



Job Number: 12xxx
Company: Black Hills Plateau Productin Co.
Lease/Well: Homer Deep Unit 7-23AH
Location: Garfield County, CO
Rig Name:
State/County: CO/ Garfield
Country: USA
API Number:

Elevation: 5669.00 ft **RKB:** 15.00 ft
Projection System: US State Plane 1927 (Exact solution)
Projection Group: Colorado Central 502
Projection Datum: CLARKE 1866
Mag. Declination: 10.35°
Grid Convergence: -1.80852 W
Date: Friday, October 11, 2013

Calculated by HawkEye Software
 Minimum Curvature Method
 Vertical Section Plane 158.26°
 Northing (US ft): 573220.45 Easting (US ft): 1189203.00
 Latitude: 39°22'19.6787" N Longitude: -108°22'6.5254" W
 Well Location: 1894 FSL, 2648 FWL, Section 7, T8S, R98W, Meridian 06, Garfield County, CO
 Direction Reference: Grid North



Measured Depth (Ft)	INC Deg	AZM Deg	TVD (Ft)	Subsea TVD (Ft)	EW (Ft)	NS (Ft)	VS (Ft)	Closure (Ft)	Closure Dir Deg	DLS "/100Ft
Surface										
0.00	0.00	0.00	0.00	5684.00	0.00	0.00	0.00	0.00	0.00	0.00
500.00	0.00	0.00	500.00	5184.00	0.00	0.00	0.00	0.00	0.00	0.00
Mesaverde										
859.00	0.00	0.00	859.00	4825.00	0.00	0.00	0.00	0.00	0.05	0.00
Casing 10 3/4"										
1000.00	0.00	0.00	1000.00	4684.00	0.00	0.00	0.00	0.00	0.04	0.00
1500.00	0.00	0.00	1500.00	4184.00	0.00	0.00	0.00	0.00	0.03	0.00
2000.00	0.00	0.00	2000.00	3684.00	0.00	0.00	0.00	0.00	0.02	0.00
2500.00	0.00	0.00	2500.00	3184.00	0.00	0.00	0.00	0.00	0.01	0.00
Cameo										
2859.00	0.00	0.00	2859.00	2825.00	0.00	0.00	0.00	0.00	0.01	0.00
3000.00	0.00	0.00	3000.00	2684.00	0.00	0.00	0.00	0.00	0.01	0.00
Rollins										
3214.00	0.00	0.00	3214.00	2470.00	0.00	0.01	0.00	0.01	0.01	0.00
Cozette										
3383.00	0.00	0.00	3383.00	2301.00	0.00	0.01	-0.01	0.01	0.01	0.00
3500.00	0.00	0.00	3500.00	2184.00	0.00	0.01	-0.01	0.01	0.01	0.00
Corcoran										
3589.00	0.00	0.00	3589.00	2095.00	0.00	0.01	-0.01	0.01	0.01	0.00
Mancos										
3797.00	0.00	0.00	3797.00	1887.00	0.00	0.01	-0.01	0.01	0.01	0.00
4000.00	0.00	0.00	4000.00	1684.00	0.00	0.01	-0.01	0.01	0.01	0.00
KOP-Begin Build @ 8.00°/ 100 Ft										
4179.00	0.00	0.00	4179.00	1505.00	0.00	0.01	-0.01	0.01	0.01	0.00
4239.00	4.80	215.00	4238.93	1445.07	-1.44	-2.05	1.37	2.51	215.09	8.00
Mancos A										
4264.20	6.82	215.00	4264.00	1420.00	-2.90	-4.14	2.77	5.06	215.05	8.00
4299.00	9.60	215.00	4298.44	1385.56	-5.75	-8.21	5.49	10.02	215.02	8.00
4359.00	14.40	215.00	4357.11	1326.89	-12.91	-18.42	12.33	22.49	215.01	8.00
4419.00	19.20	215.00	4414.53	1269.47	-22.85	-32.63	21.84	39.83	215.01	8.00
4479.00	24.00	215.00	4470.30	1213.70	-35.52	-50.71	33.95	61.91	215.00	8.00
4539.00	28.80	215.00	4524.03	1159.97	-50.81	-72.56	48.58	88.58	215.00	8.00
4599.00	33.60	215.00	4575.34	1108.66	-68.63	-98.01	65.62	119.66	215.00	8.00
4659.00	38.40	215.00	4623.86	1060.14	-88.86	-126.89	84.96	154.91	215.00	8.00
4719.00	43.20	215.00	4669.27	1014.73	-111.34	-159.00	106.45	194.11	215.00	8.00
Begin Hold @ 45.00°, 215.00° Azm										
4741.50	45.00	215.00	4685.43	998.57	-120.32	-171.83	115.04	209.76	215.00	8.00
MOAB										
5186.37	45.00	215.00	5000.00	684.00	-300.75	-429.51	287.56	524.33	215.00	0.00
5241.50	45.00	215.00	5038.98	645.02	-323.11	-461.44	308.94	563.32	215.00	0.00
5741.50	45.00	215.00	5392.53	291.47	-525.90	-751.05	502.84	916.87	215.00	0.00
Mancos B										
5828.43	45.00	215.00	5454.00	230.00	-561.16	-801.41	536.56	978.34	215.00	0.00
6241.50	45.00	215.00	5746.09	-62.09	-728.69	-1040.67	696.75	1270.42	215.00	0.00

Measured Depth (Ft)	INC Deg	AZM Deg	TVD (Ft)	Subsea TVD (Ft)	EW (Ft)	NS (Ft)	VS (Ft)	Closure (Ft)	Closure Dir Deg	DLS °/100Ft
6741.50	45.00	215.00	6099.64	-415.64	-931.48	-1330.28	890.65	1623.98	215.00	0.00
⌋ Casing 7 5/8"										
7190.31	45.00	215.00	6417.00	-733.00	-1113.51	-1590.24	1064.70	1941.33	215.00	0.00
7241.50	45.00	215.00	6453.19	-769.19	-1134.27	-1619.90	1084.55	1977.53	215.00	0.00
Build and Turn @ 8.00°/100 Ft										
7386.50	45.00	215.00	6555.73	-871.73	-1193.08	-1703.88	1140.78	2080.06	215.00	0.00
■ Niobrara										
7402.49	45.39	213.28	6567.00	-883.00	-1199.44	-1713.27	1147.15	2091.40	215.00	8.00
7446.50	46.59	208.68	6597.58	-913.58	-1215.72	-1740.40	1166.32	2122.96	214.94	8.00
7506.50	48.50	202.71	6638.10	-954.10	-1234.86	-1780.27	1196.26	2166.62	214.75	8.00
7566.50	50.71	197.11	6677.00	-993.00	-1250.37	-1823.21	1230.40	2210.78	214.44	8.00
7626.50	53.16	191.87	6714.01	-1030.01	-1262.15	-1868.93	1268.50	2255.20	214.03	8.00
7686.50	55.84	186.97	6748.86	-1064.86	-1270.11	-1917.09	1310.30	2299.65	213.53	8.00
7746.50	58.69	182.38	6781.31	-1097.31	-1274.19	-1967.37	1355.49	2343.95	212.93	8.00
7806.50	61.70	178.07	6811.15	-1127.15	-1274.36	-2019.41	1403.76	2387.89	212.25	8.00
7866.50	64.83	174.00	6838.14	-1154.14	-1270.63	-2072.84	1454.77	2431.29	211.51	8.00
7926.50	68.07	170.14	6862.12	-1178.12	-1263.02	-2127.30	1508.17	2473.98	210.70	8.00
7986.50	71.40	166.45	6882.90	-1198.90	-1251.58	-2182.39	1563.58	2515.80	209.83	8.00
8046.50	74.80	162.90	6900.34	-1216.34	-1236.40	-2237.73	1620.62	2556.58	208.92	8.00
8106.50	78.25	159.47	6914.33	-1230.33	-1217.57	-2292.94	1678.87	2596.16	207.97	8.00
8166.50	81.74	156.12	6924.75	-1240.75	-1195.24	-2347.63	1737.94	2634.38	206.98	8.00
8226.50	85.26	152.83	6931.55	-1247.55	-1169.56	-2401.40	1797.40	2671.07	205.97	8.00
8286.50	88.79	149.58	6934.67	-1250.67	-1140.70	-2453.90	1856.85	2706.07	204.93	8.00
Target - Hold @ 91.60°, 147.00° Azm										
8334.19	91.60	147.00	6934.51	-1250.51	-1115.64	-2494.46	1903.81	2732.58	204.10	8.00
8834.19	91.60	147.00	6920.55	-1236.55	-843.43	-2913.63	2394.00	3033.25	196.14	0.00
9334.19	91.60	147.00	6906.58	-1222.58	-571.22	-3332.80	2884.18	3381.40	189.73	0.00
9834.19	91.60	147.00	6892.62	-1208.62	-299.00	-3751.98	3374.37	3763.87	184.56	0.00
10334.19	91.60	147.00	6878.66	-1194.66	-26.79	-4171.15	3864.55	4171.23	180.37	0.00
10834.19	91.60	147.00	6864.70	-1180.70	245.42	-4590.32	4354.73	4596.88	176.94	0.00
11334.19	91.60	147.00	6850.74	-1166.74	517.64	-5009.49	4844.92	5036.17	174.10	0.00
11834.19	91.60	147.00	6836.78	-1152.78	789.85	-5428.66	5335.10	5485.82	171.72	0.00
12334.19	91.60	147.00	6822.82	-1138.82	1062.06	-5847.84	5825.29	5943.50	169.71	0.00
12834.19	91.60	147.00	6808.86	-1124.86	1334.28	-6267.01	6315.47	6407.47	167.98	0.00
13334.19	91.60	147.00	6794.90	-1110.90	1606.49	-6686.18	6805.66	6876.47	166.49	0.00
13834.19	91.60	147.00	6780.94	-1096.94	1878.70	-7105.35	7295.84	7349.53	165.19	0.00
14334.19	91.60	147.00	6766.98	-1082.98	2150.92	-7524.52	7786.02	7825.91	164.05	0.00
14834.19	91.60	147.00	6753.02	-1069.02	2423.13	-7943.69	8276.21	8305.05	163.04	0.00
15334.19	91.60	147.00	6739.05	-1055.05	2695.34	-8362.87	8766.39	8786.49	162.14	0.00
15834.19	91.60	147.00	6725.09	-1041.09	2967.56	-8782.04	9256.58	9269.88	161.33	0.00
16334.19	91.60	147.00	6711.13	-1027.13	3239.77	-9201.21	9746.76	9754.92	160.60	0.00
16834.19	91.60	147.00	6697.17	-1013.17	3511.98	-9620.38	10236.95	10241.38	159.95	0.00
17334.19	91.60	147.00	6683.21	-999.21	3784.20	-10039.55	10727.13	10729.06	159.35	0.00
17834.19	91.60	147.00	6669.25	-985.25	4056.41	-10458.73	11217.32	11217.82	158.80	0.00
18334.19	91.60	147.00	6655.29	-971.29	4328.62	-10877.90	11707.50	11707.50	158.30	0.00
Proposed End of 7-23AH Lateral										
18375.03	91.60	147.00	6654.15	-970.15	4350.86	-10912.14	11747.54	11747.54	158.26	0.00
TARGET DATA										
Name	Shape	Latitude	Longitude	Subsea (Ft)	TVD (Ft)	NS (Ft)	EW (Ft)	Side A (Ft)	Side B (Ft)	Diameter (Ft)
7-23AH Landing	CYLINDER	39°21'54.1634"	-108°22'20.9504"	-946.0	-6630.0	-2544.4	-1213.8	-	-	100.0
7-23AH BHL	CYLINDER	39°20'33.2264"	-108°21'6.7907"	-970.0	-6654.0	-10912.3	4350.5	-	-	100.0

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