

# **HighPoint Resources**

**Weld County, CO (NAD83)**

**Sec 05-T01N-R64W Grinde Pad**

**Grinde 01-64-05-1724B**

**Wellbore #1**

**Design: Wellbore #1**

## **Standard Survey Report**

**21 February, 2020**



PROJECT DETAILS: Weld County, CO (NAD83)  
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

HighPoint Resources  
Project: Weld County, CO (NAD83)  
Site: Sec 05-T01N-R64W Grinde Pad  
Well: Grinde 01-64-05-1724B  
Wellbore: Wellbore #1  
Design: Wellbore #1 (Grinde 01-64-05-1724B/Wellbore #1)  
Cade 23

WELL DETAILS: Grinde 01-64-05-1724B

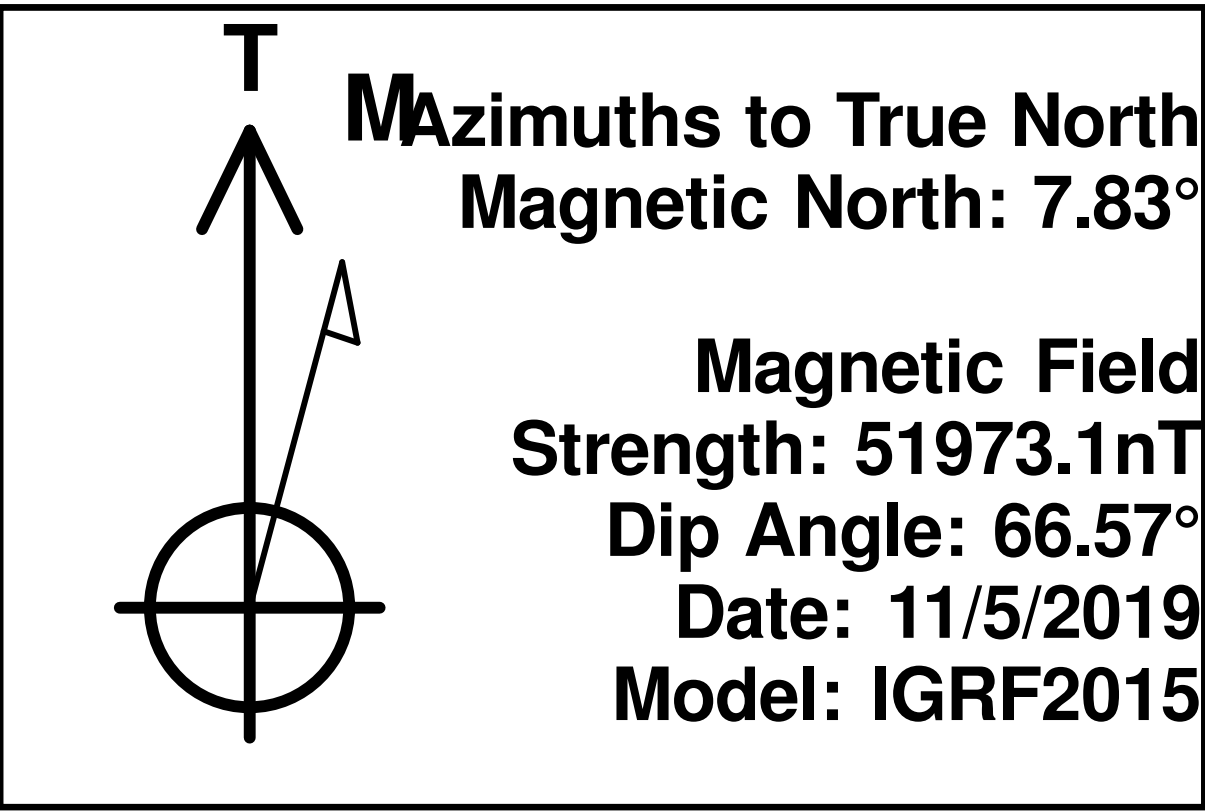
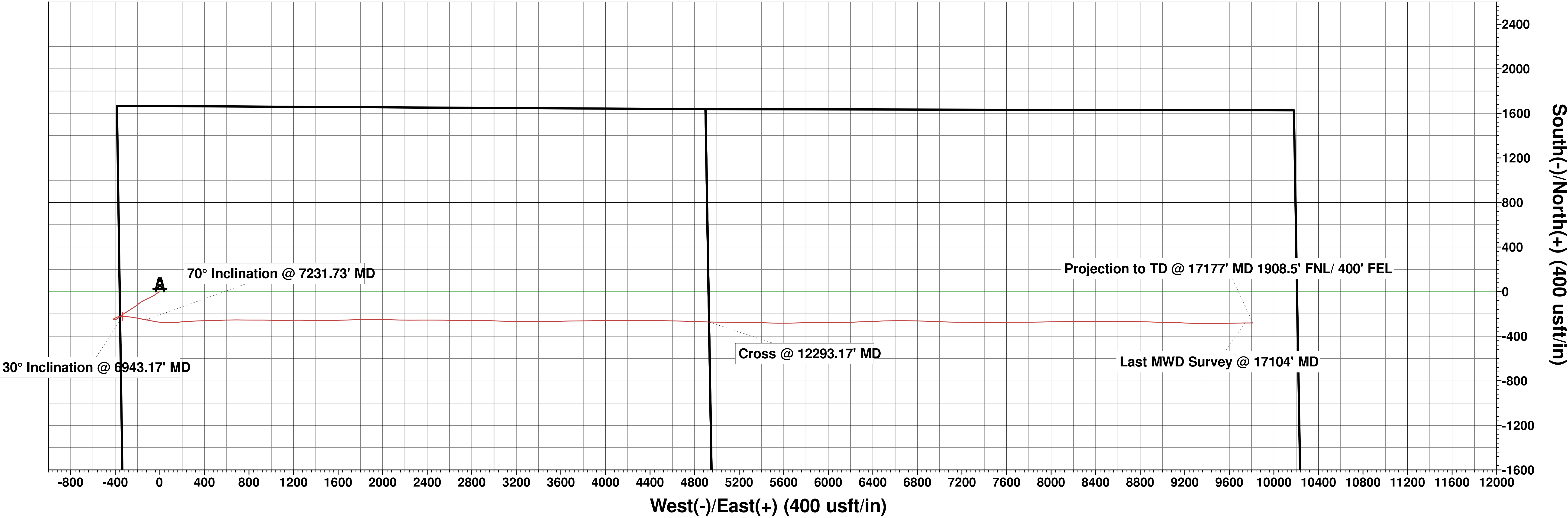
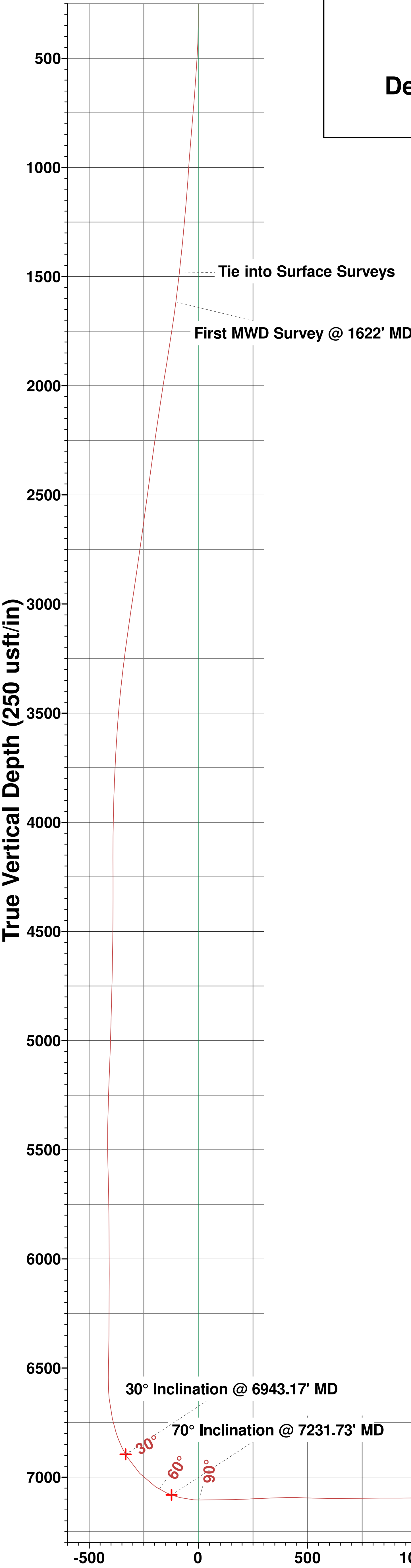
Ground Elevation:: 5025.00  
RKB Elevation: KB @ 5041.50usft (Cade 23)  
Rig Name: Cade 23



Northing	Easting	Latitude	Longitude
1274462.77	3256560.66	40.083150	-104.583080

ANNOTATIONS

MD	Inc	Azi	TVD	+N/-S	+E/-W	VSect	Departure	Annotation
1488.50	7.34	241.08	1483.61	-52.94	-87.62	-87.40	104.23	Tie into Surface Surveys
1622.00	7.59	246.18	1615.98	-60.62	-103.15	-102.90	121.57	First MWD Survey @ 1622' MD
6943.17	29.97	91.22	6895.44	-221.33	-334.33	-333.44	596.75	30° Inclination @ 6943.17' MD
7231.73	70.00	100.75	7081.48	-252.71	-123.96	-122.94	809.46	70° Inclination @ 7231.73' MD
12293.17	89.96	91.57	7061.09	-271.92	4930.00	4931.05	5866.92	Cross @ 12293.17' MD
17104.00	89.96	90.03	7024.41	-281.09	9738.76	9739.81	10676.83	Last MWD Survey @ 17104' MD
17177.00	89.96	90.03	7024.46	-281.13	9811.76	9812.81	10749.83	Projection to TD @ 17177' MD 1908.5' FNL/ 400' FEL



Vertical Section at 90.23° (250 usft/in)

## Survey Report

<b>Company:</b>	HighPoint Resources	<b>Local Co-ordinate Reference:</b>	Well Grinde 01-64-05-1724B
<b>Project:</b>	Weld County, CO (NAD83)	<b>TVD Reference:</b>	KB @ 5041.50usft (Cade 23)
<b>Site:</b>	Sec 05-T01N-R64W Grinde Pad	<b>MD Reference:</b>	KB @ 5041.50usft (Cade 23)
<b>Well:</b>	Grinde 01-64-05-1724B	<b>North Reference:</b>	True
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Wellbore #1	<b>Database:</b>	EDM 5000.15 Single User Db

<b>Project</b>	Weld County, CO (NAD83)		
<b>Map System:</b>	US State Plane 1983	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	North American Datum 1983		
<b>Map Zone:</b>	Colorado Northern Zone		

Site		Sec 05-T01N-R64W Grinde Pad			
Site Position:		Northing:	1,276,126.40 usft	Latitude:	40.087728
From:	Lat/Long	Easting:	3,256,159.56 usft	Longitude:	-104.584452
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.59 °

Well	Grinde 01-64-05-1724B					
Well Position	+N/-S	0.00 usft	Northing:	1,274,462.77 usft	Latitude:	40.083150
	+E/-W	0.00 usft	Easting:	3,256,560.66 usft	Longitude:	-104.583080
Position Uncertainty		0.00 usft	Wellhead Elevation:	usft	Ground Level:	5,025.00 usft

<b>Wellbore</b>	Wellbore #1				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2015	11/5/2019	7.83	66.57	51,973.13156679

<b>Design</b>	Wellbore #1				
<b>Audit Notes:</b>					
<b>Version:</b>	1.0	<b>Phase:</b>	ACTUAL	<b>Tie On Depth:</b>	0.00
<b>Vertical Section:</b>	<b>Depth From (TVD) (usft)</b>	<b>+N/-S (usft)</b>	<b>+E/-W (usft)</b>	<b>Direction (°)</b>	
	0.00	0.00	0.00	90.23	

<b>Survey Program</b>	<b>Date</b>	2/20/2020			
<b>From (usft)</b>	<b>To (usft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>	
115.50	1,488.50	Surface Surveys (Wellbore #1)	MWD	MWD - Standard	
1,622.00	17,177.00	MagVar Corrected Surveys (Wellbore #1)	MWD+HRGM+MS	MWD + HRGM + Multi-Station Correction	

<b>Survey</b>										
<b>Measured Depth (usft)</b>	<b>Inclination (°)</b>	<b>Azimuth (°)</b>	<b>Vertical Depth (usft)</b>	<b>+N/-S (usft)</b>	<b>+E/-W (usft)</b>	<b>Vertical Section (usft)</b>	<b>Dogleg Rate (°/100usft)</b>	<b>Build Rate (°/100usft)</b>	<b>Turn Rate (°/100usft)</b>	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
115.50	0.70	306.74	115.50	0.42	-0.57	-0.57	0.61	0.61	0.00	
210.50	0.18	47.99	210.49	0.87	-0.92	-0.92	0.80	-0.55	106.58	
305.50	0.18	160.66	305.49	0.83	-0.76	-0.76	0.32	0.00	118.60	
400.50	1.71	227.99	400.48	-0.26	-1.76	-1.76	1.74	1.61	70.87	
496.50	4.22	238.27	496.34	-3.08	-5.83	-5.82	2.66	2.61	10.71	
591.50	4.57	238.80	591.06	-6.88	-12.04	-12.01	0.37	0.37	0.56	
686.50	5.23	237.48	685.72	-11.17	-18.93	-18.89	0.70	0.69	-1.39	
781.50	5.80	238.71	780.28	-15.99	-26.68	-26.62	0.61	0.60	1.29	
876.50	5.98	235.28	874.78	-21.30	-34.85	-34.77	0.42	0.19	-3.61	

# Survey Report

<b>Company:</b>	HighPoint Resources	<b>Local Co-ordinate Reference:</b>	Well Grinde 01-64-05-1724B
<b>Project:</b>	Weld County, CO (NAD83)	<b>TVD Reference:</b>	KB @ 5041.50usft (Cade 23)
<b>Site:</b>	Sec 05-T01N-R64W Grinde Pad	<b>MD Reference:</b>	KB @ 5041.50usft (Cade 23)
<b>Well:</b>	Grinde 01-64-05-1724B	<b>North Reference:</b>	True
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Wellbore #1	<b>Database:</b>	EDM 5000.15 Single User Db

Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
971.50	4.88	232.12	969.35	-26.60	-42.11	-42.00	1.20	-1.16	-3.33
1,066.50	5.01	234.67	1,063.99	-31.48	-48.68	-48.56	0.27	0.14	2.68
1,161.50	5.23	244.60	1,158.62	-35.73	-55.98	-55.84	0.96	0.23	10.45
1,256.50	6.02	239.76	1,253.16	-40.10	-64.19	-64.03	0.97	0.83	-5.09
1,352.50	6.46	243.19	1,348.59	-45.07	-73.36	-73.18	0.60	0.46	3.57
1,447.50	7.03	239.76	1,442.93	-50.41	-83.16	-82.95	0.73	0.60	-3.61
1,488.50	7.34	241.08	1,483.61	-52.94	-87.62	-87.40	0.86	0.76	3.22
Tie into Surface Surveys									
1,622.00	7.59	246.18	1,615.98	-60.62	-103.15	-102.90	0.53	0.19	3.82
First MWD Survey @ 1622' MD									
1,717.00	9.51	249.12	1,709.92	-65.96	-116.22	-115.95	2.07	2.02	3.09
1,813.00	9.84	243.13	1,804.56	-72.49	-130.95	-130.66	1.10	0.34	-6.24
1,908.00	10.25	240.26	1,898.10	-80.35	-145.53	-145.20	0.68	0.43	-3.02
2,004.00	10.48	241.87	1,992.54	-88.70	-160.64	-160.29	0.39	0.24	1.68
2,099.00	10.62	234.18	2,085.93	-97.90	-175.36	-174.97	1.49	0.15	-8.09
2,195.00	10.29	233.03	2,180.34	-108.24	-189.39	-188.95	0.41	-0.34	-1.20
2,290.00	10.17	231.72	2,273.83	-118.53	-202.75	-202.27	0.28	-0.13	-1.38
2,386.00	9.81	231.36	2,368.38	-128.89	-215.79	-215.27	0.38	-0.38	-0.38
2,480.00	9.44	236.20	2,461.05	-138.18	-228.45	-227.89	0.95	-0.39	5.15
2,575.00	9.44	237.78	2,554.77	-146.67	-241.51	-240.92	0.27	0.00	1.66
2,671.00	9.04	237.53	2,649.52	-154.91	-254.54	-253.91	0.42	-0.42	-0.26
2,767.00	9.87	237.04	2,744.22	-163.44	-267.81	-267.15	0.87	0.86	-0.51
2,862.00	9.28	238.12	2,837.89	-171.92	-281.14	-280.45	0.65	-0.62	1.14
2,958.00	10.23	238.77	2,932.50	-180.42	-295.00	-294.28	1.00	0.99	0.68
3,053.00	9.91	238.35	3,026.04	-189.09	-309.18	-308.41	0.35	-0.34	-0.44
3,148.00	9.62	236.44	3,119.66	-197.76	-322.75	-321.95	0.46	-0.31	-2.01
3,243.00	8.92	235.55	3,213.42	-206.32	-335.44	-334.61	0.75	-0.74	-0.94
3,338.00	8.39	233.44	3,307.34	-214.61	-347.08	-346.21	0.65	-0.56	-2.22
3,433.00	7.93	228.98	3,401.38	-223.04	-357.59	-356.69	0.82	-0.48	-4.69
3,528.00	6.58	225.88	3,495.62	-231.13	-366.44	-365.51	1.48	-1.42	-3.26
3,624.00	4.67	233.38	3,591.15	-237.30	-373.53	-372.57	2.13	-1.99	7.81
3,718.00	3.73	241.83	3,684.90	-241.02	-379.30	-378.32	1.19	-1.00	8.99
3,813.00	2.89	240.70	3,779.74	-243.65	-384.11	-383.13	0.89	-0.88	-1.19
3,908.00	2.04	243.25	3,874.65	-245.59	-387.71	-386.72	0.90	-0.89	2.68
4,003.00	1.31	243.27	3,969.61	-246.84	-390.19	-389.19	0.77	-0.77	0.02
4,099.00	0.77	248.06	4,065.59	-247.57	-391.76	-390.77	0.57	-0.56	4.99
4,194.00	0.30	53.18	4,160.59	-247.66	-392.16	-391.16	1.12	-0.49	173.81
4,290.00	0.18	174.33	4,256.59	-247.66	-391.94	-390.94	0.44	-0.13	126.20
4,385.00	0.16	202.26	4,351.59	-247.93	-391.98	-390.98	0.09	-0.02	29.40
4,481.00	0.42	230.45	4,447.59	-248.28	-392.30	-391.30	0.30	0.27	29.36
4,576.00	0.83	249.42	4,542.58	-248.74	-393.21	-392.21	0.48	0.43	19.97
4,671.00	1.10	250.25	4,637.57	-249.29	-394.71	-393.71	0.28	0.28	0.87
4,767.00	1.43	256.71	4,733.55	-249.88	-396.75	-395.74	0.37	0.34	6.73

# Survey Report

<b>Company:</b>	HighPoint Resources	<b>Local Co-ordinate Reference:</b>	Well Grinde 01-64-05-1724B
<b>Project:</b>	Weld County, CO (NAD83)	<b>TVD Reference:</b>	KB @ 5041.50usft (Cade 23)
<b>Site:</b>	Sec 05-T01N-R64W Grinde Pad	<b>MD Reference:</b>	KB @ 5041.50usft (Cade 23)
<b>Well:</b>	Grinde 01-64-05-1724B	<b>North Reference:</b>	True
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Wellbore #1	<b>Database:</b>	EDM 5000.15 Single User Db

Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
4,863.00	1.43	294.38	4,829.52	-249.66	-399.00	-398.00	0.96	0.00	39.24	
4,958.00	1.76	301.50	4,924.48	-248.41	-401.33	-400.33	0.40	0.35	7.49	
5,053.00	2.13	298.24	5,019.43	-246.81	-404.13	-403.13	0.41	0.39	-3.43	
5,147.00	2.40	292.76	5,113.35	-245.22	-407.48	-406.49	0.37	0.29	-5.83	
5,242.00	1.79	264.23	5,208.29	-244.60	-410.79	-409.81	1.25	-0.64	-30.03	
5,338.00	2.12	252.75	5,304.24	-245.28	-413.98	-412.99	0.53	0.34	-11.96	
5,434.00	1.15	241.96	5,400.20	-246.26	-416.53	-415.53	1.06	-1.01	-11.24	
5,529.00	0.82	144.84	5,495.19	-247.26	-416.98	-415.98	1.57	-0.35	-102.23	
5,624.00	2.16	111.68	5,590.15	-248.48	-414.92	-413.92	1.62	1.41	-34.91	
5,719.00	1.09	76.81	5,685.12	-248.93	-412.38	-411.37	1.48	-1.13	-36.71	
5,814.00	0.63	101.47	5,780.11	-248.83	-410.98	-409.98	0.61	-0.48	25.96	
5,910.00	0.40	57.52	5,876.10	-248.76	-410.18	-409.18	0.46	-0.24	-45.78	
6,004.00	0.41	52.13	5,970.10	-248.37	-409.64	-408.64	0.04	0.01	-5.73	
6,100.00	0.35	343.86	6,066.10	-247.88	-409.45	-408.45	0.45	-0.06	-71.11	
6,195.00	0.56	329.56	6,161.10	-247.20	-409.77	-408.77	0.25	0.22	-15.05	
6,290.00	0.49	344.02	6,256.09	-246.41	-410.12	-409.12	0.16	-0.07	15.22	
6,386.00	0.60	308.34	6,352.09	-245.71	-410.62	-409.63	0.36	0.11	-37.17	
6,481.00	1.16	307.55	6,447.08	-244.81	-411.78	-410.79	0.59	0.59	-0.83	
6,577.00	1.40	307.05	6,543.05	-243.51	-413.48	-412.50	0.25	0.25	-0.52	
6,644.00	4.36	60.49	6,609.99	-241.76	-411.92	-410.94	7.58	4.42	169.31	
6,673.00	6.33	65.15	6,638.86	-240.55	-409.51	-408.54	6.95	6.79	16.07	
6,768.00	13.54	65.46	6,732.38	-233.72	-394.62	-393.68	7.59	7.59	0.33	
6,832.00	18.18	68.32	6,793.92	-226.92	-378.52	-377.60	7.35	7.25	4.47	
6,863.00	21.01	77.86	6,823.13	-223.96	-368.59	-367.68	13.75	9.13	30.77	
6,910.00	26.26	86.66	6,866.19	-221.58	-349.95	-349.06	13.43	11.17	18.72	
6,943.17	29.97	91.22	6,895.44	-221.33	-334.33	-333.44	12.93	11.19	13.75	
30° Inclination @ 6943.17' MD										
6,957.00	31.56	92.83	6,907.33	-221.58	-327.26	-326.37	12.93	11.48	11.63	
7,052.00	43.58	97.08	6,982.50	-226.86	-269.72	-268.80	12.94	12.65	4.47	
7,148.00	56.42	100.59	7,044.09	-238.34	-197.26	-196.30	13.66	13.38	3.66	
7,208.00	66.54	101.51	7,072.70	-248.45	-145.59	-144.59	16.92	16.87	1.53	
7,231.73	70.00	100.75	7,081.48	-252.71	-123.96	-122.94	14.88	14.58	-3.20	
70° Inclination @ 7231.73' MD										
7,244.00	71.79	100.37	7,085.50	-254.83	-112.56	-111.54	14.88	14.59	-3.10	
7,273.00	75.87	101.49	7,093.57	-260.11	-85.22	-84.18	14.55	14.07	3.86	
7,338.00	85.65	98.52	7,104.00	-271.22	-22.12	-21.03	15.71	15.05	-4.57	
7,365.00	90.76	98.19	7,104.85	-275.14	4.57	5.68	18.97	18.93	-1.22	
7,370.00	91.08	97.95	7,104.77	-275.84	9.52	10.63	8.00	6.40	-4.80	
7,389.00	91.34	94.90	7,104.36	-277.97	28.39	29.51	16.11	1.37	-16.05	
7,463.00	90.30	86.58	7,103.30	-278.92	102.32	103.43	11.33	-1.41	-11.24	
7,495.00	90.45	84.92	7,103.09	-276.55	134.23	135.33	5.21	0.47	-5.19	
7,525.00	90.99	84.66	7,102.72	-273.83	164.10	165.20	2.00	1.80	-0.87	
7,558.00	92.61	84.80	7,101.68	-270.80	196.94	198.03	4.93	4.91	0.42	
7,589.00	92.81	85.69	7,100.21	-268.23	227.80	228.88	2.94	0.65	2.87	



## Survey Report

<b>Company:</b>	HighPoint Resources	<b>Local Co-ordinate Reference:</b>	Well Grinde 01-64-05-1724B
<b>Project:</b>	Weld County, CO (NAD83)	<b>TVD Reference:</b>	KB @ 5041.50usft (Cade 23)
<b>Site:</b>	Sec 05-T01N-R64W Grinde Pad	<b>MD Reference:</b>	KB @ 5041.50usft (Cade 23)
<b>Well:</b>	Grinde 01-64-05-1724B	<b>North Reference:</b>	True
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Wellbore #1	<b>Database:</b>	EDM 5000.15 Single User Db

Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
7,621.00	92.52	86.61	7,098.73	-266.09	259.69	260.76	3.01	-0.91	2.88
7,716.00	92.04	88.72	7,094.95	-262.22	354.53	355.58	2.28	-0.51	2.22
7,763.00	91.70	88.59	7,093.41	-261.12	401.50	402.54	0.77	-0.72	-0.28
7,812.00	88.17	88.36	7,093.47	-259.81	450.47	451.51	7.22	-7.20	-0.47
7,859.00	87.82	88.55	7,095.11	-258.55	497.42	498.46	0.85	-0.74	0.40
7,907.00	89.03	87.24	7,096.43	-256.78	545.37	546.40	3.71	2.52	-2.73
7,954.00	89.56	87.75	7,097.01	-254.73	592.32	593.34	1.56	1.13	1.09
8,002.00	89.59	89.58	7,097.37	-253.61	640.31	641.32	3.81	0.06	3.81
8,097.00	91.05	90.85	7,096.84	-253.97	735.30	736.31	2.04	1.54	1.34
8,191.00	90.27	90.04	7,095.75	-254.70	829.29	830.31	1.20	-0.83	-0.86
8,287.00	89.65	90.50	7,095.82	-255.15	925.29	926.30	0.80	-0.65	0.48
8,382.00	91.04	91.42	7,095.25	-256.74	1,020.27	1,021.29	1.75	1.46	0.97
8,478.00	91.61	89.24	7,093.03	-257.29	1,116.24	1,117.26	2.35	0.59	-2.27
8,573.00	89.61	89.52	7,092.02	-256.27	1,211.22	1,212.24	2.13	-2.11	0.29
8,668.00	88.35	91.18	7,093.71	-256.85	1,306.20	1,307.22	2.19	-1.33	1.75
8,764.00	89.42	89.35	7,095.58	-257.29	1,402.17	1,403.19	2.21	1.11	-1.91
8,859.00	88.67	90.95	7,097.16	-257.54	1,497.16	1,498.18	1.86	-0.79	1.68
8,954.00	89.51	88.40	7,098.67	-257.00	1,592.13	1,593.15	2.83	0.88	-2.68
9,050.00	91.21	88.07	7,098.07	-254.04	1,688.08	1,689.09	1.80	1.77	-0.34
9,145.00	92.02	88.36	7,095.39	-251.09	1,783.00	1,783.99	0.91	0.85	0.31
9,240.00	91.20	90.37	7,092.72	-250.03	1,877.95	1,878.94	2.28	-0.86	2.12
9,336.00	90.17	90.13	7,091.57	-250.45	1,973.94	1,974.93	1.10	-1.07	-0.25
9,431.00	89.45	91.48	7,091.89	-251.79	2,068.93	2,069.92	1.61	-0.76	1.42
9,527.00	90.43	91.66	7,091.99	-254.42	2,164.89	2,165.89	1.04	1.02	0.19
9,622.00	92.25	89.67	7,089.77	-255.52	2,259.85	2,260.86	2.84	1.92	-2.09
9,718.00	92.09	89.52	7,086.13	-254.84	2,355.78	2,356.78	0.23	-0.17	-0.16
9,813.00	92.53	90.27	7,082.30	-254.67	2,450.70	2,451.70	0.91	0.46	0.79
9,909.00	91.20	90.78	7,079.18	-255.55	2,546.64	2,547.65	1.48	-1.39	0.53
9,965.00	88.12	91.11	7,079.51	-256.47	2,602.63	2,603.64	5.53	-5.50	0.59
10,004.00	88.31	90.93	7,080.72	-257.16	2,641.60	2,642.61	0.67	0.49	-0.46
10,046.00	91.24	90.47	7,080.89	-257.68	2,683.59	2,684.61	7.06	6.98	-1.10
10,099.00	91.68	90.14	7,079.54	-257.96	2,736.58	2,737.59	1.04	0.83	-0.62
10,195.00	90.96	90.59	7,077.33	-258.57	2,832.55	2,833.56	0.88	-0.75	0.47
10,290.00	91.47	90.82	7,075.31	-259.74	2,927.52	2,928.54	0.59	0.54	0.24
10,385.00	89.76	92.52	7,074.29	-262.51	3,022.46	3,023.49	2.54	-1.80	1.79
10,481.00	91.14	90.81	7,073.54	-265.30	3,118.42	3,119.46	2.29	1.44	-1.78
10,576.00	92.31	90.42	7,070.68	-266.32	3,213.37	3,214.41	1.30	1.23	-0.41
10,667.00	91.15	91.19	7,067.93	-267.59	3,304.31	3,305.36	1.53	-1.27	0.85
10,759.00	90.45	89.23	7,066.65	-267.93	3,396.30	3,397.35	2.26	-0.76	-2.13
10,851.00	90.65	89.64	7,065.76	-267.02	3,488.29	3,489.33	0.50	0.22	0.45
10,943.00	89.18	88.22	7,065.90	-265.31	3,580.27	3,581.30	2.22	-1.60	-1.54
11,035.00	88.72	89.53	7,067.59	-263.50	3,672.23	3,673.26	1.51	-0.50	1.42
11,126.00	88.33	89.69	7,069.93	-262.88	3,763.20	3,764.22	0.46	-0.43	0.18

# Survey Report

<b>Company:</b>	HighPoint Resources	<b>Local Co-ordinate Reference:</b>	Well Grinde 01-64-05-1724B
<b>Project:</b>	Weld County, CO (NAD83)	<b>TVD Reference:</b>	KB @ 5041.50usft (Cade 23)
<b>Site:</b>	Sec 05-T01N-R64W Grinde Pad	<b>MD Reference:</b>	KB @ 5041.50usft (Cade 23)
<b>Well:</b>	Grinde 01-64-05-1724B	<b>North Reference:</b>	True
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Wellbore #1	<b>Database:</b>	EDM 5000.15 Single User Db

Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
11,218.00	90.82	88.67	7,070.61	-261.56	3,855.18	3,856.20	2.92	2.71	-1.11	
11,310.00	92.14	88.39	7,068.24	-259.21	3,947.12	3,948.13	1.47	1.43	-0.30	
11,401.00	91.31	89.10	7,065.50	-257.21	4,038.05	4,039.05	1.20	-0.91	0.78	
11,493.00	90.77	90.61	7,063.83	-256.98	4,130.03	4,131.03	1.74	-0.59	1.64	
11,585.00	90.84	89.78	7,062.53	-257.29	4,222.02	4,223.02	0.91	0.08	-0.90	
11,677.00	90.40	91.23	7,061.54	-258.10	4,314.01	4,315.01	1.65	-0.48	1.58	
11,769.00	89.99	90.39	7,061.22	-259.40	4,406.00	4,407.01	1.02	-0.45	-0.91	
11,861.00	90.17	90.78	7,061.10	-260.34	4,498.00	4,499.00	0.47	0.20	0.42	
11,953.00	90.21	91.37	7,060.79	-262.07	4,589.98	4,590.99	0.64	0.04	0.64	
12,048.00	90.02	91.41	7,060.60	-264.37	4,684.95	4,685.97	0.20	-0.20	0.04	
12,143.00	89.69	91.53	7,060.84	-266.81	4,779.92	4,780.95	0.37	-0.35	0.13	
12,238.00	90.02	92.35	7,061.08	-270.03	4,874.86	4,875.91	0.93	0.35	0.86	
12,293.17	89.96	91.57	7,061.09	-271.92	4,930.00	4,931.05	1.42	-0.12	-1.41	
Cross @ 12293.17' MD										
12,333.00	89.91	91.01	7,061.14	-272.81	4,969.82	4,970.88	1.42	-0.12	-1.41	
12,428.00	90.72	90.31	7,060.62	-273.91	5,064.81	5,065.87	1.13	0.85	-0.74	
12,524.00	90.74	91.48	7,059.39	-275.41	5,160.79	5,161.85	1.22	0.02	1.22	
12,620.00	90.78	90.44	7,058.12	-277.01	5,256.77	5,257.84	1.08	0.04	-1.08	
12,714.00	90.37	90.32	7,057.18	-277.64	5,350.76	5,351.83	0.45	-0.44	-0.13	
12,810.00	91.42	92.24	7,055.68	-279.78	5,446.72	5,447.80	2.28	1.09	2.00	
12,906.00	90.72	91.33	7,053.88	-282.77	5,542.65	5,543.74	1.20	-0.73	-0.95	
13,001.00	90.68	88.29	7,052.72	-282.46	5,637.63	5,638.72	3.20	-0.04	-3.20	
13,096.00	88.67	88.36	7,053.26	-279.68	5,732.59	5,733.66	2.12	-2.12	0.07	
13,191.00	88.92	89.33	7,055.26	-277.77	5,827.55	5,828.61	1.05	0.26	1.02	
13,287.00	89.12	89.09	7,056.90	-276.44	5,923.52	5,924.58	0.33	0.21	-0.25	
13,382.00	89.05	89.76	7,058.42	-275.49	6,018.51	6,019.56	0.71	-0.07	0.71	
13,477.00	88.91	90.47	7,060.11	-275.68	6,113.49	6,114.55	0.76	-0.15	0.75	
13,573.00	89.82	87.67	7,061.18	-274.12	6,209.46	6,210.51	3.07	0.95	-2.92	
13,669.00	90.26	87.54	7,061.11	-270.11	6,305.38	6,306.41	0.48	0.46	-0.14	
13,765.00	90.32	88.39	7,060.62	-266.70	6,401.31	6,402.33	0.89	0.06	0.89	
13,860.00	90.95	87.13	7,059.57	-262.99	6,496.23	6,497.24	1.48	0.66	-1.33	
13,955.00	91.11	89.86	7,057.86	-260.49	6,591.18	6,592.17	2.88	0.17	2.87	
14,051.00	91.37	90.63	7,055.78	-260.90	6,687.15	6,688.14	0.85	0.27	0.80	
14,146.00	90.97	90.85	7,053.84	-262.13	6,782.12	6,783.12	0.48	-0.42	0.23	
14,242.00	91.57	92.63	7,051.72	-265.04	6,878.05	6,879.06	1.96	0.63	1.85	
14,338.00	91.72	91.95	7,048.96	-268.88	6,973.93	6,974.96	0.73	0.16	-0.71	
14,433.00	89.43	91.44	7,048.01	-271.69	7,068.88	7,069.91	2.47	-2.41	-0.54	
14,528.00	89.16	91.08	7,049.18	-273.78	7,163.85	7,164.89	0.47	-0.28	-0.38	
14,624.00	88.72	90.45	7,050.95	-275.06	7,259.83	7,260.87	0.80	-0.46	-0.66	
14,719.00	89.88	90.64	7,052.11	-275.96	7,354.81	7,355.86	1.24	1.22	0.20	
14,814.00	89.02	89.84	7,053.02	-276.36	7,449.81	7,450.85	1.24	-0.91	-0.84	
14,911.00	91.13	88.98	7,052.90	-275.36	7,546.79	7,547.84	2.35	2.18	-0.89	
15,006.00	90.43	89.52	7,051.60	-274.12	7,641.78	7,642.81	0.93	-0.74	0.57	
15,101.00	90.20	90.26	7,051.08	-273.94	7,736.77	7,737.81	0.82	-0.24	0.78	

## Survey Report

<b>Company:</b>	HighPoint Resources	<b>Local Co-ordinate Reference:</b>	Well Grinde 01-64-05-1724B
<b>Project:</b>	Weld County, CO (NAD83)	<b>TVD Reference:</b>	KB @ 5041.50usft (Cade 23)
<b>Site:</b>	Sec 05-T01N-R64W Grinde Pad	<b>MD Reference:</b>	KB @ 5041.50usft (Cade 23)
<b>Well:</b>	Grinde 01-64-05-1724B	<b>North Reference:</b>	True
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Wellbore #1	<b>Database:</b>	EDM 5000.15 Single User Db

Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
15,197.00	89.41	88.97	7,051.41	-273.29	7,832.77	7,833.80	1.58	-0.82	-1.34	
15,292.00	91.15	89.33	7,050.94	-271.88	7,927.75	7,928.78	1.87	1.83	0.38	
15,387.00	90.67	88.38	7,049.44	-269.98	8,022.72	8,023.74	1.12	-0.51	-1.00	
15,481.00	90.66	89.91	7,048.34	-268.58	8,116.70	8,117.71	1.63	-0.01	1.63	
15,576.00	91.94	89.95	7,046.19	-268.46	8,211.67	8,212.69	1.35	1.35	0.04	
15,671.00	91.93	89.56	7,042.98	-268.06	8,306.62	8,307.63	0.41	-0.01	-0.41	
15,767.00	92.02	89.14	7,039.67	-266.97	8,402.56	8,403.56	0.45	0.09	-0.44	
15,862.00	92.64	90.85	7,035.81	-266.96	8,497.47	8,498.48	1.91	0.65	1.80	
15,957.00	92.50	90.27	7,031.55	-267.89	8,592.37	8,593.38	0.63	-0.15	-0.61	
16,052.00	90.49	89.74	7,029.07	-267.90	8,687.33	8,688.34	2.19	-2.12	-0.56	
16,146.00	91.38	91.46	7,027.54	-268.88	8,781.31	8,782.32	2.06	0.95	1.83	
16,241.00	91.80	91.36	7,024.90	-271.22	8,876.25	8,877.26	0.45	0.44	-0.11	
16,336.00	92.07	91.54	7,021.69	-273.62	8,971.16	8,972.19	0.34	0.28	0.19	
16,431.00	90.34	91.17	7,019.70	-275.87	9,066.11	9,067.15	1.86	-1.82	-0.39	
16,526.00	90.63	92.91	7,018.89	-279.25	9,161.04	9,162.09	1.86	0.31	1.83	
16,621.00	88.79	92.17	7,019.37	-283.46	9,255.94	9,257.01	2.09	-1.94	-0.78	
16,716.00	88.66	91.69	7,021.49	-286.66	9,350.87	9,351.94	0.52	-0.14	-0.51	
16,747.00	88.10	89.63	7,022.36	-287.01	9,381.85	9,382.93	6.88	-1.81	-6.65	
16,812.00	88.48	88.57	7,024.30	-285.99	9,446.81	9,447.88	1.73	0.58	-1.63	
16,844.00	90.20	88.32	7,024.67	-285.12	9,478.80	9,479.87	5.43	5.38	-0.78	
16,907.00	89.96	89.62	7,024.58	-283.99	9,541.79	9,542.85	2.10	-0.38	2.06	
17,002.00	90.13	88.81	7,024.51	-282.69	9,636.78	9,637.83	0.87	0.18	-0.85	
17,097.00	89.99	89.31	7,024.41	-281.13	9,731.76	9,732.81	0.55	-0.15	0.53	
17,104.00	89.96	90.03	7,024.41	-281.09	9,738.76	9,739.81	10.29	-0.43	10.29	
Last MWD Survey @ 17104' MD										
17,177.00	89.96	90.03	7,024.46	-281.13	9,811.76	9,812.81	0.00	0.00	0.00	
Projection to TD @ 17177' MD 1908.5' FNL/ 400' FEL										

Design Targets										
Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude Longitude		
30° Inclination @ 6943.1 - actual wellpath misses target center by 0.03usft at 6943.17usft MD (6895.44 TVD, -221.33 N, -334.34 E) - Point	0.00	0.00	6,895.43	-221.30	-334.33	1,274,238.03	3,256,228.64	40.082543 -104.584275		
Cross @ 12293.17' MD - actual wellpath hits target center - Point	0.00	0.00	7,061.09	-271.92	4,930.00	1,274,241.85	3,261,493.21	40.082402 -104.565461		
70° Inclination @ 7231.7 - actual wellpath hits target center - Point	0.00	0.00	7,081.48	-252.71	-123.96	1,274,208.80	3,256,439.32	40.082456 -104.583523		



## Survey Report

<b>Company:</b>	HighPoint Resources	<b>Local Co-ordinate Reference:</b>	Well Grinde 01-64-05-1724B
<b>Project:</b>	Weld County, CO (NAD83)	<b>TVD Reference:</b>	KB @ 5041.50usft (Cade 23)
<b>Site:</b>	Sec 05-T01N-R64W Grinde Pad	<b>MD Reference:</b>	KB @ 5041.50usft (Cade 23)
<b>Well:</b>	Grinde 01-64-05-1724B	<b>North Reference:</b>	True
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Wellbore #1	<b>Database:</b>	EDM 5000.15 Single User Db

### Design Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
1,488.50	1,483.61	-52.94	-87.62	Tie into Surface Surveys
1,622.00	1,615.98	-60.62	-103.15	First MWD Survey @ 1622' MD
6,943.17	6,895.44	-221.33	-334.33	30° Inclination @ 6943.17' MD
7,231.73	7,081.48	-252.71	-123.96	70° Inclination @ 7231.73' MD
12,293.17	7,061.09	-271.92	4,930.00	Cross @ 12293.17' MD
17,104.00	7,024.41	-281.09	9,738.76	Last MWD Survey @ 17104' MD
17,177.00	7,024.46	-281.13	9,811.76	Projection to TD @ 17177' MD 1908.5' FNL/ 400' FEL

Checked By: \_\_\_\_\_ Approved By: \_\_\_\_\_ Date: \_\_\_\_\_