



EQT PRODUCTION

Doddridge County, WV

OXF 153

Well #516239 - Marcellus - Slot 516239

API #47-17006729

Main Wellbore

Design: 516239 As Drilled Surveys

Standard Survey Report

05 October, 2015



WV Department of
Environmental Protection

07701/2016



Phoenix Technology Services
Survey Report



Database:	EDM 6000 1 Single User Db	Local Co-ordinate Reference:	Well Well #516239 - Marcellus - Slot 516239
Company:	EQT PRODUCTION	TVD Reference:	KB 23' @ 1157.0usft
Project:	Doddridge County, WV	MD Reference:	KB 23' @ 1157.0usft
Site:	OXF 153	North Reference:	Grid
Well:	Well #516239 - Marcellus	Survey Calculation Method:	Minimum Curvature
Wellbore:	Main Wellbore		
Design:	516239 As Drilled Surveys		

Project Doddridge 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		

Site OXF 153

Site Position:		Northing:	254,054.20 usft	Latitude:	39.19
From:	Map	Easting:	1,626,467.50 usft	Longitude:	-80.82
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "	Grid Convergence:	-0.84 °

Well Well #516239 - Marcellus - Slot 516239

Well Position	+N/-S	0.0 usft	Northing:	254,050.60 usft	Latitude:	39° 11' 23.988 N
	+E/-W	0.0 usft	Easting:	1,626,482.00 usft	Longitude:	80° 49' 4.196 W
Position Uncertainty		0.0 usft	Wellhead Elevation:	usft	Ground Level:	1,141.0 usft

Wellbore Main Wellbore

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	9/17/2015	-7.72	66.62	52,147

Design 516239 As Drilled Surveys

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	186.34	

Survey Program Date 10/5/2015

From (')	To (usft)	Survey (Wellbore)	Tool Name	Description
0.00	3,932.0	516239 Gyrodata Gyros (Main Wellbore)	GYD_DP_MS	Gyrodata gyro-compassing and drop
0.00	10,595.0	516239 PHX MWD (Main Wellbore)	PHX+MWD+HDGM	PHX+OWSG MWD + HDGM

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	-1,157.0	0.0	0.0	0.0	0.00	0.00	0.00
103.0	0.02	96.96	103.0	-1,054.0	0.0	0.0	0.0	0.02	0.02	0.00
203.0	0.04	120.96	203.0	-954.0	0.0	0.1	0.0	0.02	0.02	24.00
303.0	0.09	72.21	303.0	-854.0	0.0	0.2	0.0	0.07	0.05	31.09
403.0	0.13	103.30	403.0	-754.0	0.0	0.4	0.0	0.07	0.04	31.09
503.0	0.14	119.55	503.0	-654.0	-0.1	0.6	0.0	0.04	0.01	16.25
603.0	0.18	117.04	603.0	-554.0	-0.2	0.8	0.1	0.04	0.04	-2.51
703.0	0.15	114.45	703.0	-454.0	-0.4	1.1	0.2	0.03	-0.03	-2.59



Phoenix Technology Services
Survey Report



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well: Well #516239 - Marcellus - Slot 516239
Company:	EQT PRODUCTION	TVD Reference:	KB 23 @ 1157' Qual
Project:	Doddridge County, WV	MD Reference:	KB 23 @ 1157' Qual
Site:	DXF 153	North Reference:	Grid
Well:	Well #516239 - Marcellus	Survey Calculation Method:	Minimum Curvature
Wellbore:	Main Wellbore		
Design:	516239 As Drilled Surveys		

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	0.23	104.06	803.0	-354.0	-0.5	1.4	0.3	0.09	0.08	-10.39
903.0	0.23	99.95	903.0	-254.0	-0.5	1.8	0.3	0.02	0.00	-4.11
1,003.0	0.25	106.98	1,003.0	-154.0	-0.6	2.2	0.4	0.04	0.02	7.03
1,103.0	0.30	109.53	1,103.0	-54.0	-0.8	2.6	0.5	0.05	0.05	2.55
1,203.0	0.32	143.98	1,203.0	46.0	-1.1	3.1	0.8	0.18	0.02	34.45
1,303.0	0.35	145.28	1,303.0	146.0	-1.6	3.4	1.2	0.03	0.03	1.30
1,403.0	0.37	143.65	1,403.0	246.0	-2.1	3.8	1.7	0.02	0.02	-1.63
1,503.0	0.45	117.21	1,503.0	346.0	-2.5	4.3	2.0	0.20	0.08	-26.44
1,603.0	0.48	86.55	1,603.0	446.0	-2.7	5.1	2.1	0.25	0.03	-30.66
1,703.0	0.54	85.54	1,703.0	546.0	-2.6	6.0	2.0	0.06	0.06	-1.01
1,803.0	0.22	109.32	1,803.0	646.0	-2.7	6.6	1.9	0.35	-0.32	23.78
1,903.0	0.14	124.50	1,903.0	746.0	-2.8	6.9	2.0	0.09	-0.08	15.18
2,003.0	0.13	126.02	2,003.0	846.0	-2.9	7.1	2.1	0.01	-0.01	1.52
2,103.0	0.14	127.74	2,103.0	946.0	-3.1	7.3	2.2	0.01	0.01	1.72
2,203.0	0.13	123.19	2,203.0	1,046.0	-3.2	7.5	2.4	0.01	-0.01	-4.55
2,303.0	0.14	116.68	2,303.0	1,146.0	-3.3	7.7	2.5	0.02	0.01	-6.51
2,403.0	0.14	123.85	2,403.0	1,246.0	-3.4	7.9	2.6	0.02	0.00	7.17
2,503.0	0.16	117.55	2,503.0	1,346.0	-3.6	8.1	2.7	0.03	0.02	-6.30
2,603.0	0.19	124.36	2,603.0	1,446.0	-3.7	8.4	2.8	0.04	0.03	6.81
2,703.0	0.17	121.83	2,703.0	1,546.0	-3.9	8.6	2.9	0.02	-0.02	-2.53
2,803.0	0.15	142.92	2,803.0	1,646.0	-4.1	8.8	3.1	0.06	-0.02	21.09
2,903.0	0.16	144.22	2,903.0	1,746.0	-4.3	9.0	3.3	0.01	0.01	1.30
3,003.0	0.26	126.58	3,003.0	1,846.0	-4.6	9.3	3.5	0.12	0.10	-17.64
3,103.0	0.31	121.30	3,103.0	1,946.0	-4.8	9.7	3.7	0.06	0.05	-5.28
3,203.0	0.30	116.23	3,203.0	2,046.0	-5.1	10.1	3.9	0.03	-0.01	-5.07
3,303.0	0.26	119.83	3,303.0	2,146.0	-5.3	10.6	4.1	0.04	-0.04	3.60
3,403.0	0.13	189.23	3,403.0	2,246.0	-5.5	10.7	4.3	0.25	-0.13	69.40
3,503.0	0.13	152.46	3,503.0	2,346.0	-5.8	10.8	4.5	0.08	0.00	-36.77
3,603.0	0.09	146.29	3,603.0	2,446.0	-5.9	10.9	4.7	0.04	-0.04	-6.17
3,703.0	0.14	245.75	3,703.0	2,546.0	-6.0	10.8	4.8	0.18	0.05	99.46
3,803.0	0.16	289.87	3,803.0	2,646.0	-6.0	10.6	4.8	0.11	0.02	44.12
3,903.0	0.43	265.87	3,903.0	2,746.0	-6.0	10.1	4.9	0.29	0.27	-24.00
Gyro Tie On=1932' MD										
3,932.0	0.50	268.73	3,932.0	2,775.0	-6.0	9.8	4.9	0.25	0.24	9.86
3,948.0	0.40	288.50	3,948.0	2,791.0	-6.0	9.7	4.9	1.15	-0.63	123.56
3,980.0	0.60	274.20	3,980.0	2,823.0	-6.0	9.4	4.9	0.73	0.63	-44.69
4,011.0	2.60	258.10	4,011.0	2,854.0	-6.1	8.6	5.1	6.55	6.45	-51.94
4,042.0	6.40	257.20	4,041.8	2,884.8	-6.6	6.2	5.9	12.26	12.26	-2.90
4,074.0	10.10	258.40	4,073.5	2,916.5	-7.6	1.7	7.4	11.57	11.56	3.75
4,105.0	13.20	261.30	4,103.9	2,946.9	-8.7	-4.4	9.1	10.7	10.60	1.35
4,137.0	16.00	261.90	4,134.8	2,977.8	-9.8	-12.4	11.2	8.76	8.75	1.88
4,168.0	18.00	261.60	4,164.5	3,007.5	-11.1	-21.4	13.4	6.46	6.45	-0.97
4,200.0	20.40	261.60	4,194.7	3,037.7	-12.7	-31.8	16.1	7.50	7.50	0.00

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Phoenix Technology Services
Survey Report



Database:	EDM 5000.1 Single User Dc	Local Co-ordinate Reference:	Well Well #516239 - Marcellus - Slot 516239
Company:	EQT PRODUCTION	TVD Reference:	KB 23' @ 1157 Duff
Project:	Doddridge County, WV	MD Reference:	KB 23' @ 1157 Duff
Site:	DXF 163	North Reference:	Grid
Well:	Well #516239 - Marcellus	Survey Calculation Method:	Minimum Curvature
Wellbore:	Main Wellbore		
Design:	516239 As Called Surveys		

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)
4,231.0	22.40	261.40	4,223.6	3,066.6	-14.4	-43.0	19.0	6.46	6.45	-0.65
4,262.0	24.50	260.50	4,252.0	3,095.0	-16.3	-55.2	22.3	6.87	6.77	-2.90
4,294.0	25.40	260.60	4,281.0	3,124.0	-18.5	-68.5	26.0	2.82	2.81	0.31
4,325.0	27.00	260.00	4,308.8	3,151.8	-20.8	-82.0	29.7	5.23	5.16	-1.94
4,357.0	29.70	259.60	4,337.0	3,180.0	-23.5	-96.9	34.1	8.46	8.44	-1.25
4,388.0	32.20	259.60	4,363.6	3,206.6	-26.4	-112.6	38.7	8.06	8.06	0.00
4,420.0	34.50	259.90	4,390.3	3,233.3	-29.5	-129.9	43.7	7.21	7.19	0.94
4,451.0	37.30	259.70	4,415.4	3,258.4	-32.7	-147.8	48.9	9.04	9.03	-0.65
4,514.0	38.40	259.20	4,465.1	3,308.1	-39.8	-185.8	60.1	1.81	1.75	-0.79
4,577.0	38.20	257.50	4,514.6	3,357.6	-47.7	-224.1	72.2	1.70	-0.32	-2.70
4,640.0	39.00	258.30	4,563.8	3,406.8	-55.9	-262.5	84.6	1.50	1.27	1.27
4,702.0	39.30	260.00	4,611.9	3,454.9	-63.3	-300.9	96.1	1.80	0.48	2.74
4,765.0	38.80	258.70	4,660.8	3,503.8	-70.6	-339.9	107.7	1.52	-0.79	-2.06
4,828.0	39.10	259.30	4,709.8	3,552.8	-78.2	-378.8	119.5	0.76	0.48	0.95
4,891.0	38.80	259.30	4,758.8	3,601.8	-85.5	-417.7	131.1	0.48	-0.48	0.00
4,954.0	39.20	259.10	4,807.8	3,650.8	-93.0	-456.7	142.8	0.67	0.63	-0.32
5,017.0	39.70	261.60	4,856.4	3,699.4	-99.7	-496.1	153.9	2.64	0.79	3.97
5,080.0	40.00	261.80	4,904.8	3,747.8	-105.5	-536.1	164.1	0.52	0.48	0.32
5,143.0	40.50	260.00	4,952.9	3,795.9	-111.9	-576.3	174.9	2.01	0.79	-2.86
5,206.0	40.10	259.10	5,000.9	3,843.9	-119.3	-616.3	186.7	1.12	-0.63	-1.43
5,269.0	41.00	260.80	5,048.8	3,891.8	-126.5	-656.7	198.2	2.26	1.43	2.70
5,332.0	40.70	262.30	5,096.5	3,939.5	-132.5	-697.4	208.7	1.63	-0.48	2.38
5,395.0	40.40	260.90	5,144.3	3,987.3	-138.5	-737.9	219.1	1.52	-0.48	-2.22
5,458.0	40.10	259.10	5,192.4	4,035.4	-145.6	-778.0	230.6	1.91	-0.48	-2.86
5,522.0	41.00	260.80	5,241.0	4,084.0	-152.8	-819.0	242.3	2.23	1.41	2.66
5,585.0	40.70	260.10	5,288.7	4,131.7	-159.7	-859.6	253.6	0.87	-0.48	-1.11
5,648.0	40.30	258.10	5,336.6	4,179.6	-167.4	-899.8	265.7	2.16	-0.63	-3.17
5,711.0	40.30	258.50	5,384.7	4,227.7	-175.7	-939.7	278.3	0.41	0.00	0.63
5,774.0	39.40	258.50	5,433.0	4,276.0	-183.7	-979.2	290.7	1.43	-1.43	0.00
5,837.0	40.80	258.70	5,481.2	4,324.2	-191.7	-1,019.0	303.1	2.23	2.22	0.32
5,900.0	41.00	261.90	5,528.8	4,371.8	-198.7	-1,059.7	314.5	3.34	0.32	5.08
5,962.0	40.10	260.70	5,575.9	4,418.9	-204.8	-1,099.5	324.9	1.92	-1.45	-1.94
6,025.0	39.40	261.10	5,624.4	4,467.4	-211.1	-1,139.3	335.6	1.18	-1.11	0.63
6,088.0	39.90	260.70	5,672.9	4,515.9	-217.5	-1,179.0	346.4	0.89	0.79	-0.63
6,151.0	41.50	260.70	5,720.7	4,563.7	-224.1	-1,219.5	357.4	2.54	2.54	0.00
6,214.0	44.20	262.10	5,766.8	4,609.8	-230.5	-1,261.9	368.5	4.54	4.29	2.22
6,277.0	43.70	261.10	5,812.2	4,655.2	-236.9	-1,305.1	379.6	1.36	-0.79	-1.59
6,340.0	43.40	259.80	5,857.9	4,700.9	-244.1	-1,347.9	391.5	1.50	0.34	-2.06
6,403.0	43.40	262.00	5,903.6	4,746.6	-251.0	-1,390.7	403.0	2.40	0.00	3.49
6,466.0	42.70	261.70	5,949.7	4,792.7	-257.1	-1,433.3	413.7	1.16	-1.11	0.00
6,529.0	42.20	260.60	5,996.2	4,839.2	-263.6	-1,475.3	424.9	4.42	0.79	-1.75
6,592.0	40.80	259.30	6,043.3	4,886.3	-270.9	-1,516.4	436.7	2.61	-2.22	-2.06



Phoenix Technology Services
Survey Report



Database:	EDM 5000.1 Single User Dr	Local Co-ordinate Reference:	Well Well #516238 - Marcellus - Plot 516238
Company:	EQT PRODUCTION	TVD Reference:	KB 23 @ 1167.0usft
Project:	Doddrige County, WV	MD Reference:	KB 29 @ 1157.0usft
Site:	DXF 13a	North Reference:	End
Well:	Well #516238 - Marcellus	Survey Calculation Method:	Minimum Curvature
Wellbore:	Main Wellbore		
Design:	E16238 A3 Driled Surveys		

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)
6,623.0	39.70	256.00	6,067.0	4,910.0	-275.2	-1,535.9	443.1	7.74	-3.55	-10.65
6,655.0	39.90	251.00	6,091.6	4,934.6	-281.0	-1,555.6	451.0	10.02	0.63	-15.63
6,686.0	40.60	246.80	6,115.3	4,958.3	-288.2	-1,574.2	460.2	9.04	2.26	-13.55
6,718.0	40.20	241.30	6,139.6	4,982.6	-297.3	-1,592.9	471.3	11.21	-1.25	-17.19
6,749.0	40.00	235.40	6,163.4	5,006.4	-307.7	-1,609.8	483.6	12.27	-0.65	-19.03
6,781.0	40.50	230.00	6,187.8	5,030.8	-320.2	-1,626.3	497.8	11.01	1.56	-16.88
6,812.0	40.90	225.90	6,211.3	5,054.3	-333.8	-1,641.3	513.0	8.72	1.29	-13.23
6,844.0	41.70	220.30	6,235.3	5,078.3	-349.2	-1,655.7	529.9	11.81	2.50	-17.50
6,875.0	42.30	215.10	6,258.4	5,101.4	-365.6	-1,668.4	547.6	11.39	1.94	-16.77
6,907.0	43.20	211.30	6,281.9	5,124.9	-383.8	-1,680.3	566.9	8.54	2.81	-11.88
6,938.0	44.00	208.40	6,304.3	5,147.3	-402.3	-1,690.9	586.5	6.95	2.58	-9.35
6,970.0	45.60	204.90	6,327.1	5,170.1	-422.5	-1,701.0	607.7	9.19	5.00	-10.94
7,001.0	47.30	200.50	6,348.4	5,191.4	-443.2	-1,709.6	629.2	11.66	5.48	-14.19
7,033.0	49.50	198.60	6,369.7	5,212.7	-465.7	-1,717.6	652.5	8.18	6.88	-5.94
7,064.0	51.20	196.80	6,389.4	5,232.4	-488.5	-1,724.9	675.9	7.07	5.48	-5.81
7,096.0	53.40	194.20	6,409.0	5,252.0	-512.9	-1,731.7	700.9	9.41	6.88	-8.13
7,127.0	55.40	190.20	6,427.1	5,270.1	-537.5	-1,737.0	726.0	12.31	6.45	-12.90
7,159.0	57.50	187.30	6,444.7	5,287.7	-563.8	-1,741.0	752.6	10.00	6.56	-9.06
7,190.0	59.60	184.90	6,460.9	5,303.9	-590.1	-1,743.8	779.1	9.46	6.77	-7.74
7,222.0	61.90	181.70	6,476.6	5,319.6	-618.0	-1,745.4	806.9	11.30	7.19	-10.00
7,253.0	64.60	179.70	6,490.5	5,333.5	-645.7	-1,745.7	834.5	10.44	8.71	-6.45
7,284.0	67.20	176.90	6,503.2	5,346.2	-674.0	-1,744.9	862.5	11.76	8.39	-9.03
7,316.0	69.10	174.30	6,515.1	5,358.1	-703.6	-1,742.6	891.7	9.60	5.94	-8.13
7,347.0	71.60	171.60	6,525.5	5,368.5	-732.5	-1,739.0	920.1	11.50	8.06	-8.71
7,379.0	73.60	168.90	6,535.1	5,378.1	-762.6	-1,733.9	949.4	10.19	6.25	-8.44
7,410.0	75.50	166.80	6,543.3	5,386.3	-791.8	-1,727.6	977.7	8.96	6.13	-6.77
7,442.0	77.20	164.30	6,550.9	5,393.9	-821.9	-1,719.8	1,006.8	9.27	5.31	-7.81
516251 LP 2099' VS										
7,451.6	77.94	163.61	6,553.0	5,396.0	-831.0	-1,717.2	1,015.5	10.40	7.72	-7.14
7,473.0	79.60	162.10	6,557.1	5,400.1	-851.0	-1,711.0	1,034.7	10.40	7.75	-7.08
7,505.0	82.10	159.80	6,562.2	5,405.2	-880.9	-1,700.7	1,063.3	10.55	7.81	-7.19
7,536.0	84.50	158.10	6,565.8	5,408.8	-909.6	-1,689.7	1,090.6	9.47	7.74	-5.48
7,568.0	84.80	156.80	6,568.8	5,411.8	-939.0	-1,677.4	1,118.5	4.15	0.94	-4.06
516238 Plat LP										
7,593.5	86.77	156.06	6,570.7	5,413.7	-962.3	-1,667.3	1,140.5	8.27	7.74	-2.90
516238 Plat LP p2										
7,594.4	86.84	156.03	6,570.7	5,413.7	-963.2	-1,666.9	1,141.3	8.27	7.74	-2.90
7,599.0	87.20	155.90	6,571.0	5,414.0	-967.3	-1,665.0	1,145.3	8.27	7.74	-2.90
7,663.0	89.60	155.10	6,572.8	5,415.8	-1,025.5	-1,638.5	1,200.2	3.95	3.75	-1.25
7,726.0	89.40	155.80	6,573.3	5,416.3	-1,082.9	-1,612.3	1,254.2	1.16	-0.32	1.11
7,789.0	88.50	156.50	6,574.5	5,417.5	-1,140.5	-1,586.9	1,308.7	1.81	-1.43	1.11
7,852.0	86.40	156.50	6,577.3	5,420.3	-1,198.2	-1,561.8	1,363.3	3.33	-3.33	0.00
7,915.0	87.40	156.10	6,580.7	5,423.7	-1,255.8	-1,536.5	1,417.7	1.71	1.59	-0.63



Phoenix Technology Services
Survey Report



Database:	EDM 5000 1 Single User Db	Local Co-ordinate Reference:	Well Well #518239 - Marcellus - Slot 518209
Company:	EQT PRODUCTION	TVD Reference:	KB 22 @ 1167.0usft
Project:	Dodderoga County, WV	MD Reference:	KB 23 @ 1157.0usft
Site:	DXF 153	North Reference:	Grid
Well:	Well #518239 - Marcellus	Survey Calculation Method:	Minimum Curvature
Wellbore:	Main Wellbore		
Design:	516235 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)
LP/Deepest Point=7978' MD/6502' TVD										
7,978.0	89.40	156.50	6,582.4	5,425.4	-1,313.4	-1,511.2	1,472.3	3.24	3.17	0.63
8,041.0	91.60	156.90	6,581.9	5,424.9	-1,371.3	-1,486.3	1,527.0	3.55	3.49	0.63
8,104.0	92.50	156.20	6,579.6	5,422.6	-1,429.1	-1,461.2	1,581.6	1.81	1.43	-1.11
8,167.0	92.20	156.40	6,577.0	5,420.0	-1,486.7	-1,435.9	1,636.1	0.57	-0.48	0.32
8,230.0	90.60	155.60	6,575.5	5,418.5	-1,544.2	-1,410.3	1,690.5	2.84	-2.54	-1.27
8,293.0	89.60	154.60	6,575.4	5,418.4	-1,601.4	-1,383.8	1,744.4	2.24	-1.59	-1.59
8,356.0	88.30	154.70	6,576.6	5,419.6	-1,658.3	-1,356.8	1,798.0	2.07	-2.06	0.16
8,419.0	88.40	154.10	6,578.4	5,421.4	-1,715.1	-1,329.6	1,851.4	0.97	0.16	-0.95
8,482.0	90.20	154.40	6,579.1	5,422.1	-1,771.8	-1,302.2	1,904.8	2.90	2.86	0.48
8,545.0	91.40	151.80	6,578.3	5,421.3	-1,828.0	-1,273.7	1,957.4	4.54	1.90	-4.13
8,608.0	90.90	153.90	6,577.0	5,420.0	-1,884.0	-1,245.0	2,010.0	3.43	-0.79	3.33
8,671.0	89.20	155.30	6,576.9	5,419.9	-1,940.9	-1,218.0	2,063.5	3.50	-2.70	2.22
8,734.0	89.30	155.70	6,577.8	5,420.8	-1,998.3	-1,191.8	2,117.6	0.65	0.16	0.63
8,797.0	90.90	155.90	6,577.7	5,420.7	-2,055.7	-1,166.0	2,171.9	2.56	2.54	0.32
8,861.0	91.80	155.80	6,576.1	5,419.1	-2,114.1	-1,139.8	2,227.0	1.41	1.41	-0.16
8,924.0	92.40	155.30	6,573.8	5,416.8	-2,171.4	-1,113.8	2,281.1	1.24	0.95	-0.79
8,987.0	92.00	156.70	6,571.4	5,414.4	-2,228.9	-1,088.2	2,335.4	2.31	-0.63	2.22
9,050.0	91.90	156.80	6,569.3	5,412.3	-2,286.8	-1,063.3	2,390.2	0.22	-0.16	0.16
9,113.0	92.50	156.90	6,566.9	5,409.9	-2,344.7	-1,038.6	2,445.0	0.97	0.95	0.16
9,177.0	93.40	155.50	6,563.6	5,406.6	-2,403.1	-1,012.8	2,500.3	2.60	1.41	-2.19
9,239.0	94.60	154.60	6,559.2	5,402.2	-2,459.2	-986.7	2,553.1	2.42	1.94	-1.45
9,302.0	93.90	154.40	6,554.6	5,397.6	-2,515.9	-959.6	2,606.5	1.16	-1.11	-0.32
9,365.0	91.80	154.60	6,551.4	5,394.4	-2,572.7	-932.5	2,659.9	3.35	-3.33	0.32
9,428.0	90.90	154.70	6,550.0	5,393.0	-2,629.6	-905.6	2,713.5	1.44	-1.43	0.16
9,491.0	89.50	154.70	6,549.7	5,392.7	-2,686.6	-878.7	2,767.2	2.22	-2.22	0.00
9,554.0	89.00	155.10	6,550.6	5,393.6	-2,743.6	-851.9	2,820.9	1.02	-0.79	0.63
9,617.0	89.80	153.90	6,551.2	5,394.2	-2,800.5	-824.8	2,874.4	2.29	1.27	-1.90
9,680.0	92.00	153.90	6,550.2	5,393.2	-2,857.1	-797.1	2,927.6	3.49	3.49	0.00
9,743.0	93.20	154.80	6,547.4	5,390.4	-2,913.8	-769.9	2,981.0	2.38	1.90	1.43
9,806.0	93.90	153.90	6,543.5	5,386.5	-2,970.5	-742.6	3,034.3	1.81	1.11	-1.43
9,869.0	94.00	154.30	6,539.1	5,382.1	-3,027.0	-715.2	3,087.5	0.65	0.16	0.63
9,933.0	92.60	154.80	6,535.4	5,378.4	-3,084.7	-687.7	3,141.8	2.32	-2.19	0.78
9,996.0	91.30	155.30	6,533.3	5,376.3	-3,141.8	-661.2	3,195.6	2.21	-2.06	0.79
10,059.0	89.00	155.40	6,533.1	5,376.1	-3,199.0	-634.9	3,249.6	3.65	-3.65	0.16
10,121.0	89.80	156.10	6,533.8	5,376.8	-3,255.6	-609.4	3,302.9	1.71	1.29	1.13
10,184.0	89.50	155.70	6,534.2	5,377.2	-3,313.1	-583.7	3,357.3	0.79	-0.48	-0.63
10,247.0	89.70	154.80	6,534.6	5,377.6	-3,370.3	-557.3	3,411.2	1.46	0.32	-1.43
10,310.0	90.60	154.30	6,534.4	5,377.4	-3,427.2	-530.3	3,464.8	1.65	-1.43	-0.79
10,373.0	90.90	154.00	6,533.6	5,376.6	-3,483.9	-502.8	3,518.1	0.67	0.48	0.16
10,436.0	91.40	153.80	6,532.4	5,375.4	-3,540.4	-475.1	3,571.2	0.85	0.79	-0.32
10,499.0	92.00	153.50	6,530.5	5,373.5	-3,596.9	-447.1	3,624.2	1.06	0.95	-0.48

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Phoenix Technology Services
Survey Report



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well Well #516239 - Marcellus - Slot 516239
Company:	EQT PRODUCTION	TVD Reference:	KB 23' @ 1157.0usft
Project:	Doddridge County, WV	MD Reference:	KB 23' @ 1157.0usft
Site:	OXF 153	North Reference:	Grid
Well:	Well #516239 - Marcellus	Survey Calculation Method:	Minimum Curvature
Wellbore:	Main Wellbore		
Design:	516239 As Drilled Surveys		

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)
10,540.0	92.10	153.40	6,529.0	5,372.0	-3,633.5	-428.8	3,658.6	0.34	0.24	-0.24
516239 Plat TD p2										
10,593.9	92.10	153.40	6,527.0	5,370.0	-3,681.6	-404.7	3,703.8	0.00	0.00	0.00
516239 Plat TD										
10,594.5	92.10	153.40	6,527.0	5,370.0	-3,682.2	-404.4	3,704.3	0.00	0.00	0.00
PROJ to Bit=10595' MD/6527' TVD										
10,595.0	92.10	153.40	6,527.0	5,370.0	-3,682.6	-404.2	3,704.8	0.00	0.00	0.00

Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (-967.3)	+E/-W (-1,677.4)	Northing (usft)	Easting (usft)	Latitude	Longitude
516239 Plat LP (copy)	0.00	0.00	6,563.0	-967.3	-1,677.4	253,083.30	1,624,804.60	39° 11' 14.185 N	80° 49' 25.318 W
- actual wellpath misses target center by 13.7usft at 7593.5usft MD (6570.7 TVD, -962.3 N, -1667.3 E)									
- Rectangle (sides W1,000.0 H1,000.0 D0.0)									
516251 LP 2099' VS	0.00	360.00	6,563.0	-987.1	-2,241.1	253,063.54	1,624,240.91	39° 11' 13.907 N	80° 49' 32.472 W
- actual wellpath misses target center by 546.7usft at 7451.6usft MD (6553.0 TVD, -831.0 N, -1717.2 E)									
- Point									
516239 Plat TD p2	0.00	360.00	6,580.0	-3,686.2	-409.5	250,364.40	1,626,072.50	39° 10' 47.498 N	80° 49' 8.709 W
- actual wellpath misses target center by 53.4usft at 10593.9usft MD (6527.0 TVD, -3681.6 N, -404.7 E)									
- Point									
516239 Plat LP p2	0.00	0.00	6,580.0	-967.3	-1,677.4	253,083.30	1,624,804.60	39° 11' 14.185 N	80° 49' 25.318 W
- actual wellpath misses target center by 14.6usft at 7594.4usft MD (6570.7 TVD, -963.2 N, -1666.9 E)									
- Rectangle (sides W1,000.0 H1,000.0 D0.0)									

Measured Depth (usft)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Comment
3,932.0	3,932.0	-6.0	9.8	Gyro Tie On=3932' MD
7,978.0	6,582.4	-1,313.4	-1,511.2	LP/Deepest Point=7978' MD/6582' TVD
10,540.0	6,529.0	-3,633.5	-428.8	Final Survey=10540' MD/6529' TVD
10,595.0	6,527.0	-3,682.6	-404.2	PROJ to Bit=10595' MD/6527' TVD

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EQT PRODUCTION

Project: Doddridge County, WV
Site: OXF 153
Well: Well #516239 - Marcellus
Wellbore: Main Wellbore
Design: 516239 As Drilled Surveys

