

PHOENIX
TECHNOLOGY SERVICES



EQT Production - Marcellus

Ritchie County, WV
Ritchie County 515279
Well #515279

Main Wellbore

Design: As Drilled

Standard Survey Report

21 April, 2015



Where energy meets innovation.



PHX
Survey Report



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Site Ritchie County 515279
Company:	EQT Production - Marcellus	TVD Reference:	KB @ 1135.0usft
Project:	Ritchie County, WV	MD Reference:	KB @ 1135.0usft
Site:	Ritchie County 515279	North Reference:	Grid
Well:	Well #515279	Survey Calculation Method:	Minimum Curvature
Wellbore:	Main Wellbore		
Design:	As Drilled		

Project: Ritchie County, WV			
Map System:	US State Plane 1927 (Exact solution)	System Datum:	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	West Virginia North 4701		Using geodetic scale factor

Site: Ritchie County 515279			
Site Position:		Northing:	280 830 20 usft
From:	Map	Easting:	1,589,003 40 usft
Position Uncertainty:	0 0 usft	Slot Radius:	13-3/16 "
		Latitude:	39.26
		Longitude:	-80.95
		Grid Convergence:	-0 93 "

Well: Well #515279			
Well Position	+N/-S	0 0 usft	Northing: 280 830 20 usft
	+E/-W	0 0 usft	Easting: 1,589 003 40 usft
Position Uncertainty		0 0 usft	Wellhead Elevation: usft
			Ground Level: 1 119 0 usft
			Latitude: 39° 15' 42 942 N
			Longitude: 80° 57' 5 643 W

Wellbore: Main Wellbore					
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	4/6/2015	-7 82	66 68	52,090

Design: As Drilled	
--------------------	--

Audit Notes:

Version:	1 0	Phase:	ACTUAL	Tie On Depth:	0 0
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)	
	0 0	0 0	0 0	309 70	

Survey Program		Date:	4/21/2015	
From (')	To (usft)	Survey (Wellbore)	Tool Name	Description
0 00	4 623 0	GyroData Gyro (Main Wellbore)	GYD_DP_MS	Gyrodata gyro-compassing and drop
0 00	5 310 0	515279 PHX MWD (Main Wellbore)	MWD+IGRF	MWD+IGRF v3 standard declination
0 00	11 547 0	515279 PHX Curve and Lateral (Main Wel	PHX+MWD+HDGM	PHX+OWSG MWD + HDGM

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 40	196.06	103 0	-1,032.0	-0.3	-0 1	-0 1	0 39	0 39	0 00
203 0	0 27	194 41	203 0	-932.0	-0.9	-0 3	-0 4	0 13	-0 13	-1 65
303 0	0 28	198.69	303 0	-832.0	-1.4	-0 4	-0 6	0 02	0 01	4 28
403 0	0 32	171.87	403 0	-732.0	-1.9	-0 4	-0 9	0 14	0 04	-26 82
503 0	0 31	157 81	503 0	-632 0	-2.4	-0 3	-1 3	0 08	-0 01	-14 06
603 0	0 29	149 69	603 0	-532 0	-2.9	-0 1	-1 8	0 05	-0 02	-8 12



PHX
Survey Report



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Site Ritchie County 515279
Company:	EQT Production - Mercatus	TVD Reference:	KB @ 1135.0usft
Project:	Ritchie County, WV	MD Reference:	KB @ 1135.0usft
Site:	Ritchie County 515279	North Reference:	Grid
Well:	Well #515279	Survey Calculation Method:	Minimum Curvature
Wellbore:	Main Wellbore		
Design:	As Drilled		

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)
703.0	0.38	158.84	703.0	-432.0	-3.4	0.2	-2.3	0.10	0.09	9.15
803.0	0.26	163.88	803.0	-332.0	-3.9	0.4	-2.8	0.12	-0.12	5.04
903.0	0.21	164.73	903.0	-232.0	-4.3	0.5	-3.1	0.05	-0.05	0.85
1,003.0	0.25	160.79	1,003.0	-132.0	-4.7	0.6	-3.5	0.04	0.04	-3.94
1,103.0	0.28	162.66	1,103.0	-32.0	-5.1	0.7	-3.9	0.03	0.03	1.87
1,203.0	0.25	153.72	1,203.0	68.0	-5.6	0.9	-4.3	0.05	-0.03	-8.94
1,303.0	0.43	183.58	1,303.0	168.0	-6.1	1.0	-4.7	0.25	0.18	29.86
1,403.0	0.58	187.03	1,403.0	268.0	-7.0	0.9	-5.2	0.15	0.15	3.45
1,503.0	0.68	199.28	1,503.0	368.0	-8.1	0.6	-5.7	0.17	0.10	12.25
1,603.0	0.66	195.73	1,603.0	468.0	-9.2	0.3	-6.1	0.05	-0.02	-3.55
1,703.0	0.56	192.91	1,703.0	568.0	-10.2	0.0	-6.6	0.10	-0.10	-2.82
1,803.0	0.51	180.40	1,803.0	668.0	-11.1	-0.1	-7.1	0.13	-0.05	-12.51
1,903.0	0.35	185.27	1,903.0	768.0	-11.9	-0.1	-7.5	0.16	-0.16	4.87
2,003.0	0.31	184.39	2,003.0	868.0	-12.5	-0.2	-7.8	0.04	-0.04	-0.88
2,103.0	0.30	172.14	2,103.0	968.0	-13.0	-0.1	-8.2	0.07	-0.01	-12.25
2,203.0	0.30	176.75	2,202.9	1,067.9	-13.5	-0.1	-8.6	0.02	0.00	4.61
2,303.0	0.38	167.92	2,302.9	1,167.9	-14.1	0.0	-9.0	0.10	0.08	-8.83
2,403.0	0.34	169.23	2,402.9	1,267.9	-14.7	0.1	-9.5	0.04	-0.04	1.31
2,503.0	0.34	164.07	2,502.9	1,367.9	-15.3	0.2	-10.0	0.03	0.00	-5.16
2,603.0	0.35	158.82	2,602.9	1,467.9	-15.9	0.4	-10.5	0.03	0.01	-5.25
2,703.0	0.35	163.67	2,702.9	1,567.9	-16.4	0.6	-11.0	0.03	0.00	4.85
2,803.0	0.26	161.97	2,802.9	1,667.9	-17.0	0.8	-11.4	0.09	-0.09	-1.70
2,903.0	0.27	168.57	2,902.9	1,767.9	-17.4	0.9	-11.8	0.03	0.01	6.60
3,003.0	0.25	195.94	3,002.9	1,867.9	-17.8	0.9	-12.1	0.12	-0.02	27.37
3,103.0	0.31	186.19	3,102.9	1,967.9	-18.3	0.8	-12.3	0.08	0.06	-9.75
3,203.0	0.31	174.11	3,202.9	2,067.9	-18.9	0.8	-12.7	0.07	0.00	-12.08
3,303.0	0.36	172.03	3,302.9	2,167.9	-19.4	0.9	-13.1	0.05	0.05	-2.08
3,403.0	0.38	174.37	3,402.9	2,267.9	-20.1	1.0	-13.6	0.03	0.02	2.34
3,503.0	0.39	174.32	3,502.9	2,367.9	-20.8	1.0	-14.0	0.01	0.01	-0.05
3,603.0	0.46	168.75	3,602.9	2,467.9	-21.5	1.1	-14.6	0.08	0.07	-5.57
3,703.0	0.38	184.92	3,702.9	2,567.9	-22.2	1.2	-15.1	0.14	-0.08	16.17
3,803.0	0.35	195.58	3,802.9	2,667.9	-22.8	1.1	-15.4	0.07	-0.03	10.66
3,903.0	0.34	201.14	3,902.9	2,767.9	-23.4	0.9	-15.6	0.03	-0.01	5.56
4,003.0	0.38	218.02	4,002.9	2,867.9	-23.9	0.6	-15.7	0.11	0.04	16.88
4,103.0	0.30	241.11	4,102.9	2,967.9	-24.3	0.1	-15.6	0.16	-0.08	23.09
4,203.0	0.34	265.31	4,202.9	3,067.9	-24.5	-0.4	-15.3	0.14	0.04	24.20
4,303.0	0.49	274.63	4,302.9	3,167.9	-24.5	-1.1	-14.8	0.16	0.15	9.32
4,403.0	0.61	283.56	4,402.9	3,267.9	-24.3	-2.1	-13.9	0.15	0.12	8.93
4,503.0	0.85	283.80	4,502.9	3,367.9	-24.0	-3.3	-12.8	0.24	0.24	0.24
4,603.0	1.11	287.26	4,602.9	3,467.9	-23.5	-4.9	-11.2	0.27	0.26	3.46
4,623.0	1.11	287.70	4,622.9	3,487.9	-23.4	-5.3	-10.9	0.04	0.00	2.20
4,644.0	1.00	282.60	4,643.9	3,508.9	-23.3	-5.7	-10.5	0.69	-0.52	-24.30

KOP=4837' MD



PHX
Survey Report



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Site Ritchie County 515278
Company:	EQT Production - Murkum	TVD Reference:	K1 @ 1135.0usft
Project:	Ritchie County, WV	MD Reference:	K3 @ 1135.0usft
Site:	Ritchie County 515279	North Reference:	Grid
Well:	Well #515279	Survey Calculation Method:	Minimum Curvature
Wellbore:	Main Wellbore		
Design:	As Drilled		

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)
4,687.0	1.90	242.40	4,686.9	3,551.9	-23.6	-6.7	-9.9	3.04	2.09	-93.47
4,730.0	3.60	222.40	4,729.8	3,594.8	-24.9	-8.2	-9.6	4.48	3.95	-46.52
4,773.0	5.80	207.40	4,772.7	3,637.7	-27.8	-10.1	-10.0	5.82	5.12	-34.88
4,793.0	6.90	206.10	4,792.5	3,657.5	-29.8	-11.1	-10.5	5.55	5.50	-6.50
4,816.0	8.20	208.80	4,815.3	3,680.3	-32.5	-12.5	-11.1	5.86	5.65	11.74
4,836.0	8.90	199.50	4,835.1	3,700.1	-35.2	-13.7	-11.9	7.74	3.50	-46.50
4,859.0	9.60	198.60	4,857.8	3,722.8	-38.7	-14.9	-13.2	3.11	3.04	-3.91
4,902.0	10.10	192.90	4,900.2	3,765.2	-45.8	-16.9	-16.2	2.55	1.16	-13.26
4,945.0	10.70	184.20	4,942.5	3,807.5	-53.4	-18.1	-20.2	3.91	1.40	-20.23
4,989.0	11.80	179.90	4,985.6	3,850.6	-62.0	-18.3	-25.5	3.14	2.50	-9.77
5,032.0	12.70	177.60	5,027.7	3,892.7	-71.1	-18.1	-31.5	2.38	2.09	-5.35
5,076.0	13.10	178.10	5,070.6	3,935.6	-80.9	-17.8	-38.0	0.94	0.91	1.14
5,118.0	13.20	177.70	5,111.4	3,976.4	-90.5	-17.4	-44.4	0.32	0.24	-0.95
5,162.0	13.60	179.30	5,154.3	4,019.3	-100.7	-17.2	-51.1	1.24	0.91	3.64
5,204.0	14.10	182.10	5,195.0	4,060.0	-110.7	-17.3	-57.4	1.99	1.19	6.67
5,247.0	14.40	184.20	5,236.7	4,101.7	-121.3	-17.9	-63.7	1.39	0.70	4.88
5,291.0	14.60	183.40	5,279.3	4,144.3	-132.3	-18.6	-70.2	0.64	0.45	-1.82
Plan Top On=53.0° Me										
5,310.0	14.90	184.30	5,297.7	4,162.7	-137.1	-18.9	-73.0	1.99	1.58	4.74
5,364.0	15.30	185.90	5,349.8	4,214.8	-151.1	-20.2	-81.0	1.07	0.74	2.95
5,396.0	14.90	186.90	5,380.7	4,245.7	-159.4	-21.1	-85.6	1.49	-1.25	3.13
5,427.0	16.50	189.20	5,410.6	4,275.6	-167.7	-22.3	-90.0	5.54	5.16	7.42
5,458.0	19.90	190.60	5,440.0	4,305.0	-177.2	-24.0	-94.8	11.06	10.97	4.52
5,490.0	22.30	191.90	5,469.9	4,334.9	-188.5	-26.2	-100.3	7.64	7.50	4.06
5,521.0	24.50	193.10	5,498.3	4,363.3	-200.5	-28.9	-105.9	7.26	7.10	3.87
5,553.0	27.80	194.50	5,527.0	4,392.0	-214.2	-32.3	-112.0	10.49	10.31	4.38
5,584.0	31.60	195.90	5,553.9	4,418.9	-229.1	-36.3	-118.4	12.46	12.26	4.52
5,616.0	34.90	197.70	5,580.7	4,445.7	-245.8	-41.4	-125.2	10.76	10.31	5.63
5,647.0	37.50	198.90	5,605.7	4,470.7	-263.2	-47.1	-131.9	8.69	8.39	3.87
5,679.0	40.20	199.60	5,630.6	4,495.6	-282.2	-53.7	-138.9	8.55	8.44	2.19
5,710.0	42.70	199.70	5,653.9	4,518.9	-301.5	-60.6	-145.9	8.07	8.06	0.32
5,742.0	45.10	200.40	5,676.9	4,541.9	-322.3	-68.3	-153.4	7.65	7.50	2.19
5,774.0	47.80	201.30	5,699.0	4,564.0	-344.0	-76.5	-160.9	8.68	8.44	2.81
5,805.0	50.30	202.00	5,719.3	4,584.3	-365.8	-85.2	-168.1	8.24	8.06	2.26
5,837.0	53.70	203.70	5,739.0	4,604.0	-389.0	-95.0	-175.4	11.42	10.63	5.31
5,868.0	57.00	205.70	5,756.6	4,621.6	-412.2	-105.6	-182.0	11.89	10.65	6.45
5,900.0	60.60	206.30	5,773.2	4,638.2	-436.7	-117.6	-188.5	11.36	11.25	1.88
5,932.0	63.90	206.10	5,788.1	4,653.1	-462.2	-130.1	-195.1	10.33	10.31	-0.63
5,963.0	66.40	205.20	5,801.1	4,666.1	-487.5	-142.3	-201.9	8.48	8.06	-2.90
6,026.0	69.10	204.60	5,825.0	4,690.0	-540.4	-166.8	-216.8	4.38	4.29	-0.95
6,090.0	69.50	204.50	5,847.6	4,712.6	-594.9	-191.7	-232.5	0.64	0.63	-0.16
6,153.0	70.20	204.10	5,869.3	4,734.3	-648.8	-216.0	-248.2	1.26	1.11	-0.63

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	
Company:	EQT Production - Marcellus	TVD Reference:	
Project:	Richia County, WV	MD Reference:	
Site:	Richia County 515270	North Reference:	
Well:	Well #5 18279	Survey Calculation Method:	
Wellbore:	Main Wellbore		
Design:	As Drilled		

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)
6,216.0	71.00	203.60	5,890.2	4,755.2	-703.1	-240.1	-264.4	1.47	1.27	-0.79
6,279.0	72.00	203.40	5,910.2	4,775.2	-757.9	-263.9	-281.1	1.62	1.59	-0.32
6,342.0	71.40	204.70	5,930.0	4,795.0	-812.5	-288.3	-297.2	2.18	-0.95	2.06
6,405.0	71.50	205.20	5,950.0	4,815.0	-866.7	-313.5	-312.4	0.77	0.16	0.79
6,468.0	70.40	205.40	5,970.6	4,835.6	-920.5	-338.9	-327.2	1.77	-1.75	0.32
6,500.0	69.80	205.60	5,981.5	4,846.5	-947.7	-351.9	-334.6	1.96	-1.88	0.63
6,531.0	70.40	205.30	5,992.0	4,857.0	-974.0	-364.4	-341.8	2.14	1.94	-0.97
6,563.0	70.50	206.10	6,002.7	4,867.7	-1,001.2	-377.5	-349.1	2.38	0.31	2.50
6,595.0	69.30	209.30	6,013.7	4,878.7	-1,027.8	-391.4	-355.3	10.11	-3.75	10.00
6,626.0	68.10	212.80	6,025.0	4,890.0	-1,052.5	-406.3	-359.7	11.21	-3.87	11.29
6,658.0	67.40	216.10	6,037.1	4,902.1	-1,076.9	-423.1	-362.4	9.79	-2.19	10.31
6,690.0	67.00	219.40	6,049.5	4,914.5	-1,100.2	-441.1	-363.4	9.59	-1.25	10.31
6,721.0	66.60	222.60	6,061.7	4,926.7	-1,121.7	-459.8	-362.7	9.57	-1.29	10.32
6,753.0	66.20	226.10	6,074.6	4,939.6	-1,142.7	-480.3	-360.4	10.10	-1.25	10.94
6,784.0	65.60	228.70	6,087.2	4,952.2	-1,161.9	-501.1	-356.6	7.90	-1.94	8.39
6,816.0	65.20	231.90	6,100.5	4,965.5	-1,180.4	-523.5	-351.2	9.18	-1.25	10.00
6,847.0	65.10	235.10	6,113.6	4,978.6	-1,197.2	-546.1	-344.5	9.37	-0.32	10.32
6,879.0	65.10	238.90	6,127.0	4,992.0	-1,213.0	-570.5	-335.9	10.77	0.00	11.88
6,911.0	65.40	242.50	6,140.4	5,005.4	-1,227.2	-595.8	-325.5	10.26	0.94	11.25
6,942.0	65.10	246.50	6,153.4	5,018.4	-1,239.3	-621.2	-313.7	11.76	-0.97	12.90
6,974.0	65.10	249.60	6,166.9	5,031.9	-1,250.2	-648.1	-299.9	8.79	0.00	9.69
7,005.0	65.30	253.20	6,179.9	5,044.9	-1,259.1	-674.8	-285.1	10.56	0.65	11.61
7,037.0	65.40	256.40	6,193.3	5,058.3	-1,266.8	-702.8	-268.4	9.09	0.31	10.00
7,068.0	65.50	259.90	6,206.1	5,071.1	-1,272.5	-730.4	-250.8	10.27	0.32	11.29
7,100.0	66.20	263.00	6,219.2	5,084.2	-1,276.9	-759.3	-231.4	9.11	2.19	9.69
7,131.0	66.50	266.90	6,231.7	5,096.7	-1,279.4	-787.6	-211.2	11.56	0.97	12.58
7,163.0	66.50	270.10	6,244.4	5,109.4	-1,280.1	-816.9	-189.2	9.17	0.00	10.00
7,194.0	67.00	272.90	6,256.7	5,121.7	-1,279.4	-845.4	-166.8	8.45	1.61	9.03
7,226.0	67.90	275.90	6,269.0	5,134.0	-1,277.1	-874.8	-142.7	9.10	2.81	9.38
7,258.0	68.40	279.00	6,280.9	5,145.9	-1,273.3	-904.3	-117.5	9.13	1.56	9.69
7,289.0	69.10	281.70	6,292.1	5,157.1	-1,268.1	-932.7	-92.4	8.43	2.26	8.71
7,321.0	69.80	284.60	6,303.3	5,168.3	-1,261.3	-961.9	-65.6	8.76	2.19	9.06
7,352.0	70.50	287.50	6,313.9	5,178.9	-1,253.2	-989.9	-38.9	9.08	2.26	9.35
7,384.0	71.20	290.50	6,324.4	5,189.4	-1,243.4	-1,018.5	-10.6	9.12	2.19	9.38
7,415.0	72.80	293.30	6,334.0	5,199.0	-1,232.4	-1,045.8	17.5	10.02	5.16	9.03
7,447.0	74.10	296.80	6,343.1	5,208.1	-1,219.4	-1,073.6	47.2	11.24	4.06	10.94
7,478.0	75.20	300.00	6,351.3	5,216.3	-1,205.2	-1,099.9	76.5	10.57	3.55	10.32
7,510.0	76.50	302.80	6,359.1	5,224.1	-1,189.0	-1,126.4	107.2	9.41	4.06	8.75
7,541.0	77.30	305.80	6,366.1	5,231.1	-1,172.0	-1,151.3	137.2	9.77	2.58	9.68
7,573.0	78.50	308.60	6,372.8	5,237.8	-1,153.1	-1,176.2	168.5	9.34	3.75	8.75
7,604.0	79.40	312.40	6,378.8	5,243.8	-1,133.3	-1,199.4	198.9	12.38	2.90	12.26
7,636.0	81.10	314.90	6,384.2	5,249.2	-1,111.5	-1,222.2	230.4	9.35	5.31	7.81
7,667.0	82.50	317.40	6,388.6	5,253.6	-1,089.4	-1,243.4	260.8	9.17	4.52	8.06



PHX
Survey Report



Database:	EDM 5000 1 Single User Ob	Local Co-ordinate Reference:	Slay Ritchie County S15279
Company:	EDT Production - Marcellus	TVD Reference:	KB eg 1135.0usft
Project:	Ritchie County, WV	MD Reference:	KB eg 1135.0usft
Site:	Ritchie County S15279	North Reference:	Grid
Well:	Well #515279	Survey Calculation Method:	Minimum Curvature
Wellbore:	Main Wellbore		
Design:	As Drilled		

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)
7,699.0	84.10	320.90	6,392.4	5,257.4	-1,065.4	-1,264.2	292.2	11.96	5.00	10.94
7,731.0	85.90	323.80	6,395.1	5,260.1	-1,040.1	-1,283.7	323.3	10.64	5.63	9.06
7,762.0	88.10	326.80	6,396.8	5,261.8	-1,014.7	-1,301.3	353.1	11.99	7.10	9.68
7,793.0	88.90	330.40	6,397.6	5,262.6	-988.2	-1,317.5	382.4	11.89	2.58	11.61
7,825.0	89.10	333.40	6,398.1	5,263.1	-960.0	-1,332.5	412.0	9.39	0.63	9.38
LP=7855' MD/8399' TVD										
7,856.0	89.60	333.80	6,398.5	5,263.5	-932.3	-1,346.3	440.4	2.07	1.61	1.29
7,919.0	91.60	336.00	6,397.8	5,262.8	-875.2	-1,373.0	497.4	4.72	3.17	3.49
7,982.0	90.50	335.10	6,396.7	5,261.7	-817.9	-1,399.1	554.1	2.26	-1.75	-1.43
8,045.0	90.50	334.80	6,396.1	5,261.1	-760.8	-1,425.8	611.0	0.48	0.00	-0.48
8,108.0	91.30	334.90	6,395.1	5,260.1	-703.8	-1,452.5	668.0	1.28	1.27	0.16
8,171.0	89.20	334.50	6,394.9	5,259.9	-646.8	-1,479.5	725.1	3.39	-3.33	-0.63
8,235.0	89.10	333.80	6,395.8	5,260.8	-589.2	-1,507.4	783.4	1.10	-0.16	-1.09
8,298.0	89.80	333.60	6,396.4	5,261.4	-532.8	-1,535.3	840.9	1.16	1.11	-0.32
8,360.0	90.30	333.10	6,396.4	5,261.4	-477.4	-1,563.1	897.7	1.14	0.81	-0.81
8,423.0	89.60	334.70	6,396.4	5,261.4	-420.8	-1,590.8	955.2	2.77	-1.11	2.54
8,487.0	89.80	336.00	6,396.8	5,261.8	-362.6	-1,617.5	1,012.9	2.06	0.31	2.03
8,550.0	90.40	336.10	6,396.6	5,261.6	-305.0	-1,643.1	1,069.3	0.97	0.95	0.16
8,613.0	88.90	336.10	6,397.0	5,262.0	-247.4	-1,668.6	1,125.8	2.38	-2.38	0.00
8,676.0	89.10	336.50	6,398.1	5,263.1	-189.8	-1,693.9	1,182.1	0.71	0.32	0.63
8,739.0	89.50	335.70	6,398.9	5,263.9	-132.2	-1,719.4	1,238.5	1.42	0.63	-1.27
8,802.0	90.00	335.70	6,399.2	5,264.2	-74.8	-1,745.4	1,295.1	0.79	0.79	0.00
8,865.0	90.60	335.60	6,398.8	5,263.8	-17.4	-1,771.3	1,351.8	0.97	0.95	-0.16
8,928.0	89.90	335.40	6,398.6	5,263.6	40.0	-1,797.5	1,408.5	1.16	-1.11	-0.32
8,992.0	90.00	335.20	6,398.6	5,263.6	98.1	-1,824.2	1,466.2	0.35	0.16	-0.31
9,054.0	90.60	335.30	6,398.3	5,263.3	154.4	-1,850.2	1,522.2	0.98	0.97	0.16
9,118.0	88.30	333.90	6,398.9	5,263.9	212.2	-1,877.6	1,580.2	4.21	-3.59	-2.19
9,180.0	88.20	333.80	6,400.8	5,265.8	267.8	-1,904.9	1,636.7	0.23	-0.16	-0.16
9,244.0	88.80	333.60	6,402.5	5,267.5	325.2	-1,933.3	1,695.2	0.99	0.94	-0.31
9,307.0	89.60	333.60	6,403.4	5,268.4	381.6	-1,961.3	1,752.8	1.27	1.27	0.00
9,370.0	90.50	333.80	6,403.3	5,268.3	438.1	-1,989.2	1,810.3	1.46	1.43	0.32
9,433.0	91.40	333.90	6,402.3	5,267.3	494.6	-2,016.9	1,867.8	1.44	1.43	0.16
9,496.0	90.40	334.30	6,401.3	5,266.3	551.3	-2,044.5	1,925.2	1.71	-1.59	0.63
9,559.0	90.40	334.00	6,400.8	5,265.8	608.0	-2,071.9	1,982.5	0.48	0.00	-0.48
9,622.0	89.60	335.10	6,400.8	5,265.8	664.9	-2,099.0	2,039.7	2.16	-1.27	1.75
9,685.0	89.60	335.80	6,401.3	5,266.3	722.2	-2,125.2	2,096.4	1.11	0.00	1.11
9,748.0	90.50	336.00	6,401.2	5,266.2	779.7	-2,150.9	2,153.0	1.46	1.43	0.32
9,812.0	89.20	336.20	6,401.4	5,266.4	838.2	-2,176.8	2,210.3	2.06	-2.03	0.31
9,875.0	88.80	336.40	6,402.5	5,267.5	895.9	-2,202.1	2,266.6	0.71	-0.63	0.32
9,938.0	89.50	336.10	6,403.4	5,268.4	953.5	-2,227.5	2,323.0	1.21	1.11	-0.48
10,001.0	90.20	336.40	6,403.6	5,268.6	1,011.2	-2,252.9	2,379.3	1.21	1.11	0.48
10,064.0	91.00	336.40	6,402.9	5,267.9	1,068.9	-2,278.1	2,435.6	1.27	1.27	0.00
10,127.0	89.20	335.90	6,402.8	5,267.8	1,126.6	-2,303.6	2,492.0	2.97	-2.86	-0.79



PHX
Survey Report



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Site Ritchie County 515279
Company:	EQT Production - Marcellus	TVD Reference:	KB @ 1135.0usft
Project:	Ritchie County, WV	MD Reference:	KB @ 1135.0usft
Site:	Ritchie County 515279	North Reference:	Grid
Well:	Well #515279	Survey Calculation Method:	Minimum Curvature
Wellbore:	Main Wellbore		
Design:	As Drilled		

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)
10,190.0	89.00	335.90	6,403.8	5,268.8	1,184.1	-2,329.3	2,548.5	0.32	-0.32	0.00
10,253.0	89.60	335.70	6,404.6	5,269.6	1,241.5	-2,355.1	2,605.1	1.00	0.95	-0.32
10,317.0	90.30	335.70	6,404.6	5,269.6	1,299.8	-2,381.5	2,662.6	1.09	1.09	0.00
10,380.0	88.60	334.90	6,405.2	5,270.2	1,357.1	-2,407.8	2,719.4	2.98	-2.70	-1.27
10,443.0	88.70	334.60	6,406.7	5,271.7	1,414.0	-2,434.7	2,776.5	0.50	0.16	-0.48
10,506.0	89.30	334.70	6,407.8	5,272.8	1,471.0	-2,461.6	2,833.6	0.97	0.95	0.16
10,569.0	90.10	334.80	6,408.1	5,273.1	1,527.9	-2,488.5	2,890.7	1.28	1.27	0.16
10,633.0	91.00	335.10	6,407.5	5,272.5	1,585.9	-2,515.6	2,948.5	1.48	1.41	0.47
10,696.0	91.60	334.70	6,406.1	5,271.1	1,643.0	-2,542.3	3,005.5	1.14	0.95	-0.63
10,759.0	89.90	333.90	6,405.3	5,270.3	1,699.7	-2,569.6	3,062.8	2.98	-2.70	-1.27
10,822.0	89.50	332.40	6,405.6	5,270.6	1,755.9	-2,598.1	3,120.6	2.46	-0.63	-2.38
10,885.0	90.10	332.70	6,405.8	5,270.8	1,811.8	-2,627.1	3,178.6	1.06	0.95	0.48
10,948.0	89.00	333.10	6,406.3	5,271.3	1,867.9	-2,655.8	3,236.5	1.86	-1.75	0.63
11,010.0	89.30	333.10	6,407.2	5,272.2	1,923.2	-2,683.9	3,293.4	0.48	0.48	0.00
11,074.0	90.10	333.60	6,407.6	5,272.6	1,980.4	-2,712.6	3,352.1	1.47	1.25	0.78
11,136.0	88.90	334.30	6,408.1	5,273.1	2,036.1	-2,739.8	3,408.6	2.24	-1.94	1.13
11,200.0	89.20	334.60	6,409.2	5,274.2	2,093.8	-2,767.4	3,466.7	0.66	0.47	0.47
11,263.0	89.70	334.10	6,409.8	5,274.8	2,150.6	-2,794.7	3,524.0	1.12	0.79	-0.79
11,326.0	90.50	334.00	6,409.7	5,274.7	2,207.3	-2,822.2	3,581.4	1.28	1.27	-0.16
11,389.0	89.60	335.30	6,409.6	5,274.6	2,264.2	-2,849.2	3,638.5	2.51	-1.43	2.06
11,452.0	89.80	335.80	6,409.9	5,274.9	2,321.5	-2,875.3	3,695.2	0.85	0.32	0.79
Final Survey/ Deepest Point of Well=11494' MD/ 6410' TVD										
11,494.0	90.20	335.90	6,409.9	5,274.9	2,359.9	-2,892.5	3,732.9	0.98	0.95	0.24
Projection to TD=11547' MD/ 6410' TVD										
11,547.0	90.20	335.90	6,409.8	5,274.8	2,408.2	-2,914.1	3,780.4	0.00	0.00	0.00

Design Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
4,687.0	4,686.9	-23.6	-6.7	KOP=4887' MD
5,310.0	5,297.7	-137.1	-18.9	Plan Tie On=5310' MD
7,856.0	6,398.5	-932.3	-1,346.3	LP=7856' MD/ 6399' TVD
11,494.0	6,409.9	2,359.9	-2,892.5	Final Survey/ Deepest Point of Well=11494' MD/ 6410' TVD
11,547.0	6,409.8	2,408.2	-2,914.1	Projection to TD=11547' MD/ 6410' TVD

Checked By: _____ Approved By: _____ Date: _____

09/16/2016



EQT Production - Marcellus

Project: Ritchie County, WV
 Site: Ritchie County 515279
 Well: Well #515279
 Wellbore: Main Wellbore
 Design: As Drilled

