



# **EQT Production - Marcellus**

**Ritchie County, WV  
Ritchie County 515276  
Well #515276**

**Main Wellbore**

**Design: 515276 As Drilled Surveys**

## **Standard Survey Report**

**24 March, 2015**

Received  
Office of Oil & Gas

AUG 26 2015



Where energy meets innovation.

<b>Database:</b>	EDM 5000.1 Single User Db	<b>Local Co-ordinate Reference:</b>	Site Ritchie County 515276
<b>Company:</b>	EQT Production - Marcellus	<b>TVD Reference:</b>	KB@16 @ 1135.0usft
<b>Project:</b>	Ritchie County, WV	<b>MD Reference:</b>	KB@16 @ 1135.0usft
<b>Site:</b>	Ritchie County 515276	<b>North Reference:</b>	Grid
<b>Well:</b>	Well #515276	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Main Wellbore		
<b>Design:</b>	515276 As Drilled Surveys		

**Project** Ritchie County, WV

<b>Map System:</b>	US State Plane 1927 (Exact solution)	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	NAD 1927 (NADCON CONUS)		
<b>Map Zone:</b>	West Virginia North 4701		Using geodetic scale factor

**Site** Ritchie County 515276

<b>Site Position:</b>		<b>Northing:</b>	280,805.10 usft	<b>Latitude:</b>	39.26
<b>From:</b>	Map	<b>Easting:</b>	1,589,040.80 usft	<b>Longitude:</b>	-80.95
<b>Position Uncertainty:</b>	0.0 usft	<b>Slot Radius:</b>	13-3/16 "	<b>Grid Convergence:</b>	-0.93 °

**Well** Well #515276

<b>Well Position</b>	<b>+N/-S</b>	0.0 usft	<b>Northing:</b>	280,805.10 usft	<b>Latitude:</b>	39° 15' 42.700 N
	<b>+E/-W</b>	0.0 usft	<b>Easting:</b>	1,589,040.80 usft	<b>Longitude:</b>	80° 57' 5.162 W
<b>Position Uncertainty</b>		0.0 usft	<b>Wellhead Elevation:</b>	usft	<b>Ground Level:</b>	1,119.0 usft

**Wellbore** Main Wellbore

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	2/23/2015	-8.33	66.77	52,203

**Design** 515276 As Drilled Surveys

**Audit Notes:**

<b>Version:</b>	1.0	<b>Phase:</b>	ACTUAL	<b>Tie On Depth:</b>	0.0
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Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.0	0.0	0.0	5.24

**Survey Program** Date 3/24/2015

From (')	To (usft)	Survey (Wellbore)	Tool Name	Description
0.00	3,878.0	GyroData Gyro (Main Wellbore)	GYD_DP_MS	Gyrodata gyro-compassing and drop
0.00	14,164.0	Phoenix MWD (Main Wellbore)	MWD+IGRF	MWD+IGRF v3:standard declination

**Survey**

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	Subsea Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.0	0.00	0.00	0.0	-1,135.0	0.0	0.0	0.0	0.00	0.00	0.00
103.0	0.29	245.30	103.0	-1,032.0	-0.1	-0.2	-0.1	0.28	0.28	0.00
203.0	0.42	271.96	203.0	-932.0	-0.2	-0.8	-0.3	0.21	0.13	26.66
303.0	0.41	273.56	303.0	-832.0	-0.2	-1.6	-0.3	0.02	-0.01	1.60
403.0	0.37	275.52	403.0	-732.0	-0.1	-2.2	-0.3	0.04	-0.04	1.96
503.0	0.38	264.74	503.0	-632.0	-0.1	-2.9	-0.4	0.07	0.01	-10.78
603.0	0.40	258.14	603.0	-532.0	-0.2	-3.6	-0.5	0.05	0.02	-6.60
703.0	0.19	206.26	703.0	-432.0	-0.4	-4.0	-0.8	0.32	-0.21	-51.88

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<b>Well:</b>	Well #515276	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Main Wellbore		
<b>Design:</b>	515276 As Drilled Surveys		

Survey											
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	Subsea Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
803.0	0.18	168.34	803.0	-332.0	-0.7	-4.0	-1.1	0.12	-0.01	-37.92	
903.0	0.23	187.22	903.0	-232.0	-1.1	-4.0	-1.5	0.08	0.05	18.88	
1,003.0	0.18	163.68	1,003.0	-132.0	-1.4	-4.0	-1.8	0.10	-0.05	-23.54	
1,103.0	0.22	161.68	1,103.0	-32.0	-1.8	-3.9	-2.1	0.04	0.04	-2.00	
1,203.0	0.58	161.80	1,203.0	68.0	-2.4	-3.7	-2.8	0.36	0.36	0.12	
1,303.0	0.57	172.05	1,303.0	168.0	-3.4	-3.4	-3.7	0.10	-0.01	10.25	
1,403.0	0.56	165.01	1,403.0	268.0	-4.4	-3.2	-4.7	0.07	-0.01	-7.04	
1,503.0	0.65	172.78	1,503.0	368.0	-5.4	-3.0	-5.7	0.12	0.09	7.77	
1,603.0	0.59	176.59	1,603.0	468.0	-6.5	-2.9	-6.7	0.07	-0.06	3.81	
1,703.0	0.50	180.25	1,703.0	568.0	-7.4	-2.9	-7.7	0.10	-0.09	3.66	
1,803.0	0.57	178.40	1,803.0	668.0	-8.4	-2.9	-8.6	0.07	0.07	-1.85	
1,903.0	0.55	178.43	1,902.9	767.9	-9.3	-2.9	-9.6	0.02	-0.02	0.03	
2,003.0	0.50	175.53	2,002.9	867.9	-10.3	-2.8	-10.5	0.06	-0.05	-2.90	
2,103.0	0.47	188.09	2,102.9	967.9	-11.1	-2.9	-11.3	0.11	-0.03	12.56	
2,203.0	0.52	184.81	2,202.9	1,067.9	-12.0	-2.9	-12.2	0.06	0.05	-3.28	
2,303.0	0.48	179.51	2,302.9	1,167.9	-12.8	-3.0	-13.1	0.06	-0.04	-5.30	
2,403.0	0.50	185.16	2,402.9	1,267.9	-13.7	-3.0	-13.9	0.05	0.02	5.65	
2,503.0	0.50	184.33	2,502.9	1,367.9	-14.6	-3.1	-14.8	0.01	0.00	-0.83	
2,603.0	0.40	183.55	2,602.9	1,467.9	-15.3	-3.1	-15.6	0.10	-0.10	-0.78	
2,703.0	0.34	191.54	2,702.9	1,567.9	-16.0	-3.2	-16.2	0.08	-0.06	7.99	
2,803.0	0.47	199.46	2,802.9	1,667.9	-16.7	-3.4	-16.9	0.14	0.13	7.92	
2,903.0	0.26	216.99	2,902.9	1,767.9	-17.2	-3.7	-17.5	0.24	-0.21	17.53	
3,003.0	0.20	235.01	3,002.9	1,867.9	-17.5	-4.0	-17.8	0.09	-0.06	18.02	
3,103.0	0.41	229.99	3,102.9	1,967.9	-17.8	-4.4	-18.2	0.21	0.21	-5.02	
3,203.0	0.27	220.86	3,202.9	2,067.9	-18.2	-4.8	-18.6	0.15	-0.14	-9.13	
3,303.0	0.23	231.61	3,302.9	2,167.9	-18.5	-5.1	-18.9	0.06	-0.04	10.75	
3,403.0	0.35	191.46	3,402.9	2,267.9	-19.0	-5.4	-19.4	0.23	0.12	-40.15	
3,503.0	0.26	204.98	3,502.9	2,367.9	-19.5	-5.5	-19.9	0.11	-0.09	13.52	
3,603.0	0.14	163.35	3,602.9	2,467.9	-19.8	-5.6	-20.2	0.18	-0.12	-41.63	
3,703.0	0.19	178.03	3,702.9	2,567.9	-20.1	-5.5	-20.5	0.07	0.05	14.68	
3,803.0	0.19	145.24	3,802.9	2,667.9	-20.4	-5.4	-20.8	0.11	0.00	-32.79	
<b>Gyro Tie In= 3878' MD</b>											
3,878.0	0.34	168.24	3,877.9	2,742.9	-20.7	-5.3	-21.1	0.24	0.20	30.67	
3,908.0	0.20	187.80	3,907.9	2,772.9	-20.8	-5.3	-21.2	0.55	-0.47	66.92	
3,940.0	0.30	105.50	3,939.9	2,804.9	-20.9	-5.2	-21.3	1.05	0.31	-257.19	
3,971.0	1.00	90.30	3,970.9	2,835.9	-20.9	-4.9	-21.3	2.33	1.25	-49.03	
4,003.0	1.80	88.50	4,002.9	2,867.9	-20.9	-4.1	-21.2	2.50	2.50	-5.63	
4,034.0	2.80	87.70	4,033.9	2,898.9	-20.9	-2.9	-21.1	3.23	3.23	-2.58	
4,066.0	4.10	84.20	4,065.8	2,930.8	-20.7	-0.9	-20.7	4.11	4.06	-10.94	
4,098.0	5.10	84.90	4,097.7	2,962.7	-20.5	1.6	-20.3	3.13	3.13	2.19	
4,129.0	6.30	84.90	4,128.6	2,993.6	-20.2	4.7	-19.7	3.87	3.87	0.00	
4,161.0	7.40	84.40	4,160.3	3,025.3	-19.9	8.5	-19.0	3.44	3.44	-1.56	
4,192.0	8.40	84.20	4,191.0	3,056.0	-19.4	12.7	-18.2	3.23	3.23	-0.65	

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4,224.0	9.40	86.00	4,222.6	3,087.6	-19.0	17.7	-17.3	3.24	3.13	5.63
4,255.0	10.10	87.30	4,253.2	3,118.2	-18.7	22.9	-16.6	2.37	2.26	4.19
4,287.0	10.80	87.70	4,284.7	3,149.7	-18.5	28.7	-15.8	2.20	2.19	1.25
4,318.0	11.60	88.40	4,315.1	3,180.1	-18.3	34.7	-15.0	2.62	2.58	2.26
4,350.0	12.70	89.60	4,346.4	3,211.4	-18.2	41.4	-14.3	3.53	3.44	3.75
4,382.0	13.50	90.60	4,377.5	3,242.5	-18.2	48.7	-13.6	2.60	2.50	3.13
4,413.0	14.30	90.00	4,407.6	3,272.6	-18.2	56.1	-13.0	2.62	2.58	-1.94
4,445.0	14.80	89.90	4,438.6	3,303.6	-18.2	64.2	-12.3	1.56	1.56	-0.31
4,476.0	15.70	90.70	4,468.5	3,333.5	-18.2	72.3	-11.6	2.98	2.90	2.58
4,508.0	16.30	89.50	4,499.3	3,364.3	-18.3	81.2	-10.8	2.14	1.88	-3.75
4,539.0	17.20	89.20	4,528.9	3,393.9	-18.2	90.1	-9.8	2.92	2.90	-0.97
4,571.0	17.70	89.20	4,559.5	3,424.5	-18.0	99.7	-8.8	1.56	1.56	0.00
4,602.0	19.10	90.10	4,588.9	3,453.9	-18.0	109.5	-7.9	4.61	4.52	2.90
4,634.0	20.20	90.90	4,619.0	3,484.0	-18.1	120.2	-7.0	3.54	3.44	2.50
4,665.0	21.40	91.50	4,648.0	3,513.0	-18.3	131.2	-6.2	3.93	3.87	1.94
4,697.0	22.30	90.50	4,677.7	3,542.7	-18.5	143.1	-5.3	3.04	2.81	-3.13
4,728.0	23.20	89.40	4,706.3	3,571.3	-18.5	155.1	-4.2	3.21	2.90	-3.55
4,760.0	24.30	88.10	4,735.6	3,600.6	-18.2	168.0	-2.8	3.81	3.44	-4.06
4,792.0	25.00	87.70	4,764.7	3,629.7	-17.7	181.4	-1.1	2.25	2.19	-1.25
4,823.0	25.60	87.40	4,792.7	3,657.7	-17.1	194.6	0.7	1.98	1.94	-0.97
4,855.0	26.20	86.70	4,821.5	3,686.5	-16.4	208.6	2.7	2.10	1.88	-2.19
4,886.0	27.00	87.20	4,849.2	3,714.2	-15.7	222.4	4.7	2.68	2.58	1.61
4,918.0	28.00	87.10	4,877.6	3,742.6	-14.9	237.2	6.8	3.13	3.13	-0.31
4,949.0	28.90	87.30	4,904.8	3,769.8	-14.2	251.9	8.8	2.92	2.90	0.65
4,981.0	29.80	87.50	4,932.7	3,797.7	-13.5	267.6	11.0	2.83	2.81	0.63
5,012.0	31.00	88.00	4,959.5	3,824.5	-12.9	283.3	13.0	3.96	3.87	1.61
5,044.0	31.70	88.40	4,986.8	3,851.8	-12.4	299.9	15.1	2.28	2.19	1.25
5,075.0	32.50	88.20	5,013.0	3,878.0	-11.9	316.4	17.1	2.60	2.58	-0.65
5,107.0	33.30	88.40	5,039.9	3,904.9	-11.4	333.7	19.2	2.52	2.50	0.63
5,138.0	34.20	88.40	5,065.7	3,930.7	-10.9	351.0	21.2	2.90	2.90	0.00
5,170.0	35.10	87.90	5,092.0	3,957.0	-10.3	369.1	23.5	2.95	2.81	-1.56
5,202.0	35.90	88.00	5,118.1	3,983.1	-9.6	387.7	25.8	2.51	2.50	0.31
5,233.0	36.90	88.30	5,143.0	4,008.0	-9.0	406.1	28.1	3.28	3.23	0.97
5,265.0	37.90	88.50	5,168.4	4,033.4	-8.5	425.5	30.4	3.15	3.13	0.63
5,296.0	39.20	88.90	5,192.7	4,057.7	-8.1	444.8	32.6	4.27	4.19	1.29
5,328.0	40.30	89.60	5,217.3	4,082.3	-7.8	465.3	34.7	3.71	3.44	2.19
5,359.0	41.00	89.80	5,240.8	4,105.8	-7.7	485.5	36.7	2.30	2.26	0.65
5,375.0	41.10	89.80	5,252.9	4,117.9	-7.7	496.0	37.7	0.63	0.63	0.00
5,429.0	41.40	90.90	5,293.5	4,158.5	-7.9	531.6	40.7	1.45	0.56	2.04
5,460.0	41.80	90.40	5,316.7	4,181.7	-8.1	552.2	42.4	1.68	1.29	0.63
5,492.0	42.20	88.30	5,340.4	4,205.4	-7.9	573.6	44.6	4.57	1.25	-6.56
5,523.0	42.60	87.00	5,363.3	4,228.3	-7.0	594.5	47.3	3.11	1.29	-4.19

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5,555.0	45.00	87.20	5,386.4	4,251.4	-5.9	616.6	50.4	7.51	7.50	0.63	
5,587.0	48.20	87.50	5,408.4	4,273.4	-4.8	639.8	53.6	10.02	10.00	0.94	
5,618.0	51.20	88.70	5,428.5	4,293.5	-4.0	663.4	56.6	10.12	9.68	3.87	
5,650.0	54.20	88.90	5,447.8	4,312.8	-3.5	688.9	59.4	9.39	9.38	0.63	
5,682.0	57.70	88.80	5,465.8	4,330.8	-3.0	715.4	62.4	10.94	10.94	-0.31	
5,713.0	61.10	88.80	5,481.5	4,346.5	-2.4	742.1	65.4	10.97	10.97	0.00	
5,745.0	61.90	88.50	5,496.8	4,361.8	-1.8	770.2	68.6	2.63	2.50	-0.94	
5,776.0	64.90	88.00	5,510.7	4,375.7	-0.9	797.9	72.0	9.78	9.68	-1.61	
5,808.0	68.80	87.50	5,523.3	4,388.3	0.3	827.3	75.8	12.27	12.19	-1.56	
5,840.0	71.10	87.00	5,534.2	4,399.2	1.7	857.3	80.0	7.34	7.19	-1.56	
5,903.0	72.40	86.50	5,554.0	4,419.0	5.1	917.0	88.8	2.20	2.06	-0.79	
5,966.0	71.30	85.70	5,573.6	4,438.6	9.2	976.8	98.3	2.12	-1.75	-1.27	
6,029.0	68.80	87.30	5,595.1	4,460.1	12.8	1,035.9	107.3	4.63	-3.97	2.54	
6,092.0	68.30	88.60	5,618.1	4,483.1	14.9	1,094.5	114.8	2.08	-0.79	2.06	
6,155.0	69.10	88.10	5,641.0	4,506.0	16.6	1,153.1	121.8	1.47	1.27	-0.79	
6,218.0	68.00	88.40	5,664.0	4,529.0	18.4	1,211.7	129.0	1.80	-1.75	0.48	
6,281.0	68.60	88.70	5,687.3	4,552.3	19.8	1,270.3	135.8	1.05	0.95	0.48	
6,344.0	69.20	88.20	5,710.0	4,575.0	21.4	1,329.0	142.7	1.21	0.95	-0.79	
6,407.0	69.80	87.90	5,732.1	4,597.1	23.4	1,388.0	150.1	1.05	0.95	-0.48	
6,470.0	70.30	86.90	5,753.6	4,618.6	26.1	1,447.1	158.2	1.69	0.79	-1.59	
6,533.0	70.90	85.90	5,774.5	4,639.5	29.9	1,506.4	167.3	1.77	0.95	-1.59	
6,596.0	69.70	87.90	5,795.7	4,660.7	33.1	1,565.7	175.9	3.54	-1.90	3.17	
6,659.0	69.10	89.20	5,817.9	4,682.9	34.6	1,624.6	182.8	2.15	-0.95	2.06	
6,722.0	69.10	88.90	5,840.4	4,705.4	35.5	1,683.5	189.1	0.44	0.00	-0.48	
6,785.0	69.60	88.70	5,862.6	4,727.6	36.8	1,742.4	195.8	0.85	0.79	-0.32	
6,849.0	68.50	89.30	5,885.5	4,750.5	37.8	1,802.2	202.3	1.93	-1.72	0.94	
6,912.0	68.60	89.40	5,908.5	4,773.5	38.5	1,860.8	208.3	0.22	0.16	0.16	
6,975.0	68.70	88.60	5,931.5	4,796.5	39.5	1,919.5	214.7	1.19	0.16	-1.27	
7,038.0	68.80	88.70	5,954.3	4,819.3	40.9	1,978.2	221.4	0.22	0.16	0.16	
7,101.0	70.00	87.80	5,976.5	4,841.5	42.7	2,037.1	228.6	2.33	1.90	-1.43	
7,164.0	70.70	87.20	5,997.6	4,862.6	45.3	2,096.4	236.6	1.43	1.11	-0.95	
7,227.0	69.10	88.50	6,019.3	4,884.3	47.5	2,155.5	244.2	3.19	-2.54	2.06	
7,290.0	68.90	89.20	6,041.9	4,906.9	48.7	2,214.3	250.7	1.08	-0.32	1.11	
7,353.0	69.30	88.70	6,064.3	4,929.3	49.8	2,273.1	257.2	0.98	0.63	-0.79	
7,416.0	70.80	88.00	6,085.8	4,950.8	51.5	2,332.3	264.3	2.60	2.38	-1.11	
7,479.0	71.90	87.70	6,106.0	4,971.0	53.7	2,392.0	272.0	1.80	1.75	-0.48	
7,511.0	72.40	87.40	6,115.8	4,980.8	55.0	2,422.4	276.0	1.80	1.56	-0.94	
7,542.0	71.60	85.00	6,125.4	4,990.4	57.0	2,451.8	280.7	7.80	-2.58	7.74	
7,574.0	71.30	81.70	6,135.6	5,000.6	60.5	2,482.0	286.9	9.82	-0.94	10.03	
7,605.0	70.60	77.70	6,145.7	5,010.7	65.7	2,510.8	294.8	12.40	-2.26	-12.90	
7,637.0	70.00	74.80	6,156.5	5,021.5	72.9	2,540.0	304.6	8.74	-1.88	10.06	
7,668.0	69.20	71.70	6,167.3	5,032.3	81.2	2,567.9	315.4	9.72	-2.58	-10.00	
7,700.0	69.00	68.60	6,178.7	5,043.7	91.4	2,596.0	328.1	9.07	-0.63	-9.69	

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<b>Company:</b>	EQT Production - Marcellus	<b>TVD Reference:</b>	KB@16 @ 1135.0usft
<b>Project:</b>	Ritchie County, WV	<b>MD Reference:</b>	KB@16 @ 1135.0usft
<b>Site:</b>	Ritchie County 515276	<b>North Reference:</b>	Grid
<b>Well:</b>	Well #515276	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Main Wellbore		
<b>Design:</b>	515276 As Drilled Surveys		

Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	Subsea Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
7,731.0	68.70	65.00	6,189.9	5,054.9	102.8	2,622.5	341.9	10.87	-0.97	-11.61
7,763.0	67.90	61.90	6,201.7	5,066.7	116.1	2,649.1	357.5	9.34	-2.50	-9.69
7,795.0	68.00	58.50	6,213.7	5,078.7	130.8	2,674.9	374.6	9.85	0.31	-10.63
7,826.0	68.70	55.00	6,225.2	5,090.2	146.6	2,699.0	392.5	10.73	2.26	-11.29
7,858.0	69.50	51.30	6,236.6	5,101.6	164.5	2,722.9	412.5	11.09	2.50	-11.56
7,889.0	69.50	48.10	6,247.5	5,112.5	183.3	2,745.0	433.2	9.67	0.00	-10.32
7,921.0	69.10	44.80	6,258.8	5,123.8	203.9	2,766.7	455.8	9.73	-1.25	-10.31
7,952.0	69.10	41.40	6,269.8	5,134.8	225.1	2,786.5	478.6	10.25	0.00	-10.97
7,984.0	70.00	37.30	6,281.0	5,146.0	248.2	2,805.5	503.4	12.33	2.81	-12.81
8,015.0	70.90	34.00	6,291.4	5,156.4	272.0	2,822.5	528.6	10.44	2.90	-10.65
8,047.0	71.10	31.30	6,301.8	5,166.8	297.5	2,838.8	555.5	8.00	0.63	-8.44
8,079.0	71.90	28.20	6,312.0	5,177.0	323.8	2,853.9	583.1	9.52	2.50	-9.69
8,110.0	73.20	25.40	6,321.3	5,186.3	350.2	2,867.2	610.6	9.58	4.19	-9.03
8,142.0	74.60	22.90	6,330.1	5,195.1	378.2	2,879.8	639.7	8.69	4.38	-7.81
8,174.0	75.90	19.00	6,338.3	5,203.3	407.1	2,890.9	669.5	12.47	4.06	-12.19
8,205.0	77.10	15.90	6,345.5	5,210.5	435.9	2,899.9	698.9	10.47	3.87	-10.00
8,237.0	78.20	12.90	6,352.4	5,217.4	466.2	2,907.7	729.8	9.78	3.44	-9.38
8,269.0	78.20	9.70	6,358.9	5,223.9	496.9	2,913.8	760.9	9.79	0.00	-10.00
8,300.0	77.50	6.80	6,365.4	5,230.4	526.9	2,918.2	791.2	9.42	-2.26	-9.35
8,332.0	78.20	3.40	6,372.2	5,237.2	558.0	2,920.9	822.5	10.61	2.19	-10.63
8,363.0	79.30	0.70	6,378.2	5,243.2	588.4	2,922.0	852.8	9.25	3.55	-8.71
8,395.0	80.40	357.90	6,383.9	5,248.9	619.9	2,921.6	884.1	9.27	3.44	-8.75
8,426.0	82.00	355.40	6,388.6	5,253.6	650.5	2,919.8	914.4	9.49	5.16	-8.06
8,458.0	83.60	352.20	6,392.6	5,257.6	682.0	2,916.4	945.5	11.11	5.00	-10.00
8,489.0	83.80	349.40	6,396.0	5,261.0	712.4	2,911.5	975.4	9.00	0.65	-9.03
8,521.0	84.80	346.90	6,399.2	5,264.2	743.6	2,904.9	1,005.8	8.38	3.13	-7.81
8,553.0	86.10	344.30	6,401.7	5,266.7	774.5	2,897.0	1,035.8	9.06	4.06	-8.13
8,584.0	87.20	341.00	6,403.6	5,268.6	804.0	2,887.8	1,064.4	11.20	3.55	-10.65
LP= 8616' MD/6405' TVD										
8,616.0	88.20	338.20	6,404.8	5,269.8	834.0	2,876.6	1,093.2	9.28	3.13	-8.75
8,647.0	89.50	335.20	6,405.5	5,270.5	862.5	2,864.4	1,120.5	10.54	4.19	-9.68
8,679.0	90.00	334.30	6,405.6	5,270.6	891.4	2,850.7	1,148.0	3.22	1.56	-2.81
8,742.0	90.90	334.30	6,405.1	5,270.1	948.2	2,823.4	1,202.1	1.43	1.43	0.00
8,805.0	89.10	334.50	6,405.1	5,270.1	1,005.0	2,796.2	1,256.2	2.87	-2.86	0.32
8,868.0	89.70	336.80	6,405.8	5,270.8	1,062.4	2,770.2	1,310.9	3.77	0.95	3.65
8,931.0	89.10	337.60	6,406.4	5,271.4	1,120.4	2,745.8	1,366.5	1.59	-0.95	1.27
8,994.0	88.50	337.60	6,407.7	5,272.7	1,178.7	2,721.8	1,422.3	0.95	-0.95	0.00
9,057.0	88.90	337.10	6,409.2	5,274.2	1,236.8	2,697.6	1,478.0	1.02	0.63	-0.79
9,120.0	86.10	335.70	6,411.9	5,276.9	1,294.5	2,672.4	1,533.1	4.97	-4.44	-2.22
9,183.0	86.90	334.90	6,415.8	5,280.8	1,351.6	2,646.1	1,587.6	1.79	1.27	-1.27
9,246.0	89.40	333.40	6,417.8	5,282.8	1,408.3	2,618.6	1,641.5	4.63	3.97	0.00
9,309.0	90.60	333.40	6,417.8	5,282.8	1,464.6	2,590.4	1,695.1	1.90	1.90	0.00

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<b>Database:</b>	EDM 5000.1 Single User Db	<b>Local Co-ordinate Reference:</b>	Site Ritchie County 515276
<b>Company:</b>	EQT Production - Marcellus	<b>TVD Reference:</b>	KB@16 @ 1135.0usft
<b>Project:</b>	Ritchie County WV	<b>MD Reference:</b>	KB@16 @ 1135.0usft
<b>Site:</b>	Ritchie County 515276	<b>North Reference:</b>	Grid
<b>Well:</b>	Well #515276	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Main Wellbore		
<b>Design:</b>	515276 As Drilled Surveys		

Survey											
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	Subsea Depth (usft)	+N-S (usft)	+E-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
9,372.0	90.40	332.90	6,417.3	5,282.3	1,520.8	2,562.0	1,748.4	0.85	-0.32	-0.79	
9,436.0	90.60	332.60	6,416.7	5,281.7	1,577.7	2,532.7	1,802.4	0.56	0.31	-0.47	
9,499.0	91.40	332.60	6,415.6	5,280.6	1,633.6	2,503.7	1,855.4	1.27	1.27	0.00	
9,562.0	89.40	333.40	6,415.2	5,280.2	1,689.7	2,475.1	1,908.7	3.42	-3.17	1.27	
9,625.0	89.50	333.80	6,415.8	5,280.8	1,746.2	2,447.1	1,962.4	0.65	0.16	0.63	
9,687.0	85.90	334.00	6,418.2	5,283.2	1,801.8	2,419.8	2,015.3	5.82	-5.81	0.32	
9,750.0	86.30	334.10	6,422.5	5,287.5	1,858.3	2,392.3	2,069.0	0.65	0.63	0.16	
9,813.0	88.30	334.60	6,425.5	5,290.5	1,915.0	2,365.1	2,123.0	3.27	3.17	0.79	
9,876.0	90.90	337.10	6,425.9	5,290.9	1,972.5	2,339.3	2,177.9	5.72	4.13	3.97	
9,939.0	92.40	337.00	6,424.1	5,289.1	2,030.5	2,314.8	2,233.4	2.39	2.38	-0.16	
10,002.0	91.30	336.00	6,422.1	5,287.1	2,088.2	2,289.6	2,288.6	2.36	-1.75	-1.59	
10,066.0	91.40	335.10	6,420.6	5,285.6	2,146.5	2,263.2	2,344.2	1.41	0.16	-1.41	
10,129.0	90.30	335.70	6,419.7	5,284.7	2,203.8	2,236.9	2,398.8	1.99	-1.75	0.95	
10,192.0	90.60	336.50	6,419.2	5,284.2	2,261.4	2,211.4	2,453.9	1.36	0.48	1.27	
10,255.0	89.00	336.10	6,419.4	5,284.4	2,319.0	2,186.1	2,509.0	2.62	-2.54	-0.63	
10,318.0	88.30	335.00	6,420.9	5,285.9	2,376.4	2,160.0	2,563.7	2.07	-1.11	-1.75	
10,381.0	89.30	334.50	6,422.2	5,287.2	2,433.3	2,133.2	2,618.0	1.77	1.59	-0.79	
10,444.0	88.20	335.10	6,423.6	5,288.6	2,490.3	2,106.3	2,672.3	1.99	-1.75	0.95	
10,508.0	88.60	334.60	6,425.3	5,290.3	2,548.2	2,079.2	2,727.5	1.00	0.63	-0.78	
10,571.0	90.00	334.90	6,426.1	5,291.1	2,605.2	2,052.3	2,781.8	2.27	2.22	0.48	
10,634.0	89.40	334.80	6,426.4	5,291.4	2,662.2	2,025.5	2,836.1	0.97	-0.95	-0.16	
10,697.0	89.90	334.90	6,426.8	5,291.8	2,719.3	1,998.7	2,890.4	0.81	0.79	0.16	
10,760.0	91.10	334.60	6,426.3	5,291.3	2,776.2	1,971.9	2,944.7	1.96	1.90	-0.48	
10,823.0	90.20	334.70	6,425.6	5,290.6	2,833.2	1,944.9	2,999.0	1.44	-1.43	0.16	
10,886.0	90.50	334.40	6,425.2	5,290.2	2,890.1	1,917.8	3,053.1	0.67	0.48	-0.48	
10,949.0	89.50	334.60	6,425.2	5,290.2	2,946.9	1,890.7	3,107.3	1.62	-1.59	0.32	
11,013.0	89.50	334.80	6,425.7	5,290.7	3,004.8	1,863.4	3,162.4	0.31	0.00	0.31	
11,076.0	90.50	333.80	6,425.7	5,290.7	3,061.5	1,836.0	3,216.4	2.24	1.59	-1.59	
11,139.0	89.70	334.10	6,425.6	5,290.6	3,118.1	1,808.4	3,270.3	1.36	-1.27	0.48	
11,202.0	89.70	334.20	6,426.0	5,291.0	3,174.8	1,780.9	3,324.2	0.16	0.00	0.16	
11,265.0	89.30	335.50	6,426.5	5,291.5	3,231.9	1,754.1	3,378.6	2.16	-0.63	2.06	
11,328.0	90.00	335.00	6,426.9	5,291.9	3,289.1	1,727.7	3,433.1	1.37	1.11	-0.79	
11,391.0	89.80	335.30	6,427.0	5,292.0	3,346.2	1,701.3	3,487.6	0.57	-0.32	0.48	
11,454.0	90.80	335.50	6,426.7	5,291.7	3,403.5	1,675.0	3,542.3	1.62	1.59	0.32	
11,517.0	90.20	336.00	6,426.1	5,291.1	3,461.0	1,649.2	3,597.1	1.24	-0.95	0.79	
11,580.0	90.10	336.40	6,426.0	5,291.0	3,518.6	1,623.8	3,652.2	0.65	-0.16	0.63	
11,643.0	89.10	337.20	6,426.4	5,291.4	3,576.5	1,598.9	3,707.6	2.03	-1.59	1.27	
11,706.0	89.10	337.00	6,427.4	5,292.4	3,634.5	1,574.4	3,763.1	0.32	0.00	0.32	
11,770.0	90.30	337.00	6,427.7	5,292.7	3,693.4	1,549.4	3,819.5	1.88	1.88	0.00	
11,833.0	89.50	336.80	6,427.8	5,292.8	3,751.4	1,524.7	3,875.0	1.31	-1.27	-0.32	
11,896.0	89.40	336.40	6,428.4	5,293.4	3,809.2	1,499.7	3,930.3	0.65	-0.16	-0.63	
11,959.0	88.70	335.50	6,429.5	5,294.5	3,866.7	1,474.0	3,985.2	1.81	-1.11	-1.43	
12,021.0	89.00	334.80	6,430.7	5,295.7	3,923.0	1,448.0	4,038.8	1.23	0.48	-1.13	

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<b>Well:</b>	Well #515276	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Main Wellbore		
<b>Design:</b>	515276 As Drilled Surveys		

Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	Subsea Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
12,085.0	91.00	334.70	6,430.7	5,295.7	3,980.9	1,420.7	4,094.0	3.13	3.13	-0.16
12,148.0	92.80	333.60	6,428.6	5,293.6	4,037.5	1,393.2	4,147.9	3.35	2.86	-1.75
12,211.0	90.50	333.70	6,426.8	5,291.8	4,093.9	1,365.3	4,201.5	3.65	-3.65	0.16
12,274.0	89.90	333.20	6,426.6	5,291.6	4,150.3	1,337.1	4,255.1	1.24	-0.95	-0.79
12,337.0	90.60	332.60	6,426.3	5,291.3	4,206.4	1,308.4	4,308.3	1.46	1.11	-0.95
12,400.0	90.30	333.70	6,425.8	5,290.8	4,262.6	1,279.9	4,361.7	1.81	-0.48	1.75
12,464.0	90.90	333.90	6,425.2	5,290.2	4,320.0	1,251.7	4,416.3	0.99	0.94	0.31
12,527.0	90.00	333.60	6,424.7	5,289.7	4,376.5	1,223.8	4,470.0	1.51	-1.43	-0.48
12,590.0	89.70	333.70	6,424.8	5,289.8	4,433.0	1,195.9	4,523.7	0.50	-0.48	0.16
12,654.0	89.70	334.30	6,425.2	5,290.2	4,490.5	1,167.8	4,578.4	0.94	0.00	0.94
12,717.0	89.90	334.30	6,425.4	5,290.4	4,547.3	1,140.5	4,632.4	0.32	0.32	0.00
12,780.0	89.30	335.10	6,425.8	5,290.8	4,604.2	1,113.6	4,686.7	1.59	-0.95	1.27
12,843.0	89.40	334.40	6,426.5	5,291.5	4,661.2	1,086.7	4,741.0	1.12	0.16	-1.11
12,906.0	88.40	335.50	6,427.7	5,292.7	4,718.2	1,060.0	4,795.3	2.36	-1.59	1.75
12,969.0	88.00	336.00	6,429.7	5,294.7	4,775.7	1,034.2	4,850.2	1.02	-0.63	0.79
13,032.0	89.60	336.40	6,431.0	5,296.0	4,833.3	1,008.7	4,905.2	2.62	2.54	0.63
13,095.0	89.40	336.60	6,431.6	5,296.6	4,891.1	983.6	4,960.5	0.45	-0.32	0.32
13,158.0	89.50	335.70	6,432.2	5,297.2	4,948.7	958.2	5,015.5	1.44	0.16	-1.43
13,222.0	90.60	334.80	6,432.1	5,297.1	5,006.8	931.4	5,070.9	2.22	1.72	-1.41
13,285.0	89.40	335.30	6,432.1	5,297.1	5,063.9	904.8	5,125.4	2.06	-1.90	0.79
13,348.0	88.80	335.20	6,433.1	5,298.1	5,121.1	878.4	5,179.9	0.97	-0.95	-0.16
13,411.0	89.90	335.70	6,433.9	5,298.9	5,178.4	852.2	5,234.6	1.92	1.75	0.79
13,474.0	91.00	335.40	6,433.4	5,298.4	5,235.8	826.2	5,289.3	1.81	1.75	-0.48
13,538.0	91.60	334.70	6,431.9	5,296.9	5,293.8	799.2	5,344.6	1.44	0.94	-1.09
13,601.0	90.40	334.30	6,430.8	5,295.8	5,350.6	772.1	5,398.8	2.01	-1.90	-0.63
13,664.0	89.20	333.80	6,431.0	5,296.0	5,407.3	744.5	5,452.7	2.06	-1.90	-0.79
13,727.0	89.20	333.30	6,431.9	5,296.9	5,463.7	716.4	5,506.3	0.79	0.00	-0.79
13,789.0	89.30	333.30	6,432.7	5,297.7	5,519.1	688.6	5,558.9	0.16	0.16	0.00
13,852.0	89.50	333.50	6,433.4	5,298.4	5,575.4	660.4	5,612.4	0.45	0.32	0.32
13,916.0	89.60	334.20	6,433.9	5,298.9	5,632.8	632.2	5,667.0	1.10	0.16	1.09
13,979.0	89.50	333.90	6,434.4	5,299.4	5,689.5	604.6	5,720.9	0.50	-0.16	-0.48
14,042.0	89.60	332.60	6,434.9	5,299.9	5,745.7	576.2	5,774.4	2.07	0.16	-2.06
Final Survey= 14105' MD/6435' TVD										
14,105.0	89.50	331.90	6,435.4	5,300.4	5,801.5	546.9	5,827.2	1.12	-0.16	1.11
Projection to TD/ Deepest Point of Well= 14164' MD/ 6436' TVD										
14,164.0	89.50	331.90	6,435.9	5,300.9	5,853.5	519.1	5,876.5	0.00	0.00	0.00

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<b>Database:</b>	EDM 5000.1 Single User Db	<b>Local Co-ordinate Reference:</b>	Site Ritchie County 515276
<b>Company:</b>	EQT Production - Marcellus	<b>TVD Reference:</b>	KB@16 @ 1135.0usft
<b>Project:</b>	Ritchie County WV	<b>MD Reference:</b>	KB@16 @ 1135.0usft
<b>Site:</b>	Ritchie County 515276	<b>North Reference:</b>	Grid
<b>Well:</b>	Well #515276	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Main Wellbore		
<b>Design:</b>	515276 As Drilled Surveys		

Design Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
3,878.0	3,877.9	-20.7	-5.3	Gyro Tie In= 3878' MD
8,616.0	6,404.8	834.0	2,876.6	LP= 8616' MD/6405' TVD
14,105.0	6,435.4	5,801.5	546.9	Final Survey= 14105' MD/6435' TVD
14,164.0	6,435.9	5,853.5	519.1	Projection to TD/ Deepest Point of Well= 14164' MD/ 6436' TVD

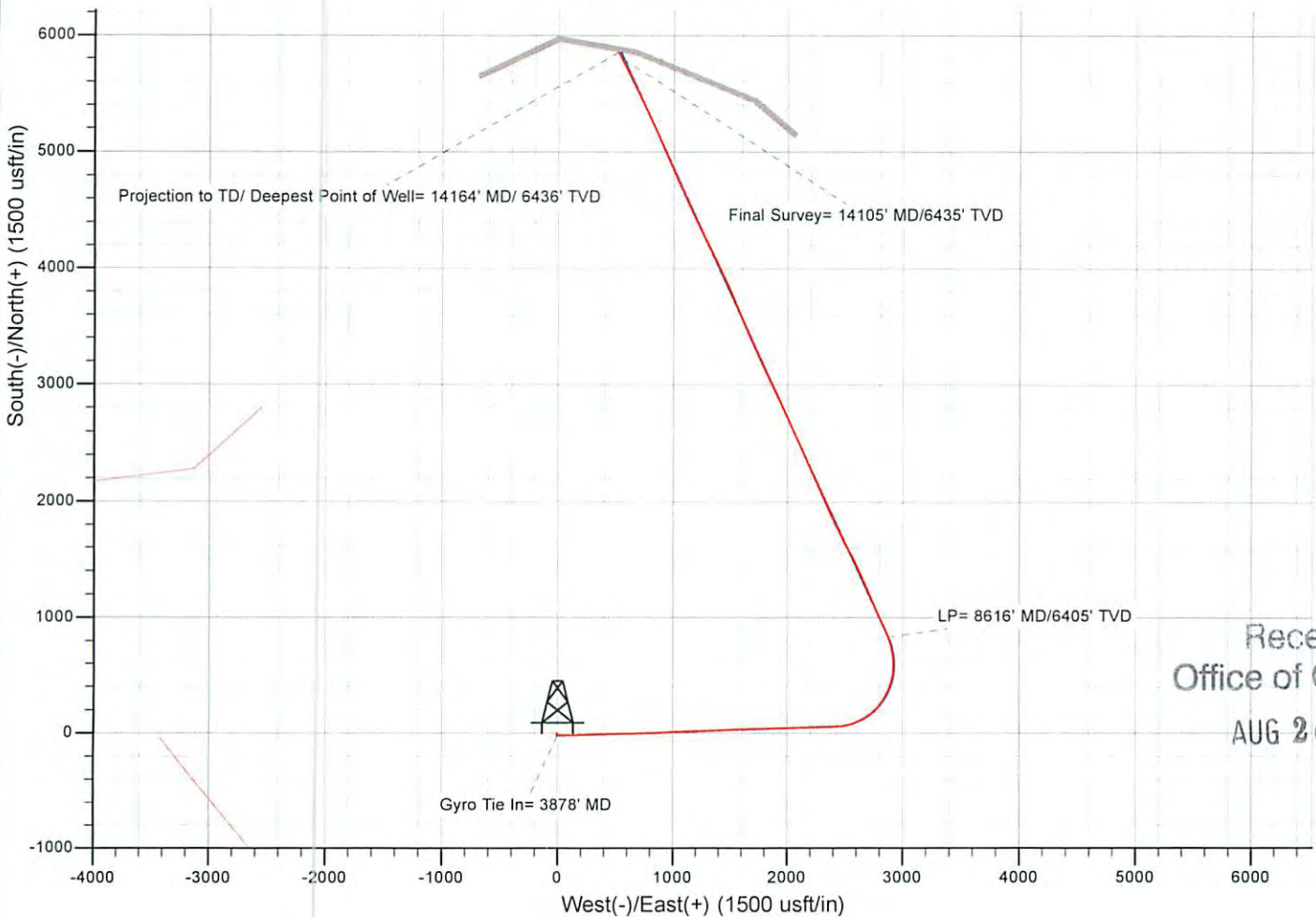
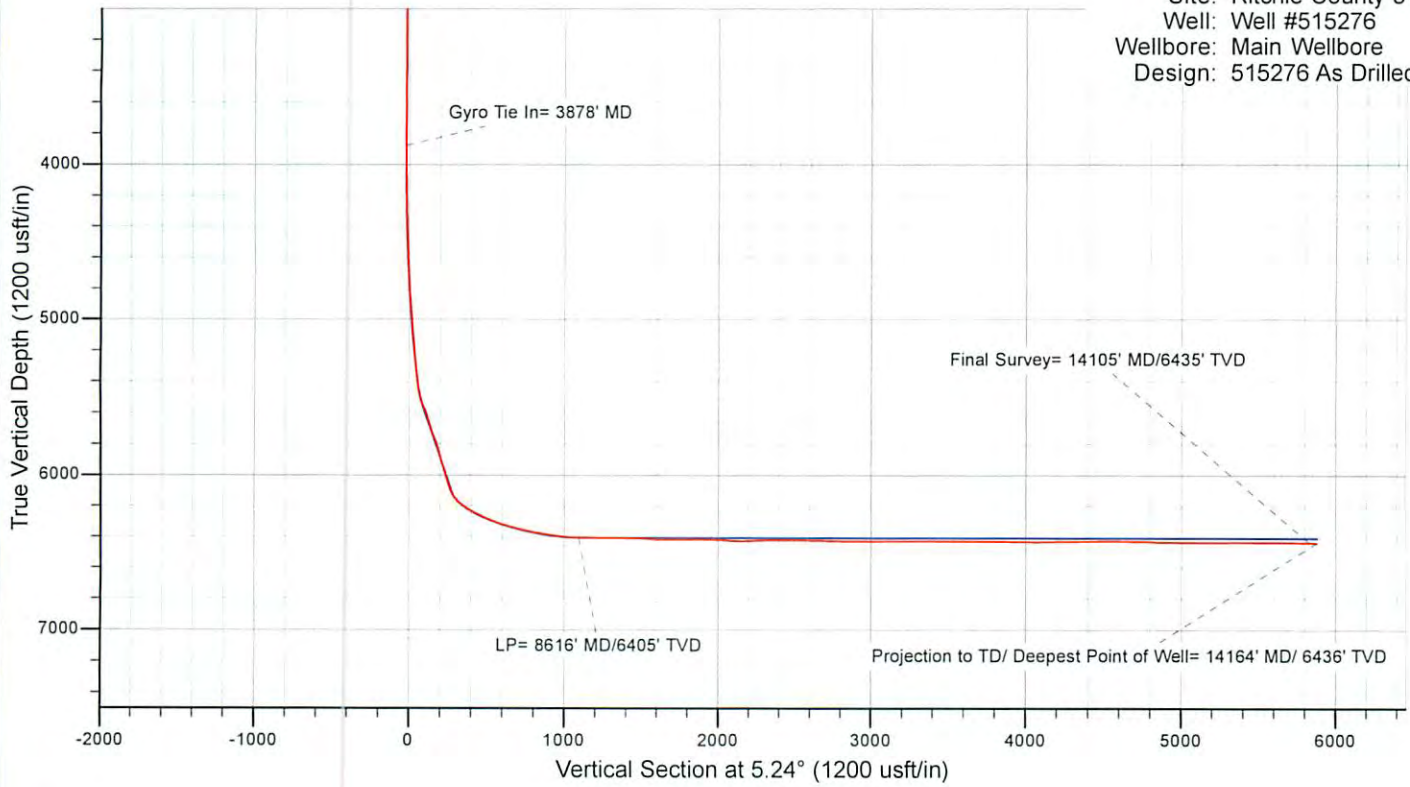
Checked By: \_\_\_\_\_ Approved By: \_\_\_\_\_ Date: \_\_\_\_\_

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# EQT Production - Marcellus

Project: Ritchie County, WV  
 Site: Ritchie County 515276  
 Well: Well #515276  
 Wellbore: Main Wellbore  
 Design: 515276 As Drilled Surveys



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