



PROJECT DETAILS: Weld County, CO NAD 83

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

Project: Weld County, CO NAD 83  
Site: Critter Creek 15 SW Pad  
Well: Critter Creek 15-6104BW  
Wellbore: OH  
Design: Plan 1



Azimuths to True North  
Magnetic North: 8.28°



Magnetic Field  
Strength: 52792.3snT  
Dip Angle: 67.20°  
Date: 4/20/2018  
Model: HDGM

Plan: Plan 1 (Critter Creek 15-6104BW/OH)

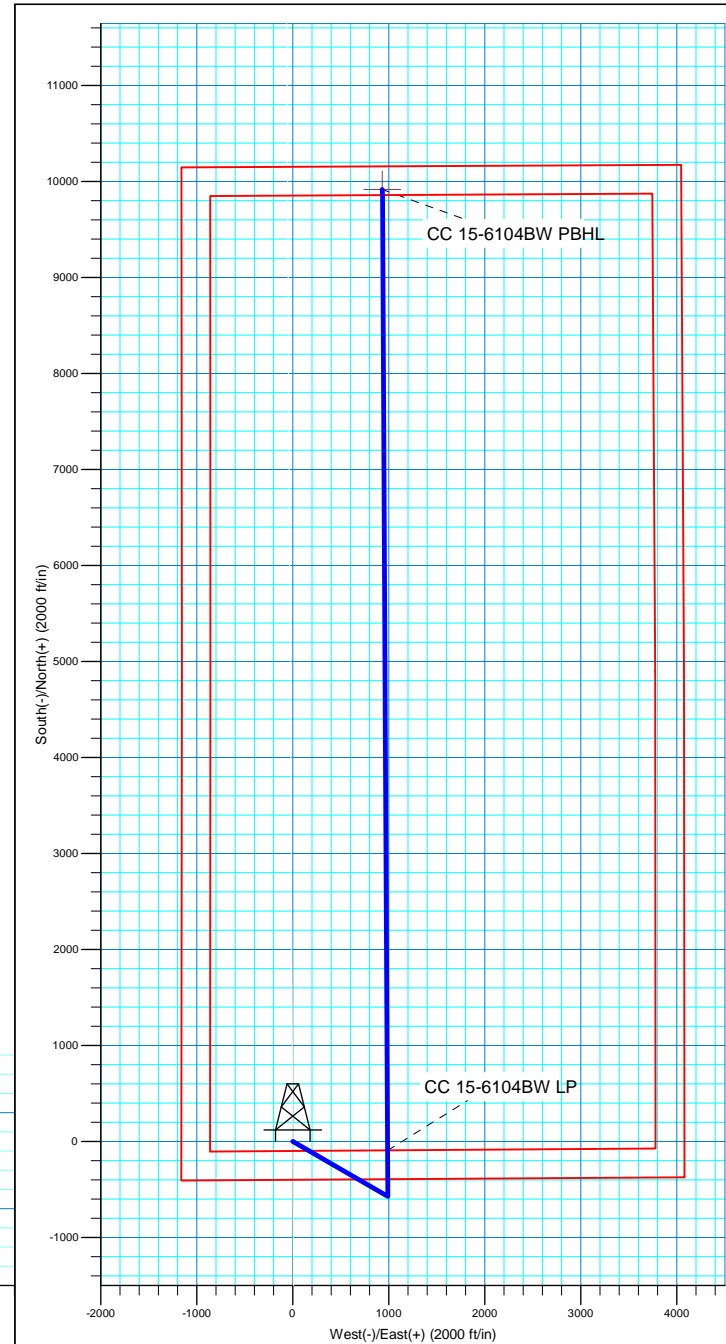
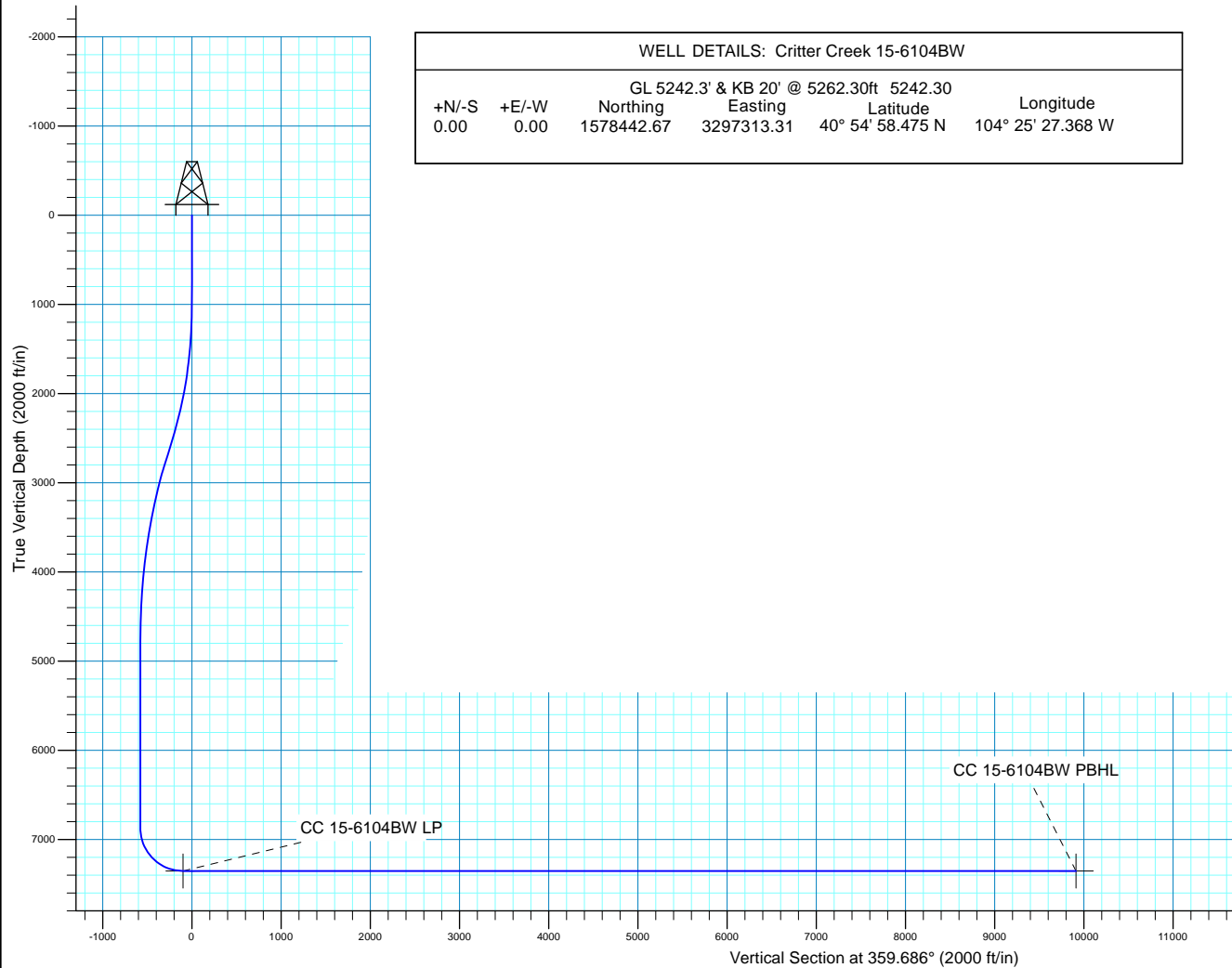
Created By: Seth Burstad

SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect
0.00	0.00	0.000	0.00	0.00	0.00	0.00	0.00	0.00
1000.00	0.00	0.000	1000.00	0.00	0.00	0.00	0.00	0.00
2576.80	31.54	119.963	2498.38	-211.31	366.55	2.00	119.96	-213.31
2876.89	31.54	119.963	2754.15	-289.70	502.53	0.00	0.00	-292.45
4979.28	0.00	0.000	4751.99	-571.44	991.26	1.50	180.00	-576.86
7103.83	0.00	0.000	6876.54	-571.44	991.26	0.00	0.00	-576.86
7853.83	90.00	359.686	7354.00	-93.98	988.65	12.00	359.69	-99.40
17865.39	90.00	359.686	7354.00	9917.43	933.82	0.00	0.00	9912.16

WELL DETAILS: Critter Creek 15-6104BW

GL 5242.3' & KB 20' @ 5262.30ft 5242.30						Longitude	
+N/-S	+E/-W	Northing	Easting	Latitude			
0.00	0.00	1578442.67	3297313.31	40° 54' 58.475 N		104° 25' 27.368 W	





# HighPoint Resources

Weld County, CO NAD 83  
Crittter Creek 15 SW Pad  
Crittter Creek 15-6104BW

OH

Plan: Plan 1

## Standard Planning Report

20 April, 2018



<b>Database:</b>	Casper District	<b>Local Co-ordinate Reference:</b>	Well Critter Creek 15-6104BW
<b>Company:</b>	HighPoint Resources	<b>TVD Reference:</b>	GL 5242.3' & KB 20' @ 5262.30ft
<b>Project:</b>	Weld County, CO NAD 83	<b>MD Reference:</b>	GL 5242.3' & KB 20' @ 5262.30ft
<b>Site:</b>	Critter Creek 15 SW Pad	<b>North Reference:</b>	True
<b>Well:</b>	Critter Creek 15-6104BW	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	Plan 1		

<b>Project</b>	Weld County, CO NAD 83		
<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						Critter Creek 15 SW Pad, Site Center : Critter Creek 15-6104BE					
Site Position:				Northing:		1,578,441.59 usft		Latitude:		40° 54' 58.471 N	
From:		Lat/Long		Easting:		3,297,253.35 usft		Longitude:		104° 25' 28.150 W	
Position Uncertainty:		0.00 ft		Slot Radius:		13.200 in		Grid Convergence:		0.69	

Well	Critter Creek 15-6104BW, 400' FSL 1160' FWL Sec 15 T11N R63W					
Well Position	+N/-S	0.35 ft	Northing:	1,578,442.67 usft	Latitude:	40° 54' 58.475 N
	+E/-W	59.98 ft	Easting:	3,297,313.32 usft	Longitude:	104° 25' 27.368 W
Position Uncertainty		0.00 ft	Wellhead Elevation:	0.00 ft	Ground Level:	5,242.30 ft

<b>Wellbore</b>	OH				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	HDGM	4/20/2018	8.28	67.20	52,792

<b>Design</b>	Plan 1			
<b>Audit Notes:</b>				
<b>Version:</b>	<b>Phase:</b>	PLAN	<b>Tie On Depth:</b>	0.00
<b>Vertical Section:</b>	<b>Depth From (TVD) (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Direction (°)</b>
	0.00	0.00	0.00	359.686

<b>Plan Sections</b>										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.00	0.00	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,000.00	0.00	0.000	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,576.80	31.54	119.963	2,498.38	-211.31	366.55	2.00	2.00	0.00	119.96	
2,876.89	31.54	119.963	2,754.15	-289.70	502.53	0.00	0.00	0.00	0.00	
4,979.28	0.00	0.000	4,751.99	-571.44	991.26	1.50	-1.50	0.00	180.00	
7,103.83	0.00	0.000	6,876.54	-571.44	991.26	0.00	0.00	0.00	0.00	
7,853.83	90.00	359.686	7,354.00	-93.98	988.65	12.00	12.00	-0.04	359.69	
17,865.39	90.00	359.686	7,354.00	9,917.42	933.82	0.00	0.00	0.00	0.00	CC 15-6104BW PBHI

<b>Database:</b>	Casper District	<b>Local Co-ordinate Reference:</b>	Well Critter Creek 15-6104BW
<b>Company:</b>	HighPoint Resources	<b>TVD Reference:</b>	GL 5242.3' & KB 20' @ 5262.30ft
<b>Project:</b>	Weld County, CO NAD 83	<b>MD Reference:</b>	GL 5242.3' & KB 20' @ 5262.30ft
<b>Site:</b>	Critter Creek 15 SW Pad	<b>North Reference:</b>	True
<b>Well:</b>	Critter Creek 15-6104BW	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	Plan 1		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
0.00	0.00	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.00	0.000	100.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.000	200.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.000	300.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.00	0.000	400.00	0.00	0.00	0.00	0.00	0.00	0.00
500.00	0.00	0.000	500.00	0.00	0.00	0.00	0.00	0.00	0.00
600.00	0.00	0.000	600.00	0.00	0.00	0.00	0.00	0.00	0.00
700.00	0.00	0.000	700.00	0.00	0.00	0.00	0.00	0.00	0.00
800.00	0.00	0.000	800.00	0.00	0.00	0.00	0.00	0.00	0.00
900.00	0.00	0.000	900.00	0.00	0.00	0.00	0.00	0.00	0.00
1,000.00	0.00	0.000	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Start Build 2.00</b>									
1,100.00	2.00	119.963	1,099.98	-0.87	1.51	-0.88	2.00	2.00	0.00
1,200.00	4.00	119.963	1,199.84	-3.49	6.05	-3.52	2.00	2.00	0.00
1,300.00	6.00	119.963	1,299.45	-7.84	13.60	-7.91	2.00	2.00	0.00
1,400.00	8.00	119.963	1,398.70	-13.92	24.15	-14.06	2.00	2.00	0.00
1,500.00	10.00	119.963	1,497.47	-21.74	37.71	-21.94	2.00	2.00	0.00
1,522.90	10.46	119.963	1,520.00	-23.77	41.23	-23.99	2.00	2.00	0.00
<b>Fox Hills-Pierre contact</b>									
1,600.00	12.00	119.963	1,595.62	-31.27	54.24	-31.56	2.00	2.00	0.00
1,700.00	14.00	119.963	1,693.06	-42.50	73.72	-42.90	2.00	2.00	0.00
1,800.00	16.00	119.963	1,789.64	-55.43	96.15	-55.95	2.00	2.00	0.00
1,900.00	18.00	119.963	1,885.27	-70.03	121.47	-70.69	2.00	2.00	0.00
2,000.00	20.00	119.963	1,979.82	-86.29	149.68	-87.11	2.00	2.00	0.00
2,100.00	22.00	119.963	2,073.17	-104.18	180.72	-105.17	2.00	2.00	0.00
2,200.00	24.00	119.963	2,165.21	-123.70	214.57	-124.87	2.00	2.00	0.00
2,300.00	26.00	119.963	2,255.84	-144.80	251.18	-146.18	2.00	2.00	0.00
2,400.00	28.00	119.963	2,344.94	-167.48	290.51	-169.06	2.00	2.00	0.00
2,500.00	30.00	119.963	2,432.39	-191.69	332.51	-193.51	2.00	2.00	0.00
2,576.80	31.54	119.963	2,498.38	-211.31	366.55	-213.31	2.00	2.00	0.00
<b>Start 300.09 hold at 2576.80 MD</b>									
2,600.00	31.54	119.963	2,518.16	-217.37	377.06	-219.43	0.00	0.00	0.00
2,700.00	31.54	119.963	2,603.39	-243.49	422.38	-245.80	0.00	0.00	0.00
2,800.00	31.54	119.963	2,688.62	-269.61	467.69	-272.17	0.00	0.00	0.00
2,876.89	31.54	119.963	2,754.15	-289.70	502.53	-292.45	0.00	0.00	0.00
<b>Start Drop -1.50</b>									
2,900.00	31.19	119.963	2,773.89	-295.70	512.95	-298.51	1.50	-1.50	0.00
3,000.00	29.69	119.963	2,860.10	-321.01	556.84	-324.05	1.50	-1.50	0.00
3,100.00	28.19	119.963	2,947.61	-345.17	598.76	-348.45	1.50	-1.50	0.00
3,200.00	26.69	119.963	3,036.36	-368.19	638.68	-371.68	1.50	-1.50	0.00
3,300.00	25.19	119.963	3,126.28	-390.03	676.58	-393.73	1.50	-1.50	0.00
3,400.00	23.69	119.963	3,217.32	-410.69	712.42	-414.59	1.50	-1.50	0.00
3,406.20	23.60	119.963	3,223.00	-411.94	714.57	-415.85	1.50	-1.50	0.00
<b>Pierre A</b>									
3,500.00	22.19	119.963	3,309.41	-430.16	746.18	-434.24	1.50	-1.50	0.00
3,600.00	20.69	119.963	3,402.49	-448.41	777.85	-452.67	1.50	-1.50	0.00
3,700.00	19.19	119.963	3,496.49	-465.44	807.39	-469.86	1.50	-1.50	0.00
3,800.00	17.69	119.963	3,591.35	-481.24	834.80	-485.81	1.50	-1.50	0.00
3,900.00	16.19	119.963	3,687.01	-495.79	860.04	-500.50	1.50	-1.50	0.00
4,000.00	14.69	119.963	3,783.40	-509.09	883.10	-513.92	1.50	-1.50	0.00
4,100.00	13.19	119.963	3,880.45	-521.12	903.97	-526.06	1.50	-1.50	0.00
4,200.00	11.69	119.963	3,978.10	-531.88	922.63	-536.92	1.50	-1.50	0.00
4,300.00	10.19	119.963	4,076.28	-541.35	939.07	-546.49	1.50	-1.50	0.00
4,399.06	8.70	119.963	4,174.00	-549.47	953.16	-554.69	1.50	-1.50	0.00

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<b>Project:</b>	Weld County, CO NAD 83	<b>MD Reference:</b>	GL 5242.3' & KB 20' @ 5262.30ft
<b>Site:</b>	Critter Creek 15 SW Pad	<b>North Reference:</b>	True
<b>Well:</b>	Critter Creek 15-6104BW	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	Plan 1		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
<b>Parkman</b>									
4,400.00	8.69	119.963	4,174.93	-549.54	953.28	-554.76	1.50	-1.50	0.00
4,500.00	7.19	119.963	4,273.96	-556.44	965.24	-561.72	1.50	-1.50	0.00
4,600.00	5.69	119.963	4,373.33	-562.04	974.96	-567.38	1.50	-1.50	0.00
4,700.00	4.19	119.963	4,472.96	-566.34	982.42	-571.72	1.50	-1.50	0.00
4,800.00	2.69	119.963	4,572.77	-569.34	987.62	-574.74	1.50	-1.50	0.00
4,900.00	1.19	119.963	4,672.71	-571.03	990.55	-576.45	1.50	-1.50	0.00
4,979.28	0.00	0.000	4,751.99	-571.44	991.26	-576.86	1.50	-1.50	0.00
<b>Start 2124.55 hold at 4979.28 MD</b>									
5,000.00	0.00	0.000	4,772.71	-571.44	991.26	-576.86	0.00	0.00	0.00
5,100.00	0.00	0.000	4,872.71	-571.44	991.26	-576.86	0.00	0.00	0.00
5,200.00	0.00	0.000	4,972.71	-571.44	991.26	-576.86	0.00	0.00	0.00
5,300.00	0.00	0.000	5,072.71	-571.44	991.26	-576.86	0.00	0.00	0.00
5,400.00	0.00	0.000	5,172.71	-571.44	991.26	-576.86	0.00	0.00	0.00
5,500.00	0.00	0.000	5,272.71	-571.44	991.26	-576.86	0.00	0.00	0.00
5,600.00	0.00	0.000	5,372.71	-571.44	991.26	-576.86	0.00	0.00	0.00
5,700.00	0.00	0.000	5,472.71	-571.44	991.26	-576.86	0.00	0.00	0.00
5,800.00	0.00	0.000	5,572.71	-571.44	991.26	-576.86	0.00	0.00	0.00
5,900.00	0.00	0.000	5,672.71	-571.44	991.26	-576.86	0.00	0.00	0.00
6,000.00	0.00	0.000	5,772.71	-571.44	991.26	-576.86	0.00	0.00	0.00
6,100.00	0.00	0.000	5,872.71	-571.44	991.26	-576.86	0.00	0.00	0.00
6,200.00	0.00	0.000	5,972.71	-571.44	991.26	-576.86	0.00	0.00	0.00
6,300.00	0.00	0.000	6,072.71	-571.44	991.26	-576.86	0.00	0.00	0.00
6,400.00	0.00	0.000	6,172.71	-571.44	991.26	-576.86	0.00	0.00	0.00
6,500.00	0.00	0.000	6,272.71	-571.44	991.26	-576.86	0.00	0.00	0.00
6,600.00	0.00	0.000	6,372.71	-571.44	991.26	-576.86	0.00	0.00	0.00
6,700.00	0.00	0.000	6,472.71	-571.44	991.26	-576.86	0.00	0.00	0.00
6,800.00	0.00	0.000	6,572.71	-571.44	991.26	-576.86	0.00	0.00	0.00
6,900.00	0.00	0.000	6,672.71	-571.44	991.26	-576.86	0.00	0.00	0.00
7,000.00	0.00	0.000	6,772.71	-571.44	991.26	-576.86	0.00	0.00	0.00
7,100.00	0.00	0.000	6,872.71	-571.44	991.26	-576.86	0.00	0.00	0.00
7,103.83	0.00	0.000	6,876.54	-571.44	991.26	-576.86	0.00	0.00	0.00
<b>Start DLS 12.00 TFO 359.69</b>									
7,200.00	11.54	359.686	6,972.06	-561.79	991.21	-567.21	12.00	12.00	0.00
7,300.00	23.54	359.686	7,067.24	-531.71	991.04	-537.13	12.00	12.00	0.00
7,400.00	35.54	359.686	7,154.08	-482.49	990.77	-487.92	12.00	12.00	0.00
7,471.59	44.13	359.686	7,209.00	-436.68	990.52	-442.10	12.00	12.00	0.00
<b>Sharon Springs</b>									
7,500.00	47.54	359.686	7,228.79	-416.30	990.41	-421.72	12.00	12.00	0.00
7,510.82	48.84	359.686	7,236.00	-408.24	990.37	-413.66	12.00	12.00	0.00
<b>Niobrara A Chalk</b>									
7,549.07	53.43	359.686	7,260.00	-378.46	990.20	-383.88	12.00	12.00	0.00
<b>Niobrara A Marl</b>									
7,554.14	54.04	359.686	7,263.00	-374.37	990.18	-379.79	12.00	12.00	0.00
<b>Nio B1 Chalk</b>									
7,600.00	59.54	359.686	7,288.11	-336.02	989.97	-341.44	12.00	12.00	0.00
7,611.88	60.97	359.686	7,294.00	-325.71	989.91	-331.13	12.00	12.00	0.00
<b>Nio B1 Marl</b>									
7,652.06	65.79	359.686	7,312.00	-289.80	989.72	-295.22	12.00	12.00	0.00
<b>Niobrara B Chalk</b>									
7,700.00	71.54	359.686	7,329.44	-245.16	989.47	-250.58	12.00	12.00	0.00
7,755.92	78.25	359.686	7,344.00	-191.21	989.18	-196.63	12.00	12.00	0.00

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<b>Project:</b>	Weld County, CO NAD 83	<b>MD Reference:</b>	GL 5242.3' & KB 20' @ 5262.30ft
<b>Site:</b>	Critter Creek 15 SW Pad	<b>North Reference:</b>	True
<b>Well:</b>	Critter Creek 15-6104BW	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	Plan 1		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
<b>Niobrara B Marl</b>									
7,800.00	83.54	359.686	7,350.97	-147.70	988.94	-153.12	12.00	12.00	0.00
7,851.69	89.74	359.686	7,354.00	-96.13	988.66	-101.55	12.00	12.00	0.00
<b>Niobrara B Landing Target - TD</b>									
7,853.83	90.00	359.686	7,354.00	-93.98	988.65	-99.40	12.00	12.00	0.00
<b>Start 10011.55 hold at 7853.83 MD</b>									
7,900.00	90.00	359.686	7,354.00	-47.82	988.39	-53.23	0.00	0.00	0.00
8,000.00	90.00	359.686	7,354.00	52.18	987.84	46.77	0.00	0.00	0.00
8,100.00	90.00	359.686	7,354.00	152.18	987.30	146.77	0.00	0.00	0.00
8,200.00	90.00	359.686	7,354.00	252.18	986.75	246.77	0.00	0.00	0.00
8,300.00	90.00	359.686	7,354.00	352.18	986.20	346.77	0.00	0.00	0.00
8,400.00	90.00	359.686	7,354.00	452.18	985.65	446.77	0.00	0.00	0.00
8,500.00	90.00	359.686	7,354.00	552.18	985.11	546.77	0.00	0.00	0.00
8,600.00	90.00	359.686	7,354.00	652.17	984.56	646.77	0.00	0.00	0.00
8,700.00	90.00	359.686	7,354.00	752.17	984.01	746.77	0.00	0.00	0.00
8,800.00	90.00	359.686	7,354.00	852.17	983.46	846.77	0.00	0.00	0.00
8,900.00	90.00	359.686	7,354.00	952.17	982.92	946.77	0.00	0.00	0.00
9,000.00	90.00	359.686	7,354.00	1,052.17	982.37	1,046.77	0.00	0.00	0.00
9,100.00	90.00	359.686	7,354.00	1,152.17	981.82	1,146.77	0.00	0.00	0.00
9,200.00	90.00	359.686	7,354.00	1,252.16	981.27	1,246.77	0.00	0.00	0.00
9,300.00	90.00	359.686	7,354.00	1,352.16	980.73	1,346.77	0.00	0.00	0.00
9,400.00	90.00	359.686	7,354.00	1,452.16	980.18	1,446.77	0.00	0.00	0.00
9,500.00	90.00	359.686	7,354.00	1,552.16	979.63	1,546.77	0.00	0.00	0.00
9,600.00	90.00	359.686	7,354.00	1,652.16	979.08	1,646.77	0.00	0.00	0.00
9,700.00	90.00	359.686	7,354.00	1,752.16	978.54	1,746.77	0.00	0.00	0.00
9,800.00	90.00	359.686	7,354.00	1,852.16	977.99	1,846.77	0.00	0.00	0.00
9,900.00	90.00	359.686	7,354.00	1,952.15	977.44	1,946.77	0.00	0.00	0.00
10,000.00	90.00	359.686	7,354.00	2,052.15	976.89	2,046.77	0.00	0.00	0.00
10,100.00	90.00	359.686	7,354.00	2,152.15	976.34	2,146.77	0.00	0.00	0.00
10,200.00	90.00	359.686	7,354.00	2,252.15	975.80	2,246.77	0.00	0.00	0.00
10,300.00	90.00	359.686	7,354.00	2,352.15	975.25	2,346.77	0.00	0.00	0.00
10,400.00	90.00	359.686	7,354.00	2,452.15	974.70	2,446.77	0.00	0.00	0.00
10,500.00	90.00	359.686	7,354.00	2,552.15	974.15	2,546.77	0.00	0.00	0.00
10,600.00	90.00	359.686	7,354.00	2,652.14	973.61	2,646.77	0.00	0.00	0.00
10,700.00	90.00	359.686	7,354.00	2,752.14	973.06	2,746.77	0.00	0.00	0.00
10,800.00	90.00	359.686	7,354.00	2,852.14	972.51	2,846.77	0.00	0.00	0.00
10,900.00	90.00	359.686	7,354.00	2,952.14	971.96	2,946.77	0.00	0.00	0.00
11,000.00	90.00	359.686	7,354.00	3,052.14	971.42	3,046.77	0.00	0.00	0.00
11,100.00	90.00	359.686	7,354.00	3,152.14	970.87	3,146.77	0.00	0.00	0.00
11,200.00	90.00	359.686	7,354.00	3,252.14	970.32	3,246.77	0.00	0.00	0.00
11,300.00	90.00	359.686	7,354.00	3,352.13	969.77	3,346.77	0.00	0.00	0.00
11,400.00	90.00	359.686	7,354.00	3,452.13	969.23	3,446.77	0.00	0.00	0.00
11,500.00	90.00	359.686	7,354.00	3,552.13	968.68	3,546.77	0.00	0.00	0.00
11,600.00	90.00	359.686	7,354.00	3,652.13	968.13	3,646.77	0.00	0.00	0.00
11,700.00	90.00	359.686	7,354.00	3,752.13	967.58	3,746.77	0.00	0.00	0.00
11,800.00	90.00	359.686	7,354.00	3,852.13	967.04	3,846.77	0.00	0.00	0.00
11,900.00	90.00	359.686	7,354.00	3,952.12	966.49	3,946.77	0.00	0.00	0.00
12,000.00	90.00	359.686	7,354.00	4,052.12	965.94	4,046.77	0.00	0.00	0.00
12,100.00	90.00	359.686	7,354.00	4,152.12	965.39	4,146.77	0.00	0.00	0.00
12,200.00	90.00	359.686	7,354.00	4,252.12	964.84	4,246.77	0.00	0.00	0.00
12,300.00	90.00	359.686	7,354.00	4,352.12	964.30	4,346.77	0.00	0.00	0.00
12,400.00	90.00	359.686	7,354.00	4,452.12	963.75	4,446.77	0.00	0.00	0.00
12,500.00	90.00	359.686	7,354.00	4,552.12	963.20	4,546.77	0.00	0.00	0.00

<b>Database:</b>	Casper District	<b>Local Co-ordinate Reference:</b>	Well Critter Creek 15-6104BW
<b>Company:</b>	HighPoint Resources	<b>TVD Reference:</b>	GL 5242.3' & KB 20' @ 5262.30ft
<b>Project:</b>	Weld County, CO NAD 83	<b>MD Reference:</b>	GL 5242.3' & KB 20' @ 5262.30ft
<b>Site:</b>	Critter Creek 15 SW Pad	<b>North Reference:</b>	True
<b>Well:</b>	Critter Creek 15-6104BW	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	Plan 1		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
12,600.00	90.00	359.686	7,354.00	4,652.11	962.65	4,646.77	0.00	0.00	0.00
12,700.00	90.00	359.686	7,354.00	4,752.11	962.11	4,746.77	0.00	0.00	0.00
12,800.00	90.00	359.686	7,354.00	4,852.11	961.56	4,846.77	0.00	0.00	0.00
12,900.00	90.00	359.686	7,354.00	4,952.11	961.01	4,946.77	0.00	0.00	0.00
13,000.00	90.00	359.686	7,354.00	5,052.11	960.46	5,046.77	0.00	0.00	0.00
13,100.00	90.00	359.686	7,354.00	5,152.11	959.92	5,146.77	0.00	0.00	0.00
13,200.00	90.00	359.686	7,354.00	5,252.11	959.37	5,246.77	0.00	0.00	0.00
13,300.00	90.00	359.686	7,354.00	5,352.10	958.82	5,346.77	0.00	0.00	0.00
13,400.00	90.00	359.686	7,354.00	5,452.10	958.27	5,446.77	0.00	0.00	0.00
13,500.00	90.00	359.686	7,354.00	5,552.10	957.73	5,546.77	0.00	0.00	0.00
13,600.00	90.00	359.686	7,354.00	5,652.10	957.18	5,646.77	0.00	0.00	0.00
13,700.00	90.00	359.686	7,354.00	5,752.10	956.63	5,746.77	0.00	0.00	0.00
13,800.00	90.00	359.686	7,354.00	5,852.10	956.08	5,846.77	0.00	0.00	0.00
13,900.00	90.00	359.686	7,354.00	5,952.09	955.54	5,946.77	0.00	0.00	0.00
14,000.00	90.00	359.686	7,354.00	6,052.09	954.99	6,046.77	0.00	0.00	0.00
14,100.00	90.00	359.686	7,354.00	6,152.09	954.44	6,146.77	0.00	0.00	0.00
14,200.00	90.00	359.686	7,354.00	6,252.09	953.89	6,246.77	0.00	0.00	0.00
14,300.00	90.00	359.686	7,354.00	6,352.09	953.34	6,346.77	0.00	0.00	0.00
14,400.00	90.00	359.686	7,354.00	6,452.09	952.80	6,446.77	0.00	0.00	0.00
14,500.00	90.00	359.686	7,354.00	6,552.09	952.25	6,546.77	0.00	0.00	0.00
14,600.00	90.00	359.686	7,354.00	6,652.08	951.70	6,646.77	0.00	0.00	0.00
14,700.00	90.00	359.686	7,354.00	6,752.08	951.15	6,746.77	0.00	0.00	0.00
14,800.00	90.00	359.686	7,354.00	6,852.08	950.61	6,846.77	0.00	0.00	0.00
14,900.00	90.00	359.686	7,354.00	6,952.08	950.06	6,946.77	0.00	0.00	0.00
15,000.00	90.00	359.686	7,354.00	7,052.08	949.51	7,046.77	0.00	0.00	0.00
15,100.00	90.00	359.686	7,354.00	7,152.08	948.96	7,146.77	0.00	0.00	0.00
15,200.00	90.00	359.686	7,354.00	7,252.08	948.42	7,246.77	0.00	0.00	0.00
15,300.00	90.00	359.686	7,354.00	7,352.07	947.87	7,346.77	0.00	0.00	0.00
15,400.00	90.00	359.686	7,354.00	7,452.07	947.32	7,446.77	0.00	0.00	0.00
15,500.00	90.00	359.686	7,354.00	7,552.07	946.77	7,546.77	0.00	0.00	0.00
15,600.00	90.00	359.686	7,354.00	7,652.07	946.23	7,646.77	0.00	0.00	0.00
15,700.00	90.00	359.686	7,354.00	7,752.07	945.68	7,746.77	0.00	0.00	0.00
15,800.00	90.00	359.686	7,354.00	7,852.07	945.13	7,846.77	0.00	0.00	0.00
15,900.00	90.00	359.686	7,354.00	7,952.06	944.58	7,946.77	0.00	0.00	0.00
16,000.00	90.00	359.686	7,354.00	8,052.06	944.04	8,046.77	0.00	0.00	0.00
16,100.00	90.00	359.686	7,354.00	8,152.06	943.49	8,146.77	0.00	0.00	0.00
16,200.00	90.00	359.686	7,354.00	8,252.06	942.94	8,246.77	0.00	0.00	0.00
16,300.00	90.00	359.686	7,354.00	8,352.06	942.39	8,346.77	0.00	0.00	0.00
16,400.00	90.00	359.686	7,354.00	8,452.06	941.84	8,446.77	0.00	0.00	0.00
16,500.00	90.00	359.686	7,354.00	8,552.06	941.30	8,546.77	0.00	0.00	0.00
16,600.00	90.00	359.686	7,354.00	8,652.05	940.75	8,646.77	0.00	0.00	0.00
16,700.00	90.00	359.686	7,354.00	8,752.05	940.20	8,746.77	0.00	0.00	0.00
16,800.00	90.00	359.686	7,354.00	8,852.05	939.65	8,846.77	0.00	0.00	0.00
16,900.00	90.00	359.686	7,354.00	8,952.05	939.11	8,946.77	0.00	0.00	0.00
17,000.00	90.00	359.686	7,354.00	9,052.05	938.56	9,046.77	0.00	0.00	0.00
17,100.00	90.00	359.686	7,354.00	9,152.05	938.01	9,146.77	0.00	0.00	0.00
17,200.00	90.00	359.686	7,354.00	9,252.05	937.46	9,246.77	0.00	0.00	0.00
17,300.00	90.00	359.686	7,354.00	9,352.04	936.92	9,346.77	0.00	0.00	0.00
17,400.00	90.00	359.686	7,354.00	9,452.04	936.37	9,446.77	0.00	0.00	0.00
17,500.00	90.00	359.686	7,354.00	9,552.04	935.82	9,546.77	0.00	0.00	0.00
17,600.00	90.00	359.686	7,354.00	9,652.04	935.27	9,646.77	0.00	0.00	0.00
17,700.00	90.00	359.686	7,354.00	9,752.04	934.73	9,746.77	0.00	0.00	0.00
17,800.00	90.00	359.686	7,354.00	9,852.04	934.18	9,846.77	0.00	0.00	0.00
17,865.38	90.00	359.686	7,354.00	9,917.42	933.82	9,912.15	0.00	0.00	0.00

<b>Database:</b>	Casper District	<b>Local Co-ordinate Reference:</b>	Well Critter Creek 15-6104BW
<b>Company:</b>	HighPoint Resources	<b>TVD Reference:</b>	GL 5242.3' & KB 20' @ 5262.30ft
<b>Project:</b>	Weld County, CO NAD 83	<b>MD Reference:</b>	GL 5242.3' & KB 20' @ 5262.30ft
<b>Site:</b>	Critter Creek 15 SW Pad	<b>North Reference:</b>	True
<b>Well:</b>	Critter Creek 15-6104BW	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	Plan 1		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
TD at 17865.38									

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
- hit/miss target									
- Shape									
CC 15-6104BW PBHL	0.00	0.000	7,354.00	9,917.42	933.82	1,588,370.67	3,298,126.76	40° 56' 36.463 N	104° 25' 15.200 W
- plan hits target center									
- Point									
CC 15-6104BW LP	0.00	0.000	7,354.00	-93.97	988.65	1,578,360.70	3,298,303.03	40° 54' 57.546 N	104° 25' 14.491 W
- plan misses target center by 0.01ft at 7853.84ft MD (7354.00 TVD, -93.97 N, 988.65 E)									
- Point									

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
1,522.90	1,520.00	Fox Hills-Pierre contact				
3,406.20	3,223.00	Pierre A				
4,399.06	4,174.00	Parkman				
7,471.59	7,209.00	Sharon Springs				
7,510.82	7,236.00	Niobrara A Chalk				
7,549.07	7,260.00	Niobrara A Marl				
7,554.14	7,263.00	Nio B1 Chalk				
7,611.88	7,294.00	Nio B1 Marl				
7,652.06	7,312.00	Niobrara B Chalk				
7,755.92	7,344.00	Niobrara B Marl				
7,851.69	7,354.00	Niobrara B Landing Target				
7,851.69	7,354.00	TD				

Plan Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
1,000.00	1,000.00	0.00	0.00	Start Build 2.00
2,576.80	2,498.38	-211.31	366.55	Start 300.09 hold at 2576.80 MD
2,876.89	2,754.15	-289.70	502.53	Start Drop -1.50
4,979.28	4,751.99	-571.44	991.26	Start 2124.55 hold at 4979.28 MD
7,103.83	6,876.54	-571.44	991.26	Start DLS 12.00 TFO 359.69
7,853.83	7,354.00	-93.98	988.65	Start 10011.55 hold at 7853.83 MD
17,865.38	7,354.00	9,917.42	933.82	TD at 17865.38