

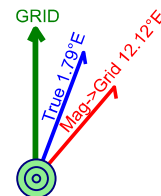


**Job Number:** 12xxx  
**Company:** Black Hills Plateau Productin Co.  
**Lease/Well:** Homer Deep Unit 9-11BH  
**Location:** Garfield County, CO  
**Rig Name:**  
**State/Country:** CCO/ Garfield  
**Country:** USA  
**API Number:**


**Elevation (To MSL):** 5521.00 ft  
**RKB:** 0.00 ft  
**Projection System:** US State Plane 1927 (Exact solution)  
**Projection Group:** Colorado Central 502  
**Projection Datum:** CLARKE 1866  
**Magnetic Declination:** 10.34  
**Grid Convergence:** -1.78993 W  
**Date:** Tuesday, August 21, 2012

Calculated by HawkEye Software  
 Minimum Curvature Method  
 Vertical Section Plane 148.54°

**Northing (US ft):** 575921.25 **Easting (US ft):** 1197630.63  
**Latitude:** 39°22'48.9768" N **Longitude:** -108°20'20.3337" W  
**Well Location:** 293.32 FNL, 391.81 FWL, Section 9, T8S, R98W, Meridian 06, Garfield County, CO  
**Direction Reference:** Grid North



Measured Depth (Ft)	INC Deg	AZM Deg	TVD (Ft)	EW (Ft)	NS (Ft)	VS (Ft)	Closure (Ft)	Closure Dir Deg	DLS %/100Ft
<b>Surface</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Nudge - Build @ 2.00°/ 100 Ft</b>									
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00
530.00	0.60	180.00	530.00	0.00	-0.16	0.13	0.16	180.00	2.00
560.00	1.20	180.00	560.00	0.00	-0.63	0.54	0.63	180.00	2.00
590.00	1.80	180.00	589.99	0.00	-1.41	1.21	1.41	180.00	2.00
620.00	2.40	180.00	619.96	0.00	-2.51	2.14	2.51	180.00	2.00
650.00	3.00	180.00	649.93	0.00	-3.93	3.35	3.93	180.00	2.00
680.00	3.60	180.00	679.88	0.00	-5.65	4.82	5.65	180.00	2.00
710.00	4.20	180.00	709.81	0.00	-7.69	6.56	7.69	180.00	2.00
740.00	4.80	180.00	739.72	0.00	-10.05	8.57	10.05	180.00	2.00
<b>Begin Hold @ 5.00°,180.00° Azm</b>									
750.01	5.00	180.00	749.69	0.00	-10.90	9.30	10.90	180.00	2.00
<b>Begin Drop @ -2.00°/ 100 Ft</b>									
1250.01	5.00	180.00	1247.79	0.00	-54.48	46.47	54.48	180.00	0.00
1280.01	4.40	180.00	1277.69	0.00	-56.94	48.57	56.94	180.00	2.00
1310.01	3.80	180.00	1307.61	0.00	-59.08	50.40	59.08	180.00	2.00
1340.01	3.20	180.00	1337.56	0.00	-60.91	51.96	60.91	180.00	2.00
1370.01	2.60	180.00	1367.52	0.00	-62.43	53.25	62.43	180.00	2.00
1400.01	2.00	180.00	1397.49	0.00	-63.64	54.28	63.64	180.00	2.00
1430.01	1.40	180.00	1427.48	0.00	-64.53	55.04	64.53	180.00	2.00
1460.01	0.80	180.00	1457.47	0.00	-65.10	55.53	65.10	180.00	2.00
1490.01	0.20	180.00	1487.47	0.00	-65.36	55.75	65.36	180.00	2.00
<b>Hold Vertical</b>									
1500.01	0.00	0.00	1497.47	0.00	-65.38	55.77	65.38	180.00	2.00
2000.01	0.00	0.00	1997.47	0.00	-65.38	55.77	65.38	180.00	0.00
2500.01	0.00	0.00	2497.47	0.00	-65.38	55.77	65.38	180.00	0.00
3000.01	0.00	0.00	2997.47	0.00	-65.38	55.77	65.38	180.00	0.00
3500.01	0.00	0.00	3497.47	0.00	-65.38	55.77	65.38	180.00	0.00
4000.01	0.00	0.00	3997.47	0.00	-65.38	55.76	65.38	180.00	0.00
4500.01	0.00	0.00	4497.47	0.00	-65.38	55.76	65.38	180.00	0.00
<b>Casing 9 5/8"</b>									
4750.00	0.00	0.00	4747.46	0.00	-65.37	55.76	65.37	180.00	0.00
5000.01	0.00	0.00	4997.47	0.00	-65.37	55.76	65.37	180.00	0.00
5500.01	0.00	0.00	5497.47	0.00	-65.37	55.76	65.37	180.00	0.00
6000.01	0.00	0.00	5997.47	0.00	-65.37	55.76	65.37	180.00	0.00
<b>KOP - Begin Build @ 8.00°/ 100 Ft</b>									
6312.00	0.00	0.00	6309.46	0.00	-65.37	55.76	65.37	180.00	0.00
6342.00	2.40	210.00	6339.45	-0.31	-65.92	56.06	65.92	180.27	8.00
6372.00	4.80	210.00	6369.39	-1.26	-67.55	56.96	67.56	181.07	8.00
6402.00	7.20	210.00	6399.23	-2.82	-70.26	58.46	70.32	182.30	8.00
6432.00	9.60	210.00	6428.90	-5.01	-74.06	60.55	74.23	183.87	8.00

Measured Depth (Ft)	INC Deg	AZM Deg	TVD (Ft)	EW (Ft)	NS (Ft)	VS (Ft)	Closure (Ft)	Closure Dir Deg	DLS %/100Ft
6462.00	12.00	210.00	6458.37	-7.83	-78.93	63.24	79.31	185.66	8.00
6492.00	14.40	210.00	6487.57	-11.25	-84.86	66.51	85.60	187.55	8.00
6522.00	16.80	210.00	6516.47	-15.28	-91.84	70.36	93.11	189.45	8.00
6552.00	19.20	210.00	6545.00	-19.92	-99.87	74.79	101.84	191.28	8.00
<b>Build and Turn @ 8.0°/100 Ft</b>									
6570.75	20.70	210.00	6562.62	-23.12	-105.41	77.85	107.92	192.37	8.00
6600.75	21.85	204.18	6590.58	-28.06	-115.10	83.53	118.47	193.70	8.00
6630.75	23.18	198.96	6618.30	-32.26	-125.77	90.45	129.84	194.39	8.00
6660.75	24.66	194.30	6645.72	-35.73	-137.42	98.57	141.99	194.57	8.00
6690.75	26.27	190.16	6672.81	-38.44	-150.02	107.90	154.87	194.37	8.00
6720.75	27.99	186.48	6699.51	-40.41	-163.55	118.42	168.47	193.88	8.00
6750.75	29.79	183.21	6725.78	-41.62	-177.99	130.10	182.79	193.16	8.00
6780.75	31.67	180.28	6751.56	-42.08	-193.31	142.93	197.83	192.28	8.00
6810.75	33.60	177.65	6776.83	-41.77	-209.48	156.88	213.60	191.28	8.00
6840.75	35.59	175.27	6801.52	-40.71	-226.48	171.93	230.11	190.19	8.00
6870.75	37.62	173.12	6825.61	-38.90	-244.27	188.06	247.35	189.05	8.00
6900.75	39.68	171.16	6849.03	-36.33	-262.83	205.23	265.33	187.87	8.00
6930.75	41.78	169.37	6871.77	-33.01	-282.12	223.41	284.04	186.67	8.00
6960.75	43.90	167.72	6893.76	-28.96	-302.11	242.58	303.49	185.47	8.00
6990.75	46.04	166.18	6914.99	-24.16	-322.76	262.70	323.66	184.28	8.00
7020.75	48.20	164.76	6935.40	-18.65	-344.04	283.73	344.54	183.10	8.00
7050.75	50.38	163.43	6954.96	-12.41	-365.90	305.63	366.11	181.94	8.00
7080.75	52.57	162.18	6973.65	-5.47	-388.32	328.38	388.36	180.81	8.00
7110.75	54.78	161.01	6991.42	2.16	-411.25	351.92	411.26	179.70	8.00
7140.75	56.99	159.89	7008.24	10.48	-434.66	376.23	434.78	178.62	8.00
7170.75	59.22	158.83	7024.09	19.46	-458.49	401.24	458.90	177.57	8.00
7200.75	61.45	157.82	7038.94	29.09	-482.71	426.93	483.59	176.55	8.00
7230.75	63.69	156.85	7052.76	39.35	-507.28	453.24	508.80	175.56	8.00
7260.75	65.94	155.91	7065.52	50.23	-532.15	480.14	534.52	174.61	8.00
7290.75	68.19	155.01	7077.21	61.70	-557.28	507.56	560.69	173.68	8.00
7320.75	70.45	154.14	7087.81	73.75	-582.63	535.47	587.28	172.79	8.00
7350.75	72.71	153.29	7097.29	86.36	-608.15	563.81	614.25	171.92	8.00
7380.75	74.97	152.46	7105.63	99.49	-633.79	592.54	641.55	171.08	8.00
7410.75	77.24	151.65	7112.84	113.14	-659.51	621.61	669.15	170.27	8.00
7440.75	79.51	150.86	7118.88	127.27	-685.28	650.96	696.99	169.48	8.00
7470.75	81.78	150.07	7123.76	141.86	-711.03	680.54	725.04	168.72	8.00
7500.75	84.05	149.30	7127.46	156.89	-736.73	710.30	753.25	167.98	8.00
7530.75	86.33	148.53	7129.97	172.33	-762.32	740.20	781.56	167.26	8.00
7560.75	88.60	147.76	7131.30	188.14	-787.78	770.16	809.93	166.57	8.00
<b>Target - Hold @ 90.86°, 147.00° Azm      Casing 7"</b>									
7590.53	90.86	147.00	7131.44	204.20	-812.86	799.94	838.12	165.90	8.00
8090.53	90.86	147.00	7123.91	476.47	-1232.16	1299.70	1321.07	158.86	0.00
8590.53	90.86	147.00	7116.38	748.75	-1651.45	1799.46	1813.26	155.61	0.00
9090.53	90.86	147.00	7108.86	1021.02	-2070.75	2299.23	2308.79	153.75	0.00
9590.53	90.86	147.00	7101.33	1293.30	-2490.05	2798.99	2805.88	152.55	0.00
10090.53	90.86	147.00	7093.80	1565.57	-2909.34	3298.75	3303.83	151.71	0.00
10590.53	90.86	147.00	7086.28	1837.84	-3328.64	3798.52	3802.30	151.10	0.00
11090.53	90.86	147.00	7078.75	2110.12	-3747.94	4298.28	4301.12	150.62	0.00
11590.53	90.86	147.00	7071.22	2382.39	-4167.23	4798.05	4800.17	150.24	0.00
12090.53	90.86	147.00	7063.70	2654.67	-4586.53	5297.81	5299.39	149.94	0.00
12590.53	90.86	147.00	7056.17	2926.94	-5005.83	5797.57	5798.73	149.68	0.00
13090.53	90.86	147.00	7048.64	3199.22	-5425.12	6297.34	6298.17	149.47	0.00
13590.53	90.86	147.00	7041.12	3471.49	-5844.42	6797.10	6797.69	149.29	0.00
14090.53	90.86	147.00	7033.59	3743.77	-6263.72	7296.86	7297.26	149.13	0.00
14590.53	90.86	147.00	7026.06	4016.04	-6683.01	7796.63	7796.88	149.00	0.00
15090.53	90.86	147.00	7018.54	4288.32	-7102.31	8296.39	8296.54	148.88	0.00
15590.53	90.86	147.00	7011.01	4560.59	-7521.61	8796.15	8796.23	148.77	0.00

Measured Depth (Ft)	INC Deg	AZM Deg	TVD (Ft)	EW (Ft)	NS (Ft)	VS (Ft)	Closure (Ft)	Closure Dir Deg	DLS °/100Ft	
16090.53	90.86	147.00	7003.48	4832.87	-7940.91	9295.92	9295.94	148.68	0.00	
16590.53	90.86	147.00	6995.96	5105.14	-8360.20	9795.68	9795.69	148.59	0.00	
Proposed End of 9-11BH Lateral										
16919.87	90.86	147.00	6991.00	5284.48	-8636.38	10124.86	10124.86	148.54	0.00	
TARGET DATA										
Name		Shape	Latitude	Longitude	Subsea TVD (Ft)	NS (Ft)	EW (Ft)	Side A (Ft)	Side B (Ft)	Diameter (Ft)
9-11BH BHL		CYLINDER	39°21'25.2813" N	-108°19'9.6521" W	1470.00	-8636.39	5284.48	100.00	200.00	100.00
9-11BH Landing		CYLINDER	39°22'45.3335" N	-108°20'22.8645" W	1650.00	-362.21	-210.14	100.00	200.00	100.00
CASING DATA										
Size (in)		Weight (Lbs/Ft)	ID (in)	OD (in)	Top MD (Ft)		Set MD (Ft)			
9 5/8		40.00		8.84	10.63		4750.00		4780.00	
7		23.00		6.37	7.66		7590.53		7590.53	