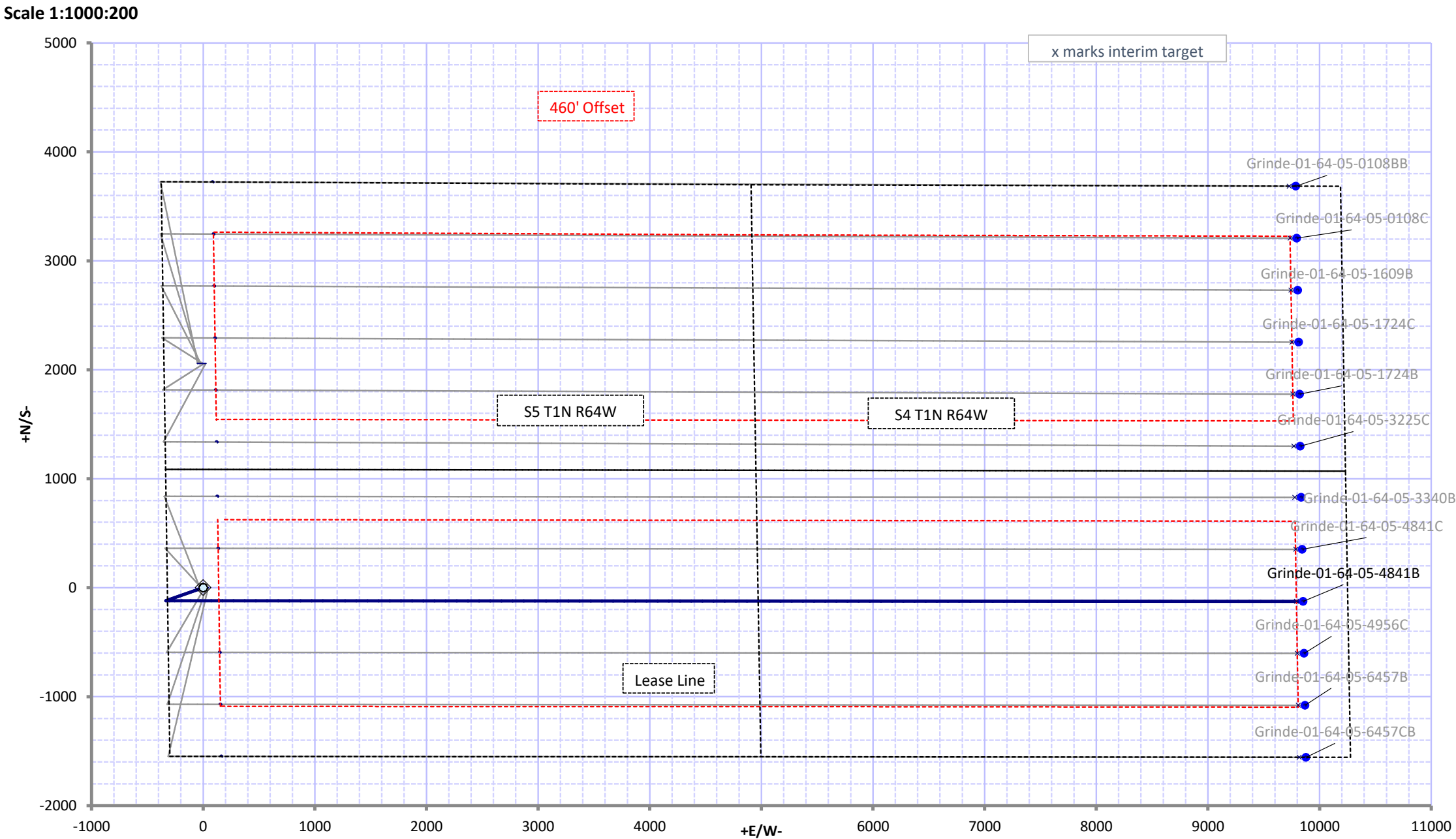
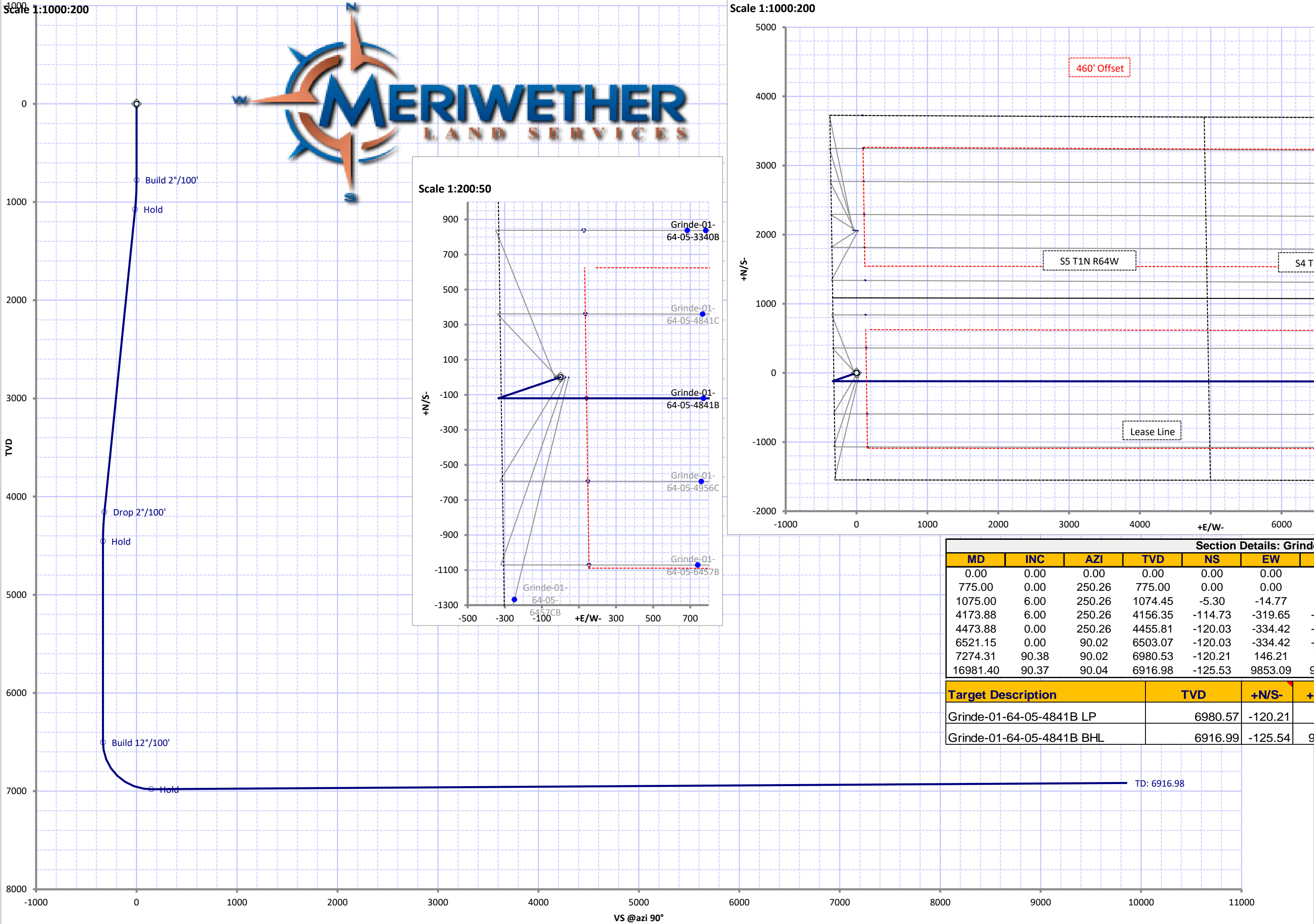
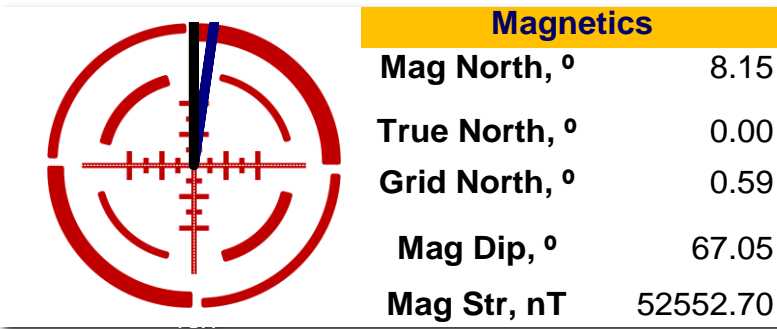


Well Grinde-01-64-05-4841B		Operating Company Bill Barrett Corporation			Rig TBD, est. KB of 20'	
Magnetics		Location			Other	
Curr. Datum BGGM2016 Mag Date 14-Mar-2017 Field Str, nT 52552.70		Decl., ° 8.15 Dip Angle, ° 67.05 Convergence, ° 0.5924333		Northing, ft 1,272,404.66 Easting, ft 3,256,573.54 Elevation, ft 5057.00		Meriwether Land Services, LLC
		Latitude 40.077500 Longitude 104.583110 TVD Ref GL 5037' + KB 20'		Map System St. Plane Map Datum NAD83 Map Zone 0501 - Colorado North		North Reference True North Vert. Sect, ° 90.00 December 12, 2017



Section Details: Grinde-01-64-05-4841B										
MD	INC	AZI	TVD	NS	EW	VS90	BR	TR	DLS	Comments
0.00	0.00	0.00	0.00	0.00	0.00	0.00				TIE-IN
775.00	0.00	250.26	775.00	0.00	0.00	0.00	0.00	-146.33	0.00	Build 2°/100'
1075.00	6.00	250.26	1074.45	-5.30	-14.77	-14.77	2.00	0.00	2.00	Hold
4173.88	6.00	250.26	4156.35	-114.73	-319.65	-319.65	0.00	0.00	0.00	Drop 2°/100'
4473.88	0.00	250.26	4455.81	-120.03	-334.42	-334.42	-2.00	0.00	2.00	Hold
6521.15	0.00	90.02	6503.07	-120.03	-334.42	-334.42	0.00	-11.95	0.00	Build 12°/100'
7274.31	90.38	90.02	6980.53	-120.21	146.21	146.21	12.00	0.00	12.00	Hold
16981.40	90.37	90.04	6916.98	-125.53	9853.09	9853.09	0.00	0.00	0.00	TD: 6916.98
Target Description			TVD	+N/S-	+E/W-	Latitude	Longitude	Northing	Easting	
Grinde-01-64-05-4841B LP			6980.57	-120.21	139.92	40.07717	104.58261	1272285.90	3256714.70	
Grinde-01-64-05-4841B BHL			6916.99	-125.54	9853.05	40.07715	104.54790	1272381.00	3266427.36	





Survey Report: Grinde-01-64-05-4841B

Operator	Bill Barrett Corporation	Northing	1272404.655	Date	12-Dec-17
Dir. Co.	Meriwether Land Services, LLC	Easting	3256573.544	System	2 - St. Plane
Well Name	Grinde-01-64-05-4841B	Elevation	5037.00	Datum	1983 - NAD83
Location	Weld Cty, CO	Latitude	40.077500	Zone	0501 - Colorado North
Rig	TBD, est. KB of 20'	Longitude	104.583110	Scale Fac.	0.999961
Job		Units	Feet	Converg.	0.592433

MD	INC	AZI	TVD	+N/S-	+E/W-	VS@90°	BR	TR	DLS
0	0	0	0	0	0	0	0	0	0
0: TIE-IN									
100	0	360	100	0	0	0	0	0	0
200	0	360	200	0	0	0	0	0	0
300	0	360	300	0	0	0	0	0	0
400	0	360	400	0	0	0	0	0	0
500	0	360	500	0	0	0	0	0	0
600	0	360	600	0	0	0	0	0	0
700	0	360	700	0	0	0	0	0	0
775	0	250.26	775	0	0	0	0	-146.33	0
775: Build 2°/100'									
800	0.5	250.26	800	-0.04	-0.1	-0.1	2	0	2
900	2.5	250.26	899.96	-0.92	-2.57	-2.57	2	0	2
1000	4.5	250.26	999.77	-2.98	-8.31	-8.31	2	0	2
1075	6	250.26	1074.45	-5.3	-14.77	-14.77	2	0	2
1075: Hold									
1100	6	250.26	1099.32	-6.18	-17.23	-17.23	0	0	0
1200	6	250.26	1198.77	-9.71	-27.07	-27.07	0	0	0
1300	6	250.26	1298.22	-13.25	-36.91	-36.91	0	0	0
1400	6	250.26	1397.67	-16.78	-46.75	-46.75	0	0	0
1500	6	250.26	1497.12	-20.31	-56.58	-56.58	0	0	0
1600	6	250.26	1596.58	-23.84	-66.42	-66.42	0	0	0
1700	6	250.26	1696.03	-27.37	-76.26	-76.26	0	0	0
1800	6	250.26	1795.48	-30.9	-86.1	-86.1	0	0	0
1900	6	250.26	1894.93	-34.43	-95.94	-95.94	0	0	0
2000	6	250.26	1994.38	-37.96	-105.78	-105.78	0	0	0
2100	6	250.26	2093.84	-41.5	-115.61	-115.61	0	0	0
2200	6	250.26	2193.29	-45.03	-125.45	-125.45	0	0	0
2300	6	250.26	2292.74	-48.56	-135.29	-135.29	0	0	0
2400	6	250.26	2392.19	-52.09	-145.13	-145.13	0	0	0
2500	6	250.26	2491.65	-55.62	-154.97	-154.97	0	0	0
2600	6	250.26	2591.1	-59.15	-164.81	-164.81	0	0	0
2700	6	250.26	2690.55	-62.68	-174.65	-174.65	0	0	0
2800	6	250.26	2790	-66.21	-184.48	-184.48	0	0	0
2900	6	250.26	2889.45	-69.75	-194.32	-194.32	0	0	0
3000	6	250.26	2988.91	-73.28	-204.16	-204.16	0	0	0
3100	6	250.26	3088.36	-76.81	-214	-214	0	0	0
3200	6	250.26	3187.81	-80.34	-223.84	-223.84	0	0	0
3300	6	250.26	3287.26	-83.87	-233.68	-233.68	0	0	0
3400	6	250.26	3386.72	-87.4	-243.51	-243.51	0	0	0
3500	6	250.26	3486.17	-90.93	-253.35	-253.35	0	0	0
3600	6	250.26	3585.62	-94.46	-263.19	-263.19	0	0	0
3700	6	250.26	3685.07	-97.99	-273.03	-273.03	0	0	0
3800	6	250.26	3784.52	-101.53	-282.87	-282.87	0	0	0



Survey Report: Grinde-01-64-05-4841B

Operator	Bill Barrett Corporation	North	1272404.655	Date	12-Dec-17
Dir. Co.	Meriwether Land Services, LLC	Easting	3256573.544	System	2 - St. Plane
Well Name	Grinde-01-64-05-4841B	Elevation	5037.00	Datum	1983 - NAD83
Location	Weld Cty, CO	Latitude	40.077500	Zone	0501 - Colorado North
Rig	TBD, est. KB of 20'	Longitude	104.583110	Scale Fac.	0.999961
Job		Units	Feet	Converg.	0.592433

MD	INC	AZI	TVD	+N/S-	+E/W-	VS@90°	BR	TR	DLS
3900	6	250.26	3883.98	-105.06	-292.71	-292.71	0	0	0
4000	6	250.26	3983.43	-108.59	-302.54	-302.54	0	0	0
4100	6	250.26	4082.88	-112.12	-312.38	-312.38	0	0	0
4173.88	6	250.26	4156.35	-114.73	-319.65	-319.65	0	0	0
4173.88: Drop 2°/100'									
4200	5.48	250.26	4182.34	-115.61	-322.11	-322.11	-2	0	2
4300	3.48	250.26	4282.03	-118.25	-329.46	-329.46	-2	0	2
4400	1.48	250.26	4381.94	-119.71	-333.53	-333.53	-2	0	2
4473.88	0	250.26	4455.81	-120.03	-334.42	-334.42	-2	0	2
4473.88: Hold									
4500	0	250.26	4481.93	-120.03	-334.42	-334.42	0	0	0
4600	0	250.26	4581.93	-120.03	-334.42	-334.42	0	0	0
4700	0	250.26	4681.93	-120.03	-334.42	-334.42	0	0	0
4800	0	250.26	4781.93	-120.03	-334.42	-334.42	0	0	0
4900	0	250.26	4881.93	-120.03	-334.42	-334.42	0	0	0
5000	0	250.26	4981.93	-120.03	-334.42	-334.42	0	0	0
5100	0	250.26	5081.93	-120.03	-334.42	-334.42	0	0	0
5200	0	250.26	5181.93	-120.03	-334.42	-334.42	0	0	0
5300	0	250.26	5281.93	-120.03	-334.42	-334.42	0	0	0
5400	0	250.26	5381.93	-120.03	-334.42	-334.42	0	0	0
5500	0	250.26	5481.93	-120.03	-334.42	-334.42	0	0	0
5600	0	250.26	5581.93	-120.03	-334.42	-334.42	0	0	0
5700	0	250.26	5681.93	-120.03	-334.42	-334.42	0	0	0
5800	0	250.26	5781.93	-120.03	-334.42	-334.42	0	0	0
5900	0	250.26	5881.93	-120.03	-334.42	-334.42	0	0	0
6000	0	250.26	5981.93	-120.03	-334.42	-334.42	0	0	0
6100	0	250.26	6081.93	-120.03	-334.42	-334.42	0	0	0
6200	0	250.26	6181.93	-120.03	-334.42	-334.42	0	0	0
6300	0	250.26	6281.93	-120.03	-334.42	-334.42	0	0	0
6400	0	218.09	6381.93	-120.03	-334.42	-334.42	0	-32.17	0
6500	0	92.55	6481.93	-120.03	-334.42	-334.42	0	-125.54	0
6521.15	0	90.02	6503.07	-120.03	-334.42	-334.42	0	-11.95	0
6521.15: Build 12°/100'									
6600	9.46	90.02	6581.57	-120.03	-327.93	-327.93	12	0	12
6700	21.46	90.02	6677.77	-120.04	-301.32	-301.32	12	0	12
6800	33.46	90.02	6766.34	-120.06	-255.28	-255.28	12	0	12
6900	45.46	90.02	6843.41	-120.08	-191.84	-191.84	12	0	12
7000	57.46	90.02	6905.6	-120.11	-113.77	-113.77	12	0	12
7100	69.46	90.02	6950.19	-120.15	-24.46	-24.46	12	0	12
7200	81.46	90.02	6975.25	-120.18	72.16	72.16	12	0	12
7274.31	90.38	90.02	6980.53	-120.21	146.21	146.21	12	0	12
7274.31: Hold									
7300	90.38	90.02	6980.36	-120.22	171.89	171.89	0	0	0
7400	90.38	90.02	6979.7	-120.26	271.89	271.89	0	0	0



Survey Report: Grinde-01-64-05-4841B

Operator	Bill Barrett Corporation	Northing	1272404.655	Date	12-Dec-17
Dir. Co.	Meriwether Land Services, LLC	Easting	3256573.544	System	2 - St. Plane
Well Name	Grinde-01-64-05-4841B	Elevation	5037.00	Datum	1983 - NAD83
Location	Weld Cty, CO	Latitude	40.077500	Zone	0501 - Colorado North
Rig	TBD, est. KB of 20'	Longitude	104.583110	Scale Fac.	0.999961
Job		Units	Feet	Converg.	0.592433

MD	INC	AZI	TVD	+N/S-	+E/W-	VS@90°	BR	TR	DLS
7500	90.38	90.02	6979.03	-120.29	371.89	371.89	0	0	0
7600	90.38	90.02	6978.37	-120.33	471.89	471.89	0	0	0
7700	90.38	90.02	6977.71	-120.37	571.88	571.88	0	0	0
7800	90.38	90.02	6977.05	-120.41	671.88	671.88	0	0	0
7900	90.38	90.02	6976.38	-120.45	771.88	771.88	0	0	0
8000	90.38	90.02	6975.72	-120.49	871.88	871.88	0	0	0
8100	90.38	90.02	6975.06	-120.53	971.88	971.88	0	0	0
8200	90.38	90.02	6974.4	-120.57	1071.87	1071.87	0	0	0
8300	90.38	90.02	6973.74	-120.61	1171.87	1171.87	0	0	0
8400	90.38	90.02	6973.08	-120.65	1271.87	1271.87	0	0	0
8500	90.38	90.02	6972.41	-120.69	1371.87	1371.87	0	0	0
8600	90.38	90.02	6971.75	-120.73	1471.86	1471.86	0	0	0
8700	90.38	90.02	6971.09	-120.77	1571.86	1571.86	0	0	0
8800	90.38	90.02	6970.43	-120.82	1671.86	1671.86	0	0	0
8900	90.38	90.02	6969.77	-120.86	1771.86	1771.86	0	0	0
9000	90.38	90.02	6969.11	-120.9	1871.86	1871.86	0	0	0
9100	90.38	90.03	6968.45	-120.95	1971.85	1971.85	0	0	0
9200	90.38	90.03	6967.79	-120.99	2071.85	2071.85	0	0	0
9300	90.38	90.03	6967.13	-121.03	2171.85	2171.85	0	0	0
9400	90.38	90.03	6966.47	-121.08	2271.85	2271.85	0	0	0
9500	90.38	90.03	6965.81	-121.12	2371.85	2371.85	0	0	0
9600	90.38	90.03	6965.15	-121.17	2471.84	2471.84	0	0	0
9700	90.38	90.03	6964.49	-121.21	2571.84	2571.84	0	0	0
9800	90.38	90.03	6963.84	-121.26	2671.84	2671.84	0	0	0
9900	90.38	90.03	6963.18	-121.31	2771.84	2771.84	0	0	0
10000	90.38	90.03	6962.52	-121.35	2871.83	2871.83	0	0	0
10100	90.38	90.03	6961.86	-121.4	2971.83	2971.83	0	0	0
10200	90.38	90.03	6961.2	-121.45	3071.83	3071.83	0	0	0
10300	90.38	90.03	6960.54	-121.5	3171.83	3171.83	0	0	0
10400	90.38	90.03	6959.89	-121.55	3271.83	3271.83	0	0	0
10500	90.38	90.03	6959.23	-121.59	3371.82	3371.82	0	0	0
10600	90.38	90.03	6958.57	-121.64	3471.82	3471.82	0	0	0
10700	90.38	90.03	6957.91	-121.69	3571.82	3571.82	0	0	0
10800	90.38	90.03	6957.26	-121.74	3671.82	3671.82	0	0	0
10900	90.38	90.03	6956.6	-121.79	3771.82	3771.82	0	0	0
11000	90.38	90.03	6955.94	-121.84	3871.81	3871.81	0	0	0
11100	90.38	90.03	6955.29	-121.89	3971.81	3971.81	0	0	0
11200	90.38	90.03	6954.63	-121.94	4071.81	4071.81	0	0	0
11300	90.38	90.03	6953.98	-122	4171.81	4171.81	0	0	0
11400	90.38	90.03	6953.32	-122.05	4271.8	4271.8	0	0	0
11500	90.38	90.03	6952.66	-122.1	4371.8	4371.8	0	0	0
11600	90.38	90.03	6952.01	-122.15	4471.8	4471.8	0	0	0
11700	90.38	90.03	6951.35	-122.21	4571.8	4571.8	0	0	0
11800	90.38	90.03	6950.7	-122.26	4671.8	4671.8	0	0	0



Survey Report: Grinde-01-64-05-4841B

Operator	Bill Barrett Corporation	Northing	1272404.655	Date	12-Dec-17
Dir. Co.	Meriwether Land Services, LLC	Easting	3256573.544	System	2 - St. Plane
Well Name	Grinde-01-64-05-4841B	Elevation	5037.00	Datum	1983 - NAD83
Location	Weld Cty, CO	Latitude	40.077500	Zone	0501 - Colorado North
Rig	TBD, est. KB of 20'	Longitude	104.583110	Scale Fac.	0.999961
Job		Units	Feet	Converg.	0.592433

MD	INC	AZI	TVD	+N/S-	+E/W-	VS@90°	BR	TR	DLS
11900	90.38	90.03	6950.04	-122.31	4771.79	4771.79	0	0	0
12000	90.38	90.03	6949.39	-122.37	4871.79	4871.79	0	0	0
12100	90.38	90.03	6948.73	-122.42	4971.79	4971.79	0	0	0
12200	90.37	90.03	6948.08	-122.48	5071.79	5071.79	0	0	0
12300	90.37	90.03	6947.42	-122.53	5171.78	5171.78	0	0	0
12400	90.37	90.03	6946.77	-122.59	5271.78	5271.78	0	0	0
12500	90.37	90.03	6946.11	-122.64	5371.78	5371.78	0	0	0
12600	90.37	90.03	6945.46	-122.7	5471.78	5471.78	0	0	0
12700	90.37	90.03	6944.81	-122.76	5571.78	5571.78	0	0	0
12800	90.37	90.03	6944.15	-122.81	5671.77	5671.77	0	0	0
12900	90.37	90.03	6943.5	-122.87	5771.77	5771.77	0	0	0
13000	90.37	90.03	6942.85	-122.93	5871.77	5871.77	0	0	0
13100	90.37	90.03	6942.19	-122.99	5971.77	5971.77	0	0	0
13200	90.37	90.03	6941.54	-123.05	6071.77	6071.77	0	0	0
13300	90.37	90.03	6940.89	-123.11	6171.76	6171.76	0	0	0
13400	90.37	90.03	6940.24	-123.16	6271.76	6271.76	0	0	0
13500	90.37	90.03	6939.58	-123.22	6371.76	6371.76	0	0	0
13600	90.37	90.03	6938.93	-123.28	6471.76	6471.76	0	0	0
13700	90.37	90.03	6938.28	-123.34	6571.75	6571.75	0	0	0
13800	90.37	90.03	6937.63	-123.41	6671.75	6671.75	0	0	0
13900	90.37	90.04	6936.98	-123.47	6771.75	6771.75	0	0	0
14000	90.37	90.04	6936.32	-123.53	6871.75	6871.75	0	0	0
14100	90.37	90.04	6935.67	-123.59	6971.75	6971.75	0	0	0
14200	90.37	90.04	6935.02	-123.65	7071.74	7071.74	0	0	0
14300	90.37	90.04	6934.37	-123.71	7171.74	7171.74	0	0	0
14400	90.37	90.04	6933.72	-123.78	7271.74	7271.74	0	0	0
14500	90.37	90.04	6933.07	-123.84	7371.74	7371.74	0	0	0
14600	90.37	90.04	6932.42	-123.9	7471.74	7471.74	0	0	0
14700	90.37	90.04	6931.77	-123.97	7571.73	7571.73	0	0	0
14800	90.37	90.04	6931.12	-124.03	7671.73	7671.73	0	0	0
14900	90.37	90.04	6930.47	-124.1	7771.73	7771.73	0	0	0
15000	90.37	90.04	6929.82	-124.16	7871.73	7871.73	0	0	0
15100	90.37	90.04	6929.17	-124.23	7971.73	7971.73	0	0	0
15200	90.37	90.04	6928.52	-124.29	8071.72	8071.72	0	0	0
15300	90.37	90.04	6927.87	-124.36	8171.72	8171.72	0	0	0
15400	90.37	90.04	6927.22	-124.43	8271.72	8271.72	0	0	0
15500	90.37	90.04	6926.57	-124.49	8371.72	8371.72	0	0	0
15600	90.37	90.04	6925.92	-124.56	8471.71	8471.71	0	0	0
15700	90.37	90.04	6925.28	-124.63	8571.71	8571.71	0	0	0
15800	90.37	90.04	6924.63	-124.7	8671.71	8671.71	0	0	0
15900	90.37	90.04	6923.98	-124.77	8771.71	8771.71	0	0	0
16000	90.37	90.04	6923.33	-124.83	8871.71	8871.71	0	0	0
16100	90.37	90.04	6922.68	-124.9	8971.7	8971.7	0	0	0
16200	90.37	90.04	6922.04	-124.97	9071.7	9071.7	0	0	0



Survey Report: Grinde-01-64-05-4841B

Operator	Bill Barrett Corporation	Northing	1272404.655	Date	12-Dec-17
Dir. Co.	Meriwether Land Services, LLC	Easting	3256573.544	System	2 - St. Plane
Well Name	Grinde-01-64-05-4841B	Elevation	5037.00	Datum	1983 - NAD83
Location	Weld Cty, CO	Latitude	40.077500	Zone	0501 - Colorado North
Rig	TBD, est. KB of 20'	Longitude	104.583110	Scale Fac.	0.999961
Job		Units	Feet	Converg.	0.592433

MD	INC	AZI	TVD	+N/S-	+E/W-	VS@90°	BR	TR	DLS
16300	90.37	90.04	6921.39	-125.04	9171.7	9171.7	0	0	0
16400	90.37	90.04	6920.74	-125.11	9271.7	9271.7	0	0	0
16500	90.37	90.04	6920.09	-125.18	9371.7	9371.7	0	0	0
16600	90.37	90.04	6919.45	-125.25	9471.69	9471.69	0	0	0
16700	90.37	90.04	6918.8	-125.33	9571.69	9571.69	0	0	0
16800	90.37	90.04	6918.15	-125.4	9671.69	9671.69	0	0	0
16900	90.37	90.04	6917.51	-125.47	9771.69	9771.69	0	0	0
16981.4	90.37	90.04	6916.98	-125.53	9853.09	9853.09	0	0	0

16981.4: TD: 6916.98