	5,961.56	-127.03	-434.71	435.49	12.00	12.00	0.00
6,100.00	51.23	269.644	6,031.85	-127.47	-505.58	506.36	12.00	12.00	0.00
6,200.00	63.23	269.644	6,085.87	-128.00	-589.51	590.30	12.00	12.00	0.00
6,300.00	75.23	269.644	6,121.26	-128.58	-682.85	683.63	12.00	12.00	0.00
6,400.00	87.23	269.644	6,136.47	-129.19	-781.50	782.28	12.00	12.00	0.00
6,418.57	89.46	269.644	6,137.00	-129.31	-800.06	800.85	12.00	12.00	0.00
Start 9606.01 hold at 6418.57 MD									
6,500.00	89.46	269.644	6,137.77	-129.81	-881.48	882.27	0.00	0.00	0.00
6,600.00	89.46	269.644	6,138.70	-130.43	-981.48	982.27	0.00	0.00	0.00
6,700.00	89.46	269.644	6,139.64	-131.06	-1,081.47	1,082.26	0.00	0.00	0.00
6,800.00	89.46	269.644	6,140.58	-131.68	-1,181.46	1,182.26	0.00	0.00	0.00
6,900.00	89.46	269.644	6,141.51	-132.30	-1,281.46	1,282.25	0.00	0.00	0.00
7,000.00	89.46	269.644	6,142.45	-132.92	-1,381.45	1,382.25	0.00	0.00	0.00
7,100.00	89.46	269.644	6,143.39	-133.54	-1,481.44	1,482.24	0.00	0.00	0.00
7,200.00	89.46	269.644	6,144.33	-134.17	-1,581.44	1,582.24	0.00	0.00	0.00
7,300.00	89.46	269.644	6,145.26	-134.79	-1,681.43	1,682.24	0.00	0.00	0.00
7,400.00	89.46	269.644	6,146.20	-135.41	-1,781.42	1,782.23	0.00	0.00	0.00
7,500.00	89.46	269.644	6,147.14	-136.03	-1,881.42	1,882.23	0.00	0.00	0.00
7,600.00	89.46	269.644	6,148.07	-136.65	-1,981.41	1,982.22	0.00	0.00	0.00
7,700.00	89.46	269.644	6,149.01	-137.28	-2,081.41	2,082.22	0.00	0.00	0.00
7,800.00	89.46	269.644	6,149.95	-137.90	-2,181.40	2,182.21	0.00	0.00	0.00
7,900.00	89.46	269.644	6,150.88	-138.52	-2,281.39	2,282.21	0.00	0.00	0.00
8,000.00	89.46	269.644	6,151.82	-139.14	-2,381.39	2,382.21	0.00	0.00	0.00
8,100.00	89.46	269.644	6,152.76	-139.76	-2,481.38	2,482.20	0.00	0.00	0.00
8,200.00	89.46	269.644	6,153.69	-140.38	-2,581.37	2,582.20	0.00	0.00	0.00
8,300.00	89.46	269.644	6,154.63	-141.01	-2,681.37	2,682.19	0.00	0.00	0.00
8,400.00	89.46	269.644	6,155.57	-141.63	-2,781.36	2,782.19	0.00	0.00	0.00
8,500.00	89.46	269.644	6,156.50	-142.25	-2,881.35	2,882.18	0.00	0.00	0.00
8,600.00	89.46	269.644	6,157.44	-142.87	-2,981.35	2,982.18	0.00	0.00	0.00
8,700.00	89.46	269.644	6,158.38	-143.49	-3,081.34	3,082.17	0.00	0.00	0.00
8,800.00	89.46	269.644	6,159.31	-144.12	-3,181.34	3,182.17	0.00	0.00	0.00
8,900.00	89.46	269.644	6,160.25	-144.74	-3,281.33	3,282.17	0.00	0.00	0.00
9,000.00	89.46	269.644	6,161.19	-145.36	-3,381.32	3,382.16	0.00	0.00	0.00
9,100.00	89.46	269.644	6,162.13	-145.98	-3,481.32	3,482.16	0.00	0.00	0.00
9,200.00	89.46	269.644	6,163.06	-146.60	-3,581.31	3,582.15	0.00	0.00	0.00
9,300.00	89.46	269.644	6,164.00	-147.23	-3,681.30	3,682.15	0.00	0.00	0.00
9,400.00	89.46	269.644	6,164.94	-147.85	-3,781.30	3,782.14	0.00	0.00	0.00
9,500.00	89.46	269.644	6,165.87	-148.47	-3,881.29	3,882.14	0.00	0.00	0.00

Database:	Casper District	Local Co-ordinate Reference:	Well Hawkins 5-61-20-4033B2
Company:	Bill Barrett Corp.	TVD Reference:	GL 4664' & KB 20' @ 4684.00ft
Project:	Weld County, CO NAD 83	MD Reference:	GL 4664' & KB 20' @ 4684.00ft
Site:	Hawkins 5-61-20_19 SW21 Pad	North Reference:	True
Well:	Hawkins 5-61-20-4033B2	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan 1		

Planned Survey									
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)
9,600.00	89.46	269.644	6,166.81	-149.09	-3,981.29	3,982.13	0.00	0.00	0.00
9,700.00	89.46	269.644	6,167.75	-149.71	-4,081.28	4,082.13	0.00	0.00	0.00
9,800.00	89.46	269.644	6,168.68	-150.34	-4,181.27	4,182.13	0.00	0.00	0.00
9,900.00	89.46	269.644	6,169.62	-150.96	-4,281.27	4,282.12	0.00	0.00	0.00
10,000.00	89.46	269.644	6,170.56	-151.58	-4,381.26	4,382.12	0.00	0.00	0.00
10,100.00	89.46	269.644	6,171.49	-152.20	-4,481.25	4,482.11	0.00	0.00	0.00
10,200.00	89.46	269.644	6,172.43	-152.82	-4,581.25	4,582.11	0.00	0.00	0.00
10,300.00	89.46	269.644	6,173.37	-153.45	-4,681.24	4,682.10	0.00	0.00	0.00
10,400.00	89.46	269.644	6,174.30	-154.07	-4,781.23	4,782.10	0.00	0.00	0.00
10,500.00	89.46	269.644	6,175.24	-154.69	-4,881.23	4,882.10	0.00	0.00	0.00
10,600.00	89.46	269.644	6,176.18	-155.31	-4,981.22	4,982.09	0.00	0.00	0.00
10,700.00	89.46	269.644	6,177.12	-155.93	-5,081.22	5,082.09	0.00	0.00	0.00
10,800.00	89.46	269.644	6,178.05	-156.55	-5,181.21	5,182.08	0.00	0.00	0.00
10,900.00	89.46	269.644	6,178.99	-157.18	-5,281.20	5,282.08	0.00	0.00	0.00
11,000.00	89.46	269.644	6,179.93	-157.80	-5,381.20	5,382.07	0.00	0.00	0.00
11,100.00	89.46	269.644	6,180.86	-158.42	-5,481.19	5,482.07	0.00	0.00	0.00
11,200.00	89.46	269.644	6,181.80	-159.04	-5,581.18	5,582.06	0.00	0.00	0.00
11,300.00	89.46	269.644	6,182.74	-159.66	-5,681.18	5,682.06	0.00	0.00	0.00
11,400.00	89.46	269.644	6,183.67	-160.29	-5,781.17	5,782.06	0.00	0.00	0.00
11,500.00	89.46	269.644	6,184.61	-160.91	-5,881.17	5,882.05	0.00	0.00	0.00
11,600.00	89.46	269.644	6,185.55	-161.53	-5,981.16	5,982.05	0.00	0.00	0.00
11,700.00	89.46	269.644	6,186.48	-162.15	-6,081.15	6,082.04	0.00	0.00	0.00
11,800.00	89.46	269.644	6,187.42	-162.77	-6,181.15	6,182.04	0.00	0.00	0.00
11,900.00	89.46	269.644	6,188.36	-163.40	-6,281.14	6,282.03	0.00	0.00	0.00
12,000.00	89.46	269.644	6,189.29	-164.02	-6,381.13	6,382.03	0.00	0.00	0.00
12,100.00	89.46	269.644	6,190.23	-164.64	-6,481.13	6,482.03	0.00	0.00	0.00
12,200.00	89.46	269.644	6,191.17	-165.26	-6,581.12	6,582.02	0.00	0.00	0.00
12,300.00	89.46	269.644	6,192.11	-165.88	-6,681.11	6,682.02	0.00	0.00	0.00
12,400.00	89.46	269.644	6,193.04	-166.51	-6,781.11	6,782.01	0.00	0.00	0.00
12,500.00	89.46	269.644	6,193.98	-167.13	-6,881.10	6,882.01	0.00	0.00	0.00
12,600.00	89.46	269.644	6,194.92	-167.75	-6,981.10	6,982.00	0.00	0.00	0.00
12,700.00	89.46	269.644	6,195.85	-168.37	-7,081.09	7,082.00	0.00	0.00	0.00
12,800.00	89.46	269.644	6,196.79	-168.99	-7,181.08	7,181.99	0.00	0.00	0.00
12,900.00	89.46	269.644	6,197.73	-169.62	-7,281.08	7,281.99	0.00	0.00	0.00
13,000.00	89.46	269.644	6,198.66	-170.24	-7,381.07	7,381.99	0.00	0.00	0.00
13,100.00	89.46	269.644	6,199.60	-170.86	-7,481.06	7,481.98	0.00	0.00	0.00
13,200.00	89.46	269.644	6,200.54	-171.48	-7,581.06	7,581.98	0.00	0.00	0.00
13,300.00	89.46	269.644	6,201.47	-172.10	-7,681.05	7,681.97	0.00	0.00	0.00
13,400.00	89.46	269.644	6,202.41	-172.72	-7,781.05	7,781.97	0.00	0.00	0.00
13,500.00	89.46	269.644	6,203.35	-173.35	-7,881.04	7,881.96	0.00	0.00	0.00
13,600.00	89.46	269.644	6,204.28	-173.97	-7,981.03	7,981.96	0.00	0.00	0.00
13,700.00	89.46	269.644	6,205.22	-174.59	-8,081.03	8,081.96	0.00	0.00	0.00
13,800.00	89.46	269.644	6,206.16	-175.21	-8,181.02	8,181.95	0.00	0.00	0.00
13,900.00	89.46	269.644	6,207.10	-175.83	-8,281.01	8,281.95	0.00	0.00	0.00
14,000.00	89.46	269.644	6,208.03	-176.46	-8,381.01	8,381.94	0.00	0.00	0.00
14,100.00	89.46	269.644	6,208.97	-177.08	-8,481.00	8,481.94	0.00	0.00	0.00
14,200.00	89.46	269.644	6,209.91	-177.70	-8,580.99	8,581.93	0.00	0.00	0.00
14,300.00	89.46	269.644	6,210.84	-178.32	-8,680.99	8,681.93	0.00	0.00	0.00
14,400.00	89.46	269.644	6,211.78	-178.94	-8,780.98	8,781.92	0.00	0.00	0.00
14,500.00	89.46	269.644	6,212.72	-179.57	-8,880.98	8,881.92	0.00	0.00	0.00
14,600.00	89.46	269.644	6,213.65	-180.19	-8,980.97	8,981.92	0.00	0.00	0.00
14,700.00	89.46	269.644	6,214.59	-180.81	-9,080.96	9,081.91	0.00	0.00	0.00
14,800.00	89.46	269.644	6,215.53	-181.43	-9,180.96	9,181.91	0.00	0.00	0.00
14,900.00	89.46	269.644	6,216.46	-182.05	-9,280.95	9,281.90	0.00	0.00	0.00

Database:	Casper District	Local Co-ordinate Reference:	Well Hawkins 5-61-20-4033B2
Company:	Bill Barrett Corp.	TVD Reference:	GL 4664' & KB 20' @ 4684.00ft
Project:	Weld County, CO NAD 83	MD Reference:	GL 4664' & KB 20' @ 4684.00ft
Site:	Hawkins 5-61-20_19 SW21 Pad	North Reference:	True
Well:	Hawkins 5-61-20-4033B2	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan 1		

Planned Survey									
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)
15,000.00	89.46	269.644	6,217.40	-182.68	-9,380.94	9,381.90	0.00	0.00	0.00
15,100.00	89.46	269.644	6,218.34	-183.30	-9,480.94	9,481.89	0.00	0.00	0.00
15,200.00	89.46	269.644	6,219.27	-183.92	-9,580.93	9,581.89	0.00	0.00	0.00
15,300.00	89.46	269.644	6,220.21	-184.54	-9,680.93	9,681.88	0.00	0.00	0.00
15,400.00	89.46	269.644	6,221.15	-185.16	-9,780.92	9,781.88	0.00	0.00	0.00
15,500.00	89.46	269.644	6,222.09	-185.79	-9,880.91	9,881.88	0.00	0.00	0.00
15,600.00	89.46	269.644	6,223.02	-186.41	-9,980.91	9,981.87	0.00	0.00	0.00
15,700.00	89.46	269.644	6,223.96	-187.03	-10,080.90	10,081.87	0.00	0.00	0.00
15,800.00	89.46	269.644	6,224.90	-187.65	-10,180.89	10,181.86	0.00	0.00	0.00
15,900.00	89.46	269.644	6,225.83	-188.27	-10,280.89	10,281.86	0.00	0.00	0.00
16,000.00	89.46	269.644	6,226.77	-188.89	-10,380.88	10,381.85	0.00	0.00	0.00
16,024.58	89.46	269.644	6,227.00	-189.05	-10,405.46	10,406.43	0.00	0.00	0.00
TD at 16024.58									

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
- hit/miss target									
- Shape									
Hawkins 5-61-20-4033B	0.00	0.000	6,137.00	-129.30	-800.05	1,385,849.00	3,355,039.64	40° 23' 7.991 N	104° 13' 31.609 W
- plan misses target center by 0.01ft at 6418.57ft MD (6137.00 TVD, -129.31 N, -800.05 E)									
- Point									
Hawkins 5-61-20-4033B	0.00	0.000	6,227.00	-189.05	-10,405.46	1,385,650.89	3,345,436.11	40° 23' 7.379 N	104° 15' 35.741 W
- plan hits target center									
- Point									

Plan Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
800.00	800.00	0.00	0.00	Start Build 2.00
1,023.97	1,023.74	-3.15	-8.16	Start 4265.55 hold at 1023.97 MD
5,289.52	5,276.26	-123.21	-318.91	Start Drop -2.00
5,513.49	5,500.00	-126.36	-327.08	Start 159.56 hold at 5513.48 MD
5,673.05	5,659.56	-126.36	-327.08	Start DLS 12.00 TFO 269.64
6,418.57	6,137.00	-129.31	-800.06	Start 9606.01 hold at 6418.57 MD
16,024.58	6,227.00	-189.05	-10,405.46	TD at 16024.58