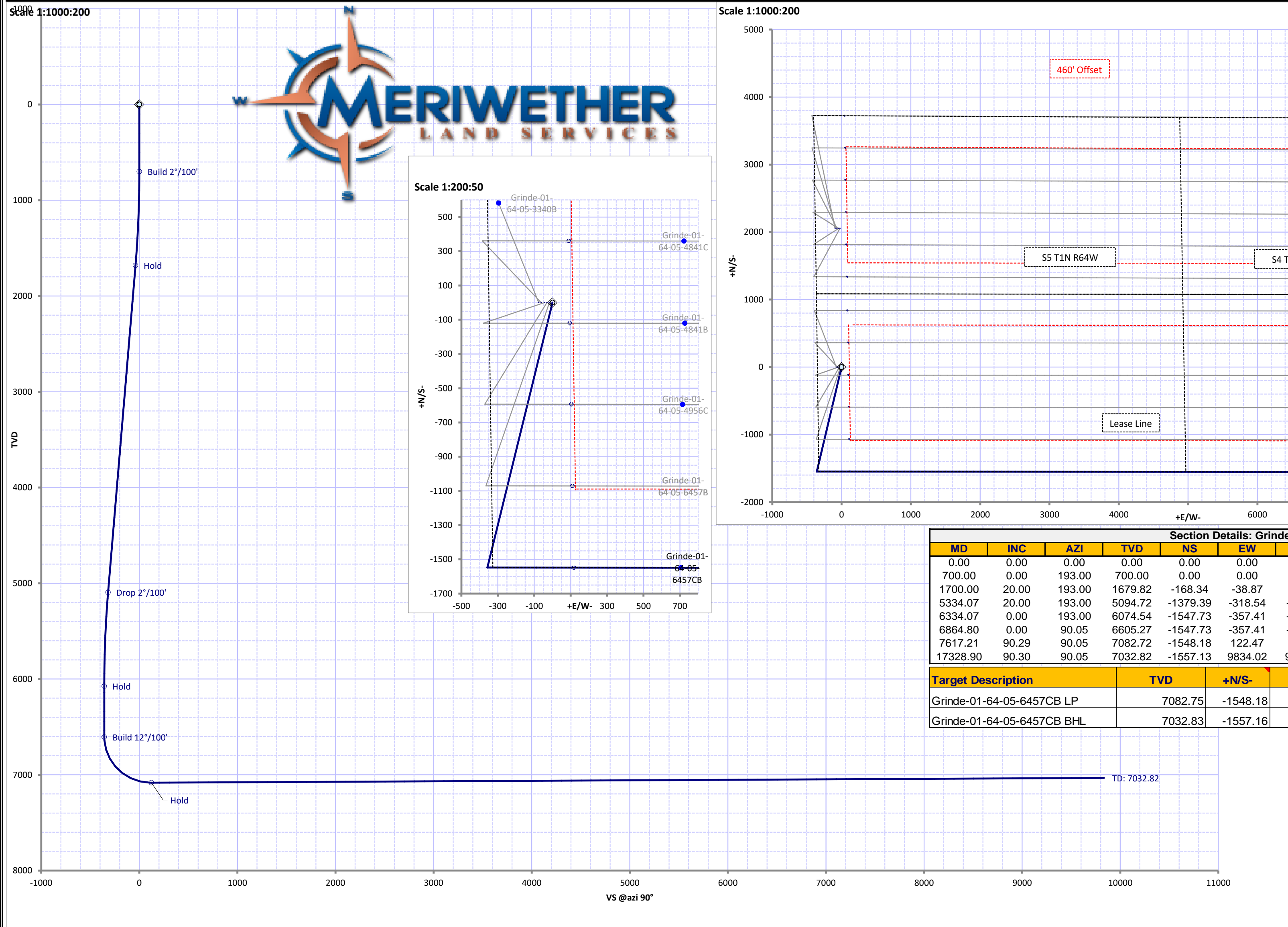


Well Grinde-01-64-05-6457CB		Operating Company Bill Barrett Corporation				Rig TBD, est. KB of 20'			
Magnetics		Location				Other			
Curr. Datum BGGM2016 Decl., ° 8.15		Northing, ft 1,272,405.12		Latitude 40.077500		Map System St. Plane		Meriwether Land Services, LLC	
Mag Date 14-Mar-2017 Dip Angle, ° 67.05		Easting, ft 3,256,618.32		Longitude 104.582950		Map Datum NAD83			
Field Str, nT 52552.70 Convergence, ° 0.5925367		Elevation, ft 5057.00		TVD Ref GL 5037' + KB 20'		Map Zone 0501 - Colorado North			
						North Reference True North			
						Vert. Sect, ° 90.00		December 12, 2017	



Section Details: Grinde-01-64-05-6457CB										
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
700.00	0.00	193.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00	Build 2°/100'
1700.00	20.00	193.00	1679.82	-168.34	-38.87	-38.87	2.00	0.00	2.00	Hold
5334.07	20.00	193.00	5094.72	-1379.39	-318.54	-318.54	0.00	0.00	0.00	Drop 2°/100'
6334.07	0.00	193.00	6074.54	-1547.73	-357.41	-357.41	-2.00	0.00	2.00	Hold
6864.80	0.00	90.05	6605.27	-1547.73	-357.41	-357.41	0.00	-24.10	0.00	Build 12°/100'
7617.21	90.29	90.05	7082.72	-1548.18	122.47	122.47	12.00	0.00	12.00	Hold
17328.90	90.30	90.05	7032.82	-1557.13	9834.02	9834.02	0.00	0.00	0.00	TD: 7032.82

Target Description	TVD	+N/S-	+E/W-	Latitude	Longitude	Northing	Easting
Grinde-01-64-05-6457CB LP	7082.75	-1548.18	117.54	40.07325	104.58253	1270858.24	3256751.86
Grinde-01-64-05-6457CB BHL	7032.83	-1557.16	9834.03	40.07322	104.54781	1270949.74	3266467.92

Magnetics	
Mag North, °	8.15
True North, °	0.00
Grid North, °	0.59
Mag Dip, °	67.05
Mag Str, nT	52552.70



Survey Report: Grinde-01-64-05-6457CB

Operator	Bill Barrett Corporation	Northing	1272405.118	Date	12-Dec-17
Dir. Co.	Meriwether Land Services, LLC	Easting	3256618.316	System	2 - St. Plane
Well Name	Grinde-01-64-05-6457CB	Elevation	5037.00	Datum	1983 - NAD83
Location	Weld Cty, CO	Latitude	40.077500	Zone	0501 - Colorado North
Rig	TBD, est. KB of 20'	Longitude	104.582950	Scale Fac.	0.999961
Job		Units	Feet	Converg.	0.592537

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
700	0	193	700	0	0	0	0	0	0
700: Build 2°/100'									
800	2	193	799.98	-1.7	-0.39	-0.39	2	0	2
900	4	193	899.84	-6.8	-1.57	-1.57	2	0	2
1000	6	193	999.45	-15.29	-3.53	-3.53	2	0	2
1100	8	193	1098.7	-27.16	-6.27	-6.27	2	0	2
1200	10	193	1197.47	-42.41	-9.79	-9.79	2	0	2
1300	12	193	1295.62	-61	-14.09	-14.09	2	0	2
1400	14	193	1393.06	-82.91	-19.15	-19.15	2	0	2
1500	16	193	1489.64	-108.13	-24.97	-24.97	2	0	2
1600	18	193	1585.27	-136.62	-31.55	-31.55	2	0	2
1700	20	193	1679.82	-168.34	-38.87	-38.87	2	0	2
1700: Hold									
1800	20	193	1773.78	-201.66	-46.57	-46.57	0	0	0
1900	20	193	1867.75	-234.99	-54.26	-54.26	0	0	0
2000	20	193	1961.72	-268.31	-61.96	-61.96	0	0	0
2100	20	193	2055.69	-301.64	-69.66	-69.66	0	0	0
2200	20	193	2149.66	-334.96	-77.35	-77.35	0	0	0
2300	20	193	2243.63	-368.29	-85.05	-85.05	0	0	0
2400	20	193	2337.6	-401.61	-92.74	-92.74	0	0	0
2500	20	193	2431.57	-434.94	-100.44	-100.44	0	0	0
2600	20	193	2525.54	-468.26	-108.13	-108.13	0	0	0
2700	20	193	2619.51	-501.59	-115.83	-115.83	0	0	0
2800	20	193	2713.48	-534.91	-123.53	-123.53	0	0	0
2900	20	193	2807.45	-568.24	-131.22	-131.22	0	0	0
3000	20	193	2901.42	-601.56	-138.92	-138.92	0	0	0
3100	20	193	2995.38	-634.89	-146.61	-146.61	0	0	0
3200	20	193	3089.35	-668.21	-154.31	-154.31	0	0	0
3300	20	193	3183.32	-701.54	-162	-162	0	0	0
3400	20	193	3277.29	-734.86	-169.7	-169.7	0	0	0
3500	20	193	3371.26	-768.19	-177.39	-177.39	0	0	0
3600	20	193	3465.23	-801.51	-185.09	-185.09	0	0	0
3700	20	193	3559.2	-834.84	-192.79	-192.79	0	0	0
3800	20	193	3653.17	-868.16	-200.48	-200.48	0	0	0
3900	20	193	3747.14	-901.49	-208.18	-208.18	0	0	0



Survey Report: Grinde-01-64-05-6457CB

Operator	Bill Barrett Corporation	Northing	1272405.118	Date	12-Dec-17
Dir. Co.	Meriwether Land Services, LLC	Easting	3256618.316	System	2 - St. Plane
Well Name	Grinde-01-64-05-6457CB	Elevation	5037.00	Datum	1983 - NAD83
Location	Weld Cty, CO	Latitude	40.077500	Zone	0501 - Colorado North
Rig	TBD, est. KB of 20'	Longitude	104.582950	Scale Fac.	0.999961
Job		Units	Feet	Converg.	0.592537

MD	INC	AZI	TVD	+N/S-	+E/W-	VS@90°	BR	TR	DLS
4000	20	193	3841.11	-934.81	-215.87	-215.87	0	0	0
4100	20	193	3935.08	-968.14	-223.57	-223.57	0	0	0
4200	20	193	4029.05	-1001.46	-231.26	-231.26	0	0	0
4300	20	193	4123.02	-1034.79	-238.96	-238.96	0	0	0
4400	20	193	4216.98	-1068.11	-246.66	-246.66	0	0	0
4500	20	193	4310.95	-1101.44	-254.35	-254.35	0	0	0
4600	20	193	4404.92	-1134.76	-262.05	-262.05	0	0	0
4700	20	193	4498.89	-1168.09	-269.74	-269.74	0	0	0
4800	20	193	4592.86	-1201.41	-277.44	-277.44	0	0	0
4900	20	193	4686.83	-1234.74	-285.13	-285.13	0	0	0
5000	20	193	4780.8	-1268.06	-292.83	-292.83	0	0	0
5100	20	193	4874.77	-1301.39	-300.52	-300.52	0	0	0
5200	20	193	4968.74	-1334.72	-308.22	-308.22	0	0	0
5300	20	193	5062.71	-1368.04	-315.92	-315.92	0	0	0
5334.07	20	193	5094.72	-1379.39	-318.54	-318.54	0	0	0
5334.07: Drop 2°/100'									
5400	18.68	193	5156.93	-1400.67	-323.45	-323.45	-2	0	2
5500	16.68	193	5252.2	-1430.26	-330.28	-330.28	-2	0	2
5600	14.68	193	5348.48	-1456.6	-336.37	-336.37	-2	0	2
5700	12.68	193	5445.63	-1479.64	-341.69	-341.69	-2	0	2
5800	10.68	193	5543.56	-1499.37	-346.24	-346.24	-2	0	2
5900	8.68	193	5642.13	-1515.75	-350.03	-350.03	-2	0	2
6000	6.68	193	5741.22	-1528.78	-353.03	-353.03	-2	0	2
6100	4.68	193	5840.73	-1538.42	-355.26	-355.26	-2	0	2
6200	2.68	193	5940.52	-1544.68	-356.71	-356.71	-2	0	2
6300	0.68	193	6040.47	-1547.54	-357.37	-357.37	-2	0	2
6334.07	0	193	6074.54	-1547.73	-357.41	-357.41	-2	0	2
6334.07: Hold									
6400	0	193	6140.47	-1547.73	-357.41	-357.41	0	0	0
6500	0	193	6240.47	-1547.73	-357.41	-357.41	0	0	0
6600	0	184.24	6340.47	-1547.73	-357.41	-357.41	0	-8.77	0
6700	0	147.24	6440.47	-1547.73	-357.41	-357.41	0	-36.99	0
6800	0	105.67	6540.47	-1547.73	-357.41	-357.41	0	-41.58	0
6864.8	0	90.05	6605.27	-1547.73	-357.41	-357.41	0	-24.1	0
6864.8: Build 12°/100'									
6900	4.22	90.05	6640.44	-1547.73	-356.11	-356.11	12	0	12
7000	16.22	90.05	6738.67	-1547.75	-338.4	-338.4	12	0	12
7100	28.22	90.05	6831.07	-1547.79	-300.64	-300.64	12	0	12
7200	40.22	90.05	6913.6	-1547.84	-244.5	-244.5	12	0	12
7300	52.22	90.05	6982.66	-1547.9	-172.43	-172.43	12	0	12
7400	64.22	90.05	7035.22	-1547.98	-87.57	-87.57	12	0	12
7500	76.22	90.05	7069	-1548.07	6.36	6.36	12	0	12
7600	88.22	90.05	7082.5	-1548.16	105.26	105.26	12	0	12
7617.21	90.29	90.05	7082.72	-1548.18	122.47	122.47	12	0	12



Survey Report: Grinde-01-64-05-6457CB

Operator	Bill Barrett Corporation			Northing	1272405.118			Date	12-Dec-17		
Dir. Co.	Meriwether Land Services, LLC			Easting	3256618.316			System	2 - St. Plane		
Well Name	Grinde-01-64-05-6457CB			Elevation	5037.00			Datum	1983 - NAD83		
Location	Weld Cty, CO			Latitude	40.077500			Zone	0501 - Colorado North		
Rig	TBD, est. KB of 20'			Longitude	104.582950			Scale Fac.	0.999961		
Job				Units	Feet			Converg.	0.592537		
MD	INC	AZI	TVD	+N/S-	+E/W-	VS@90°	BR	TR	DLS		

7617.21: Hold

7700	90.29	90.05	7082.31	-1548.25	205.25	205.25	0	0	0
7800	90.29	90.05	7081.8	-1548.34	305.25	305.25	0	0	0
7900	90.29	90.05	7081.29	-1548.44	405.25	405.25	0	0	0
8000	90.29	90.05	7080.79	-1548.53	505.25	505.25	0	0	0
8100	90.29	90.05	7080.28	-1548.62	605.25	605.25	0	0	0
8200	90.29	90.05	7079.77	-1548.71	705.25	705.25	0	0	0
8300	90.29	90.05	7079.27	-1548.8	805.25	805.25	0	0	0
8400	90.29	90.05	7078.76	-1548.9	905.24	905.24	0	0	0
8500	90.29	90.05	7078.25	-1548.99	1005.24	1005.24	0	0	0
8600	90.29	90.05	7077.74	-1549.08	1105.24	1105.24	0	0	0
8700	90.29	90.05	7077.23	-1549.17	1205.24	1205.24	0	0	0
8800	90.29	90.05	7076.73	-1549.27	1305.24	1305.24	0	0	0
8900	90.29	90.05	7076.22	-1549.36	1405.24	1405.24	0	0	0
9000	90.29	90.05	7075.71	-1549.45	1505.24	1505.24	0	0	0
9100	90.29	90.05	7075.2	-1549.54	1605.24	1605.24	0	0	0
9200	90.29	90.05	7074.69	-1549.63	1705.23	1705.23	0	0	0
9300	90.29	90.05	7074.18	-1549.73	1805.23	1805.23	0	0	0
9400	90.29	90.05	7073.68	-1549.82	1905.23	1905.23	0	0	0
9500	90.29	90.05	7073.17	-1549.91	2005.23	2005.23	0	0	0
9600	90.29	90.05	7072.66	-1550	2105.23	2105.23	0	0	0
9700	90.29	90.05	7072.15	-1550.1	2205.23	2205.23	0	0	0
9800	90.29	90.05	7071.64	-1550.19	2305.23	2305.23	0	0	0
9900	90.29	90.05	7071.13	-1550.28	2405.23	2405.23	0	0	0
10000	90.29	90.05	7070.62	-1550.37	2505.22	2505.22	0	0	0
10100	90.29	90.05	7070.11	-1550.46	2605.22	2605.22	0	0	0
10200	90.29	90.05	7069.6	-1550.56	2705.22	2705.22	0	0	0
10300	90.29	90.05	7069.09	-1550.65	2805.22	2805.22	0	0	0
10400	90.29	90.05	7068.58	-1550.74	2905.22	2905.22	0	0	0
10500	90.29	90.05	7068.07	-1550.83	3005.22	3005.22	0	0	0
10600	90.29	90.05	7067.56	-1550.92	3105.22	3105.22	0	0	0
10700	90.29	90.05	7067.05	-1551.02	3205.21	3205.21	0	0	0
10800	90.29	90.05	7066.53	-1551.11	3305.21	3305.21	0	0	0
10900	90.29	90.05	7066.02	-1551.2	3405.21	3405.21	0	0	0
11000	90.29	90.05	7065.51	-1551.29	3505.21	3505.21	0	0	0
11100	90.29	90.05	7065	-1551.39	3605.21	3605.21	0	0	0
11200	90.29	90.05	7064.49	-1551.48	3705.21	3705.21	0	0	0
11300	90.29	90.05	7063.98	-1551.57	3805.21	3805.21	0	0	0
11400	90.29	90.05	7063.46	-1551.66	3905.21	3905.21	0	0	0
11500	90.29	90.05	7062.95	-1551.75	4005.2	4005.2	0	0	0
11600	90.29	90.05	7062.44	-1551.85	4105.2	4105.2	0	0	0
11700	90.29	90.05	7061.93	-1551.94	4205.2	4205.2	0	0	0
11800	90.29	90.05	7061.41	-1552.03	4305.2	4305.2	0	0	0
11900	90.29	90.05	7060.9	-1552.12	4405.2	4405.2	0	0	0



Survey Report: Grinde-01-64-05-6457CB

Operator	Bill Barrett Corporation	Northing	1272405.118	Date	12-Dec-17
Dir. Co.	Meriwether Land Services, LLC	Easting	3256618.316	System	2 - St. Plane
Well Name	Grinde-01-64-05-6457CB	Elevation	5037.00	Datum	1983 - NAD83
Location	Weld Cty, CO	Latitude	40.077500	Zone	0501 - Colorado North
Rig	TBD, est. KB of 20'	Longitude	104.582950	Scale Fac.	0.999961
Job		Units	Feet	Converg.	0.592537

MD	INC	AZI	TVD	+N/S-	+E/W-	VS@90°	BR	TR	DLS
12000	90.29	90.05	7060.39	-1552.22	4505.2	4505.2	0	0	0
12100	90.29	90.05	7059.88	-1552.31	4605.2	4605.2	0	0	0
12200	90.29	90.05	7059.36	-1552.4	4705.19	4705.19	0	0	0
12300	90.29	90.05	7058.85	-1552.49	4805.19	4805.19	0	0	0
12400	90.29	90.05	7058.34	-1552.58	4905.19	4905.19	0	0	0
12500	90.29	90.05	7057.82	-1552.68	5005.19	5005.19	0	0	0
12600	90.29	90.05	7057.31	-1552.77	5105.19	5105.19	0	0	0
12700	90.29	90.05	7056.79	-1552.86	5205.19	5205.19	0	0	0
12800	90.29	90.05	7056.28	-1552.95	5305.19	5305.19	0	0	0
12900	90.29	90.05	7055.76	-1553.04	5405.18	5405.18	0	0	0
13000	90.29	90.05	7055.25	-1553.14	5505.18	5505.18	0	0	0
13100	90.29	90.05	7054.74	-1553.23	5605.18	5605.18	0	0	0
13200	90.3	90.05	7054.22	-1553.32	5705.18	5705.18	0	0	0
13300	90.3	90.05	7053.71	-1553.41	5805.18	5805.18	0	0	0
13400	90.3	90.05	7053.19	-1553.51	5905.18	5905.18	0	0	0
13500	90.3	90.05	7052.67	-1553.6	6005.18	6005.18	0	0	0
13600	90.3	90.05	7052.16	-1553.69	6105.18	6105.18	0	0	0
13700	90.3	90.05	7051.64	-1553.78	6205.17	6205.17	0	0	0
13800	90.3	90.05	7051.13	-1553.87	6305.17	6305.17	0	0	0
13900	90.3	90.05	7050.61	-1553.97	6405.17	6405.17	0	0	0
14000	90.3	90.05	7050.1	-1554.06	6505.17	6505.17	0	0	0
14100	90.3	90.05	7049.58	-1554.15	6605.17	6605.17	0	0	0
14200	90.3	90.05	7049.06	-1554.24	6705.17	6705.17	0	0	0
14300	90.3	90.05	7048.55	-1554.33	6805.17	6805.17	0	0	0
14400	90.3	90.05	7048.03	-1554.43	6905.16	6905.16	0	0	0
14500	90.3	90.05	7047.51	-1554.52	7005.16	7005.16	0	0	0
14600	90.3	90.05	7046.99	-1554.61	7105.16	7105.16	0	0	0
14700	90.3	90.05	7046.48	-1554.7	7205.16	7205.16	0	0	0
14800	90.3	90.05	7045.96	-1554.8	7305.16	7305.16	0	0	0
14900	90.3	90.05	7045.44	-1554.89	7405.16	7405.16	0	0	0
15000	90.3	90.05	7044.92	-1554.98	7505.16	7505.16	0	0	0
15100	90.3	90.05	7044.41	-1555.07	7605.15	7605.15	0	0	0
15200	90.3	90.05	7043.89	-1555.16	7705.15	7705.15	0	0	0
15300	90.3	90.05	7043.37	-1555.26	7805.15	7805.15	0	0	0
15400	90.3	90.05	7042.85	-1555.35	7905.15	7905.15	0	0	0
15500	90.3	90.05	7042.33	-1555.44	8005.15	8005.15	0	0	0
15600	90.3	90.05	7041.81	-1555.53	8105.15	8105.15	0	0	0
15700	90.3	90.05	7041.3	-1555.63	8205.15	8205.15	0	0	0
15800	90.3	90.05	7040.78	-1555.72	8305.15	8305.15	0	0	0
15900	90.3	90.05	7040.26	-1555.81	8405.14	8405.14	0	0	0
16000	90.3	90.05	7039.74	-1555.9	8505.14	8505.14	0	0	0
16100	90.3	90.05	7039.22	-1555.99	8605.14	8605.14	0	0	0
16200	90.3	90.05	7038.7	-1556.09	8705.14	8705.14	0	0	0
16300	90.3	90.05	7038.18	-1556.18	8805.14	8805.14	0	0	0



Survey Report: Grinde-01-64-05-6457CB

Operator	Bill Barrett Corporation	Northing	1272405.118	Date	12-Dec-17
Dir. Co.	Meriwether Land Services, LLC	Easting	3256618.316	System	2 - St. Plane
Well Name	Grinde-01-64-05-6457CB	Elevation	5037.00	Datum	1983 - NAD83
Location	Weld Cty, CO	Latitude	40.077500	Zone	0501 - Colorado North
Rig	TBD, est. KB of 20'	Longitude	104.582950	Scale Fac.	0.999961
Job		Units	Feet	Converg.	0.592537

MD	INC	AZI	TVD	+N/S-	+E/W-	VS@90°	BR	TR	DLS
16400	90.3	90.05	7037.66	-1556.27	8905.14	8905.14	0	0	0
16500	90.3	90.05	7037.14	-1556.36	9005.14	9005.14	0	0	0
16600	90.3	90.05	7036.62	-1556.45	9105.13	9105.13	0	0	0
16700	90.3	90.05	7036.1	-1556.55	9205.13	9205.13	0	0	0
16800	90.3	90.05	7035.58	-1556.64	9305.13	9305.13	0	0	0
16900	90.3	90.05	7035.06	-1556.73	9405.13	9405.13	0	0	0
17000	90.3	90.05	7034.54	-1556.82	9505.13	9505.13	0	0	0
17100	90.3	90.05	7034.01	-1556.92	9605.13	9605.13	0	0	0
17200	90.3	90.05	7033.49	-1557.01	9705.13	9705.13	0	0	0
17300	90.3	90.05	7032.97	-1557.1	9805.12	9805.12	0	0	0
17328.9	90.3	90.05	7032.82	-1557.13	9834.02	9834.02	0	0	0

17328.9: TD: 7032.82