

17-06460

# **EQT Production - Marcellus**

Doddridge County, WV Grid

Doddridge County 513146

Well #513146

Main Wellbore

Design: 513146 As Drilled Surveys

## **Standard Survey Report**

26 December, 2014

Received  
Office of Oil & Gas  
AUG 19 2015

10/09/2015

**Phoenix Technologies**  
Survey Report

17-06460

<b>Database:</b>	EDM 5000.1 Single User Db	<b>Local Co-ordinate Reference:</b>	Site Doddridge County 513146
<b>Company:</b>	EQT Production - Marcellus	<b>TVD Reference:</b>	KB @ 991.0usft
<b>Project:</b>	Doddridge County, WV Grid	<b>MD Reference:</b>	KB @ 991.0usft
<b>Site:</b>	Doddridge County 513146	<b>North Reference:</b>	Grid
<b>Well:</b>	Well #513146	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Main Wellbore		
<b>Design:</b>	513146 As Drilled Surveys		

<b>Project</b>	Doddridge County, WV Grid		
<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

<b>Site</b>	Doddridge County 513146		
<b>Site Position:</b>		<b>Northing:</b>	270,601.00 usft
<b>From:</b>	Map	<b>Easting:</b>	1,641,295.00 usft
<b>Position Uncertainty:</b>	0.0 usft	<b>Slot Radius:</b>	13-3/16 "
		<b>Latitude:</b>	39.24
		<b>Longitude:</b>	-80.77
		<b>Grid Convergence:</b>	-0.81 °

<b>Well</b>	Well #513146		
<b>Well Position</b>	<b>+N/-S</b>	0.0 usft	<b>Northing:</b> 270,601.00 usft
	<b>+E/-W</b>	0.0 usft	<b>Easting:</b> 1,641,295.00 usft
<b>Position Uncertainty</b>		0.0 usft	<b>Wellhead Elevation:</b> usft
			<b>Latitude:</b> 39° 14' 9.665 N
			<b>Longitude:</b> 80° 45' 59.039 W
			<b>Ground Level:</b> 968.0 usft

<b>Wellbore</b>	Main Wellbore		
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>
	IGRF2010_14	12/15/2014	-8.49
			<b>Dip Angle (°)</b> 66.72
			<b>Field Strength (nT)</b> 52,205

<b>Design</b>	513146 As Drilled Surveys		
<b>Audit Notes:</b>			
<b>Version:</b>	1.0	<b>Phase:</b>	ACTUAL
		<b>Tie On Depth:</b>	0.0
<b>Vertical Section:</b>	<b>Depth From (TVD) (usft)</b>	<b>+N/-S (usft)</b>	<b>+E/-W (usft)</b>
	0.0	0.0	0.0
			<b>Direction (°)</b> 340.24

<b>Survey Program</b>	Date 12/26/2014		
<b>From ()</b>	<b>To (usft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>
0.00	5,040.0	513146 Gyrodata Gyros (Main Wellbore)	GYD_DP_MS
0.00	13,054.0	513146 PHX MWD (Main Wellbore)	MWD+IGRF
			<b>Description</b>
			Gyrodata gyro-compassing and drop
			MWD+IGRF v3:standard declination

<b>Survey</b>										
<b>Measured Depth (usft)</b>	<b>Inclination (°)</b>	<b>Azimuth (°)</b>	<b>Vertical Depth (usft)</b>	<b>Subsea 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>
0.0	0.00	0.00	0.0	-991.0	0.0	0.0	0.0	0.00	0.00	0.00
110.0	0.19	157.49	110.0	-881.0	-0.2	0.1	-0.2	0.17	0.17	0.00
210.0	0.33	188.70	210.0	-781.0	-0.6	0.1	-0.6	0.19	0.14	31.21
310.0	0.29	210.69	310.0	-681.0	-1.1	-0.1	-1.0	0.12	-0.04	21.99
410.0	0.32	219.87	410.0	-581.0	-1.5	-0.4	-1.3	0.06	0.03	0.18
510.0	0.24	219.69	510.0	-481.0	-1.9	-0.7	-1.6	0.08	-0.08	-0.18
610.0	0.22	226.31	610.0	-381.0	-2.2	-1.0	-1.7	0.03	-0.02	6.62
710.0	0.28	238.90	710.0	-281.0	-2.5	-1.3	-1.9	0.08	0.06	12.59

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<b>Company:</b>	EQT Production - Marcellus	<b>TVD Reference:</b>	KB @ 991 Ousft
<b>Project:</b>	Doddridge County, WV Grid	<b>MD Reference:</b>	KB @ 991 Ousft
<b>Site:</b>	Doddridge County 513146	<b>North Reference:</b>	Grid
<b>Well:</b>	Well #513146	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Main Wellbore		
<b>Design:</b>	513146 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)
810.0	0.30	246.16	810.0	-181.0	-2.7	-1.8	-1.9	0.04	0.02	7.26
910.0	0.27	254.50	910.0	-81.0	-2.9	-2.2	-1.9	0.05	-0.03	8.34
1,010.0	0.60	249.03	1,010.0	19.0	-3.1	-3.0	-1.9	0.33	0.33	-5.47
1,110.0	0.81	255.46	1,110.0	119.0	-3.5	-4.1	-1.9	0.22	0.21	6.43
1,210.0	0.85	251.78	1,210.0	219.0	-3.9	-5.5	-1.8	0.07	0.04	-3.68
1,310.0	0.91	254.65	1,310.0	319.0	-4.3	-7.0	-1.7	0.07	0.06	2.87
1,410.0	0.92	255.60	1,409.9	418.9	-4.7	-8.5	-1.6	0.02	0.01	0.95
1,510.0	0.89	261.56	1,509.9	518.9	-5.1	-10.1	-1.4	0.10	-0.03	5.96
1,610.0	0.83	263.39	1,609.9	618.9	-5.3	-11.6	-1.0	0.07	-0.06	1.83
1,710.0	0.88	258.97	1,709.9	718.9	-5.5	-13.0	-0.8	0.08	0.05	-4.42
1,810.0	0.77	257.82	1,809.9	818.9	-5.8	-14.4	-0.6	0.11	-0.11	-1.15
1,910.0	0.68	253.97	1,909.9	918.9	-6.1	-15.7	-0.4	0.10	-0.09	-3.85
2,010.0	0.64	255.70	2,009.9	1,018.9	-6.4	-16.8	-0.3	0.04	-0.04	1.73
2,110.0	0.60	252.43	2,109.9	1,118.9	-6.7	-17.8	-0.3	0.05	-0.04	-3.27
2,210.0	0.53	235.78	2,209.9	1,218.9	-7.1	-18.7	-0.4	0.18	-0.07	-16.65
2,310.0	0.51	225.28	2,309.9	1,318.9	-7.7	-19.4	-0.7	0.10	-0.02	-10.50
2,410.0	0.48	222.35	2,409.9	1,418.9	-8.3	-20.0	-1.0	0.04	-0.03	-2.93
2,510.0	0.53	210.33	2,509.9	1,518.9	-9.0	-20.5	-1.5	0.12	0.05	-12.02
2,610.0	0.54	207.74	2,609.9	1,618.9	-9.8	-21.0	-2.1	0.03	0.01	-2.59
2,710.0	0.54	201.30	2,709.9	1,718.9	-10.7	-21.4	-2.8	0.06	0.00	-6.44
2,810.0	0.58	189.27	2,809.8	1,818.8	-11.6	-21.6	-3.6	0.12	0.04	-12.03
2,910.0	0.65	176.52	2,909.8	1,918.8	-12.7	-21.7	-4.6	0.15	0.07	-12.75
3,010.0	0.64	177.74	3,009.8	2,018.8	-13.8	-21.6	-5.7	0.02	-0.01	1.22
3,110.0	0.63	176.12	3,109.8	2,118.8	-14.9	-21.5	-6.7	0.02	-0.01	-1.62
3,210.0	0.68	178.27	3,209.8	2,218.8	-16.1	-21.5	-7.8	0.06	0.05	2.15
3,310.0	0.68	178.46	3,309.8	2,318.8	-17.2	-21.5	-9.0	0.00	0.00	0.19
3,410.0	0.71	178.17	3,409.8	2,418.8	-18.5	-21.4	-10.1	0.03	0.03	-0.29
3,510.0	0.79	180.92	3,509.8	2,518.8	-19.8	-21.4	-11.4	0.09	0.08	2.75
3,610.0	0.90	195.74	3,609.8	2,618.8	-21.2	-21.6	-12.6	0.24	0.11	14.82
3,710.0	0.93	206.26	3,709.8	2,718.8	-22.7	-22.2	-13.8	0.17	0.03	10.52
3,810.0	0.99	224.11	3,809.8	2,818.8	-24.0	-23.2	-14.8	0.30	0.06	17.85
3,910.0	1.08	244.47	3,909.7	2,918.7	-25.1	-24.6	-15.3	0.38	0.09	20.36
4,010.0	1.17	260.24	4,009.7	3,018.7	-25.6	-26.5	-15.2	0.32	0.09	15.77
4,110.0	1.41	270.99	4,109.7	3,118.7	-25.8	-28.7	-14.6	0.34	0.24	10.75
4,210.0	1.54	278.00	4,209.7	3,218.7	-25.6	-31.3	-13.5	0.22	0.13	7.01
4,310.0	1.75	289.72	4,309.6	3,318.6	-24.9	-34.0	-11.9	0.40	0.21	7.22
4,410.0	1.96	298.23	4,409.6	3,418.6	-23.6	-37.0	-9.7	0.35	0.21	8.51
4,510.0	2.25	304.68	4,509.5	3,518.5	-21.6	-40.1	-6.8	0.37	0.29	6.45
4,610.0	2.52	309.99	4,609.4	3,618.4	-19.1	-43.4	-3.3	0.35	0.27	5.31
4,710.0	2.74	313.54	4,709.3	3,718.3	-16.0	-46.8	0.7	0.27	0.22	3.55
4,810.0	3.32	317.16	4,809.2	3,818.2	-12.3	-50.5	5.5	0.61	0.58	3.62
4,910.0	3.96	319.98	4,909.0	3,918.0	-7.5	-54.7	11.4	0.66	0.64	2.82

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<b>Site:</b>	Doddridge County 513146	<b>North Reference:</b>	Grid
<b>Well:</b>	Well #513146	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Main Wellbore		
<b>Design:</b>	513146 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)	
5,010.0	4.19	323.19	5,008.7	4,017.7	-1.9	-59.1	18.2	0.32	0.23	3.21	
<b>Gyro Tie IN=5040° MD</b>											
5,040.0	4.37	322.67	5,038.6	4,047.6	-0.2	-60.5	20.3	0.61	0.60	-1.73	
5,080.0	4.70	316.00	5,078.5	4,087.5	2.2	-62.5	23.3	1.55	0.83	-16.68	
5,112.0	7.80	296.90	5,110.3	4,119.3	4.2	-65.4	26.0	11.54	9.69	-59.69	
5,144.0	12.00	294.00	5,141.8	4,150.8	6.5	-70.4	29.9	13.21	13.13	-9.06	
5,175.0	13.40	295.20	5,172.1	4,181.1	9.3	-76.6	34.7	4.60	4.52	3.87	
5,206.0	12.40	292.00	5,202.3	4,211.3	12.1	-82.9	39.4	3.96	-3.23	-10.32	
5,238.0	11.70	289.70	5,233.6	4,242.6	14.5	-89.1	43.8	2.65	-2.19	-7.19	
5,270.0	11.30	286.80	5,265.0	4,274.0	16.5	-95.2	47.7	2.20	-1.25	-9.06	
5,301.0	10.40	292.60	5,295.4	4,304.4	18.5	-100.7	51.4	4.56	-2.90	18.71	
5,333.0	8.80	308.10	5,327.0	4,336.0	21.1	-105.3	55.4	9.46	-5.00	48.44	
5,365.0	7.60	321.30	5,358.6	4,367.6	24.2	-108.5	59.5	6.95	-3.75	41.25	
5,396.0	8.30	343.30	5,389.3	4,398.3	28.0	-110.5	63.7	10.01	2.26	70.97	
5,428.0	9.10	3.50	5,421.0	4,430.0	32.7	-111.0	68.3	9.81	2.50	63.13	
5,459.0	9.30	21.60	5,451.6	4,460.6	37.5	-109.9	72.4	9.32	0.65	58.39	
5,491.0	9.20	42.90	5,483.2	4,492.2	41.8	-107.2	75.6	10.64	-0.31	66.56	
5,523.0	10.30	61.00	5,514.7	4,523.7	45.0	-103.0	77.2	10.13	3.44	56.56	
5,554.0	11.30	67.70	5,545.2	4,554.2	47.5	-97.7	77.8	5.17	3.23	21.61	
5,585.0	13.60	67.10	5,575.4	4,584.4	50.1	-91.5	78.1	7.43	7.42	-1.94	
5,617.0	16.60	66.10	5,606.3	4,615.3	53.4	-83.9	78.6	9.41	9.38	-3.13	
5,648.0	19.60	66.80	5,635.8	4,644.8	57.3	-75.1	79.3	9.70	9.68	2.26	
5,680.0	23.20	68.60	5,665.6	4,674.6	61.7	-64.3	79.8	11.43	11.25	5.63	
5,712.0	25.50	69.80	5,694.7	4,703.7	66.4	-51.9	80.0	7.35	7.19	3.75	
5,743.0	28.60	69.60	5,722.3	4,731.3	71.3	-38.7	80.1	10.00	10.00	-0.65	
5,774.0	31.60	67.30	5,749.2	4,758.2	77.0	-24.3	80.6	10.37	9.68	-7.42	
5,806.0	35.20	68.30	5,775.9	4,784.9	83.6	-8.0	81.4	11.38	11.25	3.13	
5,838.0	38.50	69.90	5,801.5	4,810.5	90.5	10.0	81.8	10.74	10.31	5.00	
5,869.0	42.70	71.50	5,825.0	4,834.0	97.1	29.0	81.6	13.96	13.55	5.16	
5,901.0	45.10	74.10	5,848.1	4,857.1	103.7	50.2	80.6	9.38	7.50	8.13	
5,932.0	44.80	74.30	5,870.0	4,879.0	109.6	71.3	79.1	1.07	-0.97	0.65	
5,964.0	44.70	73.90	5,892.7	4,901.7	115.8	92.9	77.6	0.93	-0.31	-1.25	
5,995.0	43.90	73.40	5,914.9	4,923.9	121.9	113.7	76.3	2.82	-2.58	-1.61	
6,027.0	43.20	72.80	5,938.1	4,947.1	128.3	134.8	75.2	2.54	-2.19	-1.88	
6,058.0	42.90	69.10	5,960.8	4,969.8	135.2	154.8	74.9	8.20	-0.97	1.88	
6,090.0	41.50	63.00	5,984.5	4,993.5	143.9	174.4	76.4	13.53	-4.38	1.88	
6,121.0	40.50	57.70	6,007.9	5,016.9	153.9	192.1	79.9	11.67	-3.23	-1.25	
6,152.0	40.80	53.10	6,031.4	5,040.4	165.4	208.7	85.1	9.71	0.97	-1.61	
6,184.0	40.70	49.70	6,055.7	5,064.7	178.4	225.0	91.8	6.94	-0.31	-10.63	
6,215.0	41.30	46.40	6,079.1	5,088.1	192.0	240.2	99.5	7.25	1.94	-10.65	
6,246.0	43.40	44.30	6,102.0	5,111.0	206.7	255.0	108.3	8.17	6.77	-6.77	
6,278.0	46.30	40.90	6,124.7	5,133.7	223.3	270.3	118.8	11.76	9.06	-10.63	
6,309.0	48.50	36.90	6,145.6	5,154.6	241.1	284.6	130.7	11.85	7.10	-12.90	

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## Survey Report

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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)	
6,341.0	50.60	32.80	6,166.4	5,175.4	261.1	298.5	144.8	11.75	6.56	-12.81	
6,372.0	51.40	28.80	6,185.9	5,194.9	281.8	310.8	160.1	10.35	2.58	-12.90	
6,404.0	52.10	25.20	6,205.7	5,214.7	304.1	322.2	177.3	9.10	2.19	-11.25	
6,436.0	53.50	21.40	6,225.1	5,234.1	327.6	332.3	195.9	10.42	4.38	-11.88	
6,467.0	55.00	17.70	6,243.2	5,252.2	351.3	340.7	215.4	10.83	4.84	-11.94	
6,498.0	56.50	13.90	6,260.7	5,269.7	375.9	347.7	236.2	11.23	4.84	-12.26	
6,530.0	57.80	9.50	6,278.0	5,287.0	402.2	353.1	259.2	12.24	4.06	-13.75	
6,561.0	59.80	5.70	6,294.1	5,303.1	428.5	356.6	282.7	12.31	6.45	-12.26	
6,593.0	61.20	3.40	6,309.8	5,318.8	456.3	358.8	308.1	7.63	4.38	-7.19	
6,624.0	64.20	0.40	6,324.1	5,333.1	483.8	359.7	333.7	12.94	9.68	-9.68	
6,655.0	66.40	358.20	6,337.0	5,346.0	511.9	359.4	360.3	9.59	7.10	-7.10	
6,687.0	69.00	355.70	6,349.2	5,358.2	541.5	357.8	388.6	10.87	8.13	-7.81	
6,718.0	71.50	352.60	6,359.6	5,368.6	570.5	354.8	417.0	12.39	8.06	-10.00	
6,750.0	73.90	350.60	6,369.1	5,378.1	600.7	350.3	446.9	9.58	7.50	-6.25	
6,782.0	76.20	348.80	6,377.4	5,386.4	631.1	344.8	477.4	9.01	7.19	-5.63	
6,813.0	77.80	346.90	6,384.4	5,393.4	660.7	338.4	507.3	7.89	5.16	-6.13	
6,844.0	79.60	344.60	6,390.4	5,399.4	690.1	331.0	537.6	9.31	5.81	-7.42	
6,876.0	81.50	342.70	6,395.7	5,404.7	720.4	322.1	569.1	8.34	5.94	-5.94	
6,907.0	83.30	341.00	6,399.8	5,408.8	749.6	312.5	599.8	7.95	5.81	-5.48	
6,939.0	84.40	339.00	6,403.2	5,412.2	779.5	301.6	631.6	7.10	3.44	-6.25	
6,970.0	86.80	337.50	6,405.6	5,414.6	808.2	290.2	662.5	9.12	7.74	-4.84	
<b>LP= 7076' MD/6409' TVD</b>											
7,076.0	89.70	335.50	6,408.8	5,417.8	905.4	247.9	768.2	3.32	2.74	-1.89	
7,171.0	89.80	337.20	6,409.3	5,418.3	992.4	209.8	863.0	1.79	0.11	1.79	
7,265.0	90.10	338.60	6,409.3	5,418.3	1,079.5	174.4	956.9	1.52	0.32	1.49	
7,360.0	88.50	335.50	6,410.5	5,419.5	1,166.9	137.4	1,051.8	3.67	-1.68	-3.26	
7,454.0	89.50	335.80	6,412.1	5,421.1	1,252.6	98.7	1,145.4	1.11	1.06	0.32	
7,548.0	89.50	336.50	6,413.0	5,422.0	1,338.5	60.7	1,239.2	0.74	0.00	0.74	
7,642.0	89.50	337.60	6,413.8	5,422.8	1,425.1	24.0	1,333.0	1.17	0.00	1.17	
7,736.0	89.50	337.20	6,414.6	5,423.6	1,511.9	-12.1	1,426.9	0.43	0.00	-0.43	
7,831.0	90.30	334.20	6,414.8	5,423.8	1,598.4	-51.2	1,521.6	3.27	0.84	-3.16	
7,926.0	88.90	331.10	6,415.4	5,424.4	1,682.8	-94.8	1,615.8	3.58	-1.47	-3.26	
8,020.0	89.50	331.00	6,416.7	5,425.7	1,765.0	-140.3	1,708.6	0.65	0.64	-0.11	
8,114.0	89.80	329.30	6,417.3	5,426.3	1,846.6	-187.1	1,801.1	1.84	0.32	-1.81	
8,209.0	89.70	329.70	6,417.7	5,426.7	1,928.4	-235.3	1,894.4	0.43	-0.11	0.42	
8,303.0	90.30	335.00	6,417.7	5,426.7	2,011.7	-278.9	1,987.5	5.67	0.64	-1.06	
8,397.0	90.30	334.00	6,417.2	5,426.2	2,096.5	-319.4	2,081.0	1.06	0.00	-1.06	
8,491.0	89.60	336.10	6,417.3	5,426.3	2,181.7	-359.1	2,174.6	2.35	-0.74	2.35	
8,585.0	86.80	334.60	6,420.3	5,429.3	2,267.1	-398.2	2,268.2	3.38	-2.98	-1.60	
8,680.0	87.20	333.90	6,425.3	5,434.3	2,352.5	-439.5	2,362.6	0.85	0.42	-0.74	
8,774.0	88.00	336.30	6,429.2	5,438.2	2,437.7	-479.0	2,456.1	2.69	0.85	2.55	
8,869.0	90.20	339.50	6,430.7	5,439.7	2,525.7	-514.7	2,551.0	4.09	2.32	3.37	
8,963.0	90.60	338.70	6,430.0	5,439.0	2,613.5	-548.3	2,645.0	0.95	0.43	-0.85	

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**Phoenix Technologies**  
Survey Report

17-06460

<b>Database:</b>	EDM 5000.1 Single User Db	<b>Local Co-ordinate Reference:</b>	Site Doddridge County 513146
<b>Company:</b>	EQT Production - Marcellus	<b>TVD Reference:</b>	KB @ 991.0usft
<b>Project:</b>	Doddridge County, WV Grid	<b>MD Reference:</b>	KB @ 991.0usft
<b>Site:</b>	Doddridge County 513146	<b>North Reference:</b>	Grid
<b>Well:</b>	Well #513146	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Main Wellbore		
<b>Design:</b>	513146 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)
9,057.0	90.90	337.50	6,428.8	5,437.8	2,700.7	-583.3	2,738.9	1.32	0.32	-1.28
9,151.0	88.20	334.90	6,429.5	5,438.5	2,786.7	-621.2	2,832.7	3.99	-2.87	-2.77
9,246.0	88.90	335.30	6,431.9	5,440.9	2,872.9	-661.2	2,927.3	0.85	0.74	0.42
9,341.0	87.00	334.50	6,435.3	5,444.3	2,958.8	-701.5	3,021.8	2.17	-2.00	-0.84
9,435.0	87.30	333.90	6,440.0	5,449.0	3,043.4	-742.4	3,115.1	0.71	0.32	-0.64
9,530.0	88.50	334.60	6,443.5	5,452.5	3,128.9	-783.6	3,209.6	1.46	1.26	0.74
9,624.0	88.50	333.30	6,445.9	5,454.9	3,213.3	-824.9	3,303.0	1.38	0.00	-1.38
9,717.0	88.60	335.60	6,448.3	5,457.3	3,297.2	-865.0	3,395.4	2.47	0.11	2.47
9,812.0	89.80	333.90	6,449.6	5,458.6	3,383.1	-905.5	3,490.0	2.19	1.26	-1.79
9,906.0	88.40	334.00	6,451.1	5,460.1	3,467.5	-946.8	3,583.4	1.49	-1.49	0.11
10,001.0	88.70	334.40	6,453.5	5,462.5	3,553.0	-988.1	3,677.9	0.53	0.32	0.42
10,095.0	88.50	332.90	6,455.8	5,464.8	3,637.2	-1,029.8	3,771.2	1.61	-0.21	-1.60
10,190.0	91.20	335.20	6,456.1	5,465.1	3,722.6	-1,071.4	3,865.6	3.73	2.84	2.42
10,285.0	91.80	335.10	6,453.6	5,462.6	3,808.8	-1,111.3	3,960.2	0.64	0.63	-0.11
10,379.0	91.40	335.90	6,450.9	5,459.9	3,894.3	-1,150.2	4,053.9	0.95	-0.43	0.85
10,474.0	88.90	336.50	6,450.7	5,459.7	3,981.2	-1,188.6	4,148.6	2.71	-2.63	0.63
10,568.0	88.70	337.20	6,452.7	5,461.7	4,067.6	-1,225.5	4,242.4	0.77	-0.21	0.74
10,662.0	86.50	337.30	6,456.6	5,465.6	4,154.2	-1,261.8	4,336.2	2.34	-2.34	0.11
10,757.0	86.50	336.80	6,462.4	5,471.4	4,241.6	-1,298.8	4,430.9	0.53	0.00	-0.53
10,851.0	88.10	335.80	6,466.8	5,475.8	4,327.5	-1,336.5	4,524.6	2.01	1.70	-1.06
10,946.0	89.50	335.50	6,468.8	5,477.8	4,414.1	-1,375.7	4,619.2	1.51	1.47	-0.32
11,040.0	89.10	333.60	6,470.0	5,479.0	4,498.9	-1,416.1	4,712.8	2.07	-0.43	-2.02
11,135.0	88.40	332.80	6,472.0	5,481.0	4,583.7	-1,458.9	4,807.0	1.12	-0.74	-0.84
11,230.0	88.10	333.20	6,474.9	5,483.9	4,668.3	-1,502.0	4,901.2	0.53	-0.32	0.42
11,324.0	89.80	334.30	6,476.7	5,485.7	4,752.6	-1,543.6	4,994.6	2.15	1.81	1.17
11,419.0	90.40	334.70	6,476.5	5,485.5	4,838.3	-1,584.5	5,089.1	0.76	0.63	0.42
11,514.0	91.00	334.70	6,475.3	5,484.3	4,924.2	-1,625.1	5,183.7	0.63	0.63	0.00
11,608.0	91.50	334.50	6,473.3	5,482.3	5,009.1	-1,665.4	5,277.2	0.57	0.53	-0.21
11,703.0	88.70	334.00	6,473.1	5,482.1	5,094.7	-1,706.7	5,371.7	2.99	-2.95	-0.53
11,797.0	87.60	334.10	6,476.2	5,485.2	5,179.1	-1,747.8	5,465.1	1.18	-1.17	0.11
11,892.0	89.00	339.00	6,479.0	5,488.0	5,266.2	-1,785.5	5,559.8	5.36	1.47	5.16
11,987.0	87.70	339.20	6,481.7	5,490.7	5,354.9	-1,819.4	5,654.7	1.38	-1.37	0.31
12,081.0	88.70	339.80	6,484.7	5,493.7	5,442.9	-1,852.3	5,748.7	1.24	1.06	0.64
12,176.0	89.80	340.80	6,485.9	5,494.9	5,532.4	-1,884.3	5,843.7	1.56	1.16	0.95
12,270.0	88.10	338.30	6,487.6	5,496.6	5,620.4	-1,917.2	5,937.6	3.22	-1.81	-2.66
12,365.0	88.10	337.20	6,490.8	5,499.8	5,708.3	-1,953.1	6,032.5	1.16	0.00	0.84
12,460.0	89.60	335.50	6,492.7	5,501.7	5,795.3	-1,991.2	6,127.3	2.39	1.58	-1.79
12,555.0	89.90	335.60	6,493.1	5,502.1	5,881.8	-2,030.5	6,221.9	0.33	0.32	0.11
12,649.0	90.10	334.00	6,493.1	5,502.1	5,966.8	-2,070.6	6,315.5	1.72	0.21	-1.70
12,743.0	89.30	331.70	6,493.6	5,502.6	6,050.5	-2,113.5	6,408.7	2.59	-0.85	-2.45
Deepest Point of Well = 12838' MD/6495' TVD										
12,838.0	89.60	331.00	6,494.5	5,503.5	6,133.8	-2,159.0	6,502.6	0.80	0.32	-0.74

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Survey Report

17-06460

<b>Database:</b>	EDM 5000.1 Single User Db	<b>Local Co-ordinate Reference:</b>	Site Doddridge County 513146
<b>Company:</b>	EQT Production - Marcellus	<b>TVD Reference:</b>	KB @ 991.0usft
<b>Project:</b>	Doddridge County, WV Grid	<b>MD Reference:</b>	KB @ 991.0usft
<b>Site:</b>	Doddridge County 513146	<b>North Reference:</b>	Grid
<b>Well:</b>	Well #513146	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Main Wellbore		
<b>Design:</b>	513146 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)
12,932.0	90.40	330.70	6,494.5	5,503.5	6,215.9	-2,204.8	6,595.3	0.91	0.85	-0.32
<b>Final Survey= 13000' MD/6494' TVD</b>										
13,000.0	90.60	329.20	6,493.9	5,502.9	6,274.8	-2,238.8	6,662.2	2.23	0.29	-2.21
<b>Projection to TD= 13054' MD/6493' TVD</b>										
13,054.0	90.60	329.20	6,493.3	5,502.3	6,321.2	-2,266.5	6,715.2	0.00	0.00	0.00

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
5,040.0	5,038.6	-0.2	-60.5	Gyro Tie IN=5040' MD
7,076.0	6,408.8	905.4	247.9	LP= 7076' MD/6409' TVD
12,838.0	6,494.5	6,133.8	-2,159.0	Deepest Point of Well= 12838' MD/6495' TVD
13,000.0	6,493.9	6,274.8	-2,238.8	Final Survey= 13000' MD/6494' TVD
13,054.0	6,493.3	6,321.2	-2,266.5	Projection to TD= 13054' MD/6493' TVD

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

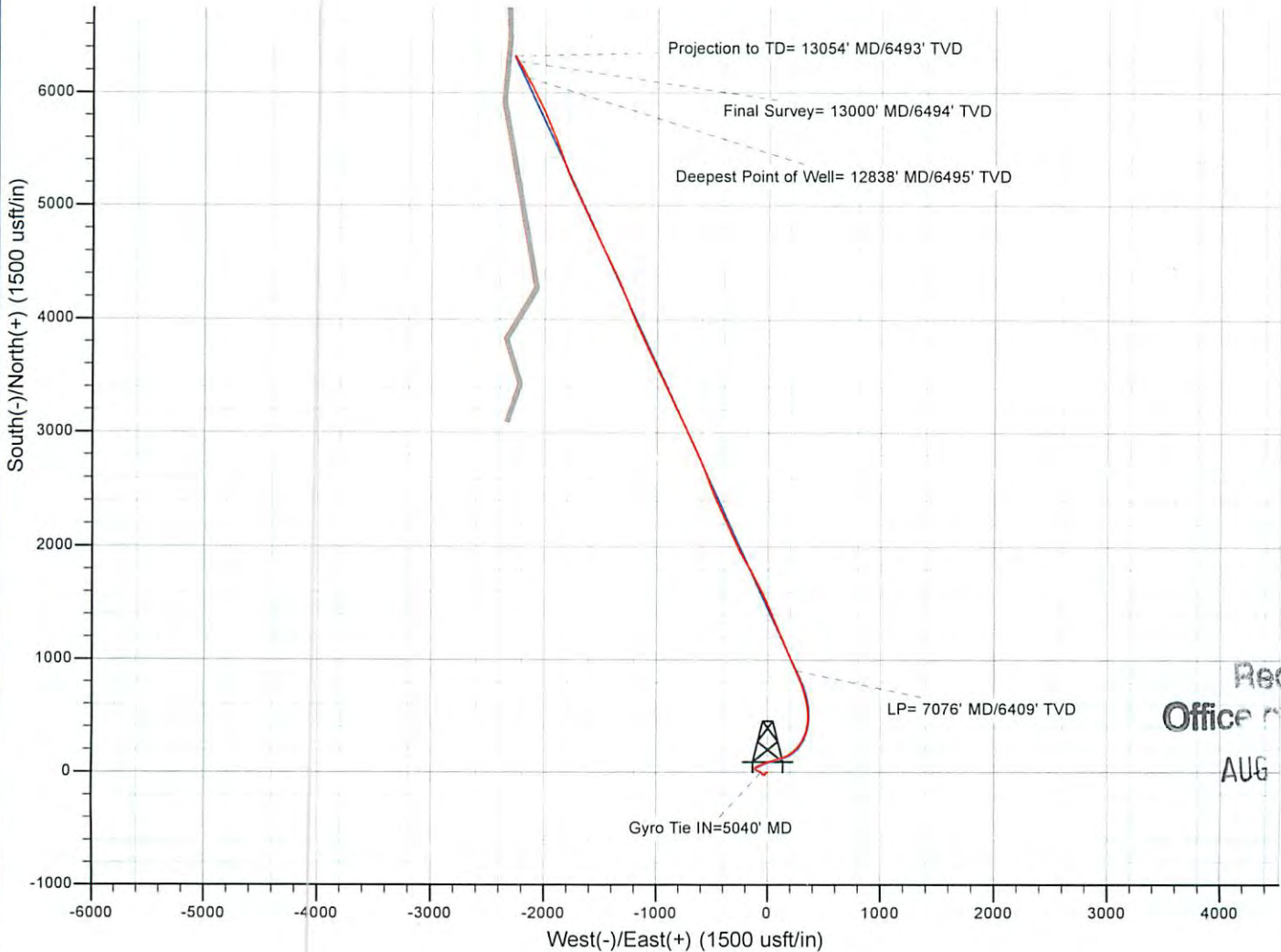
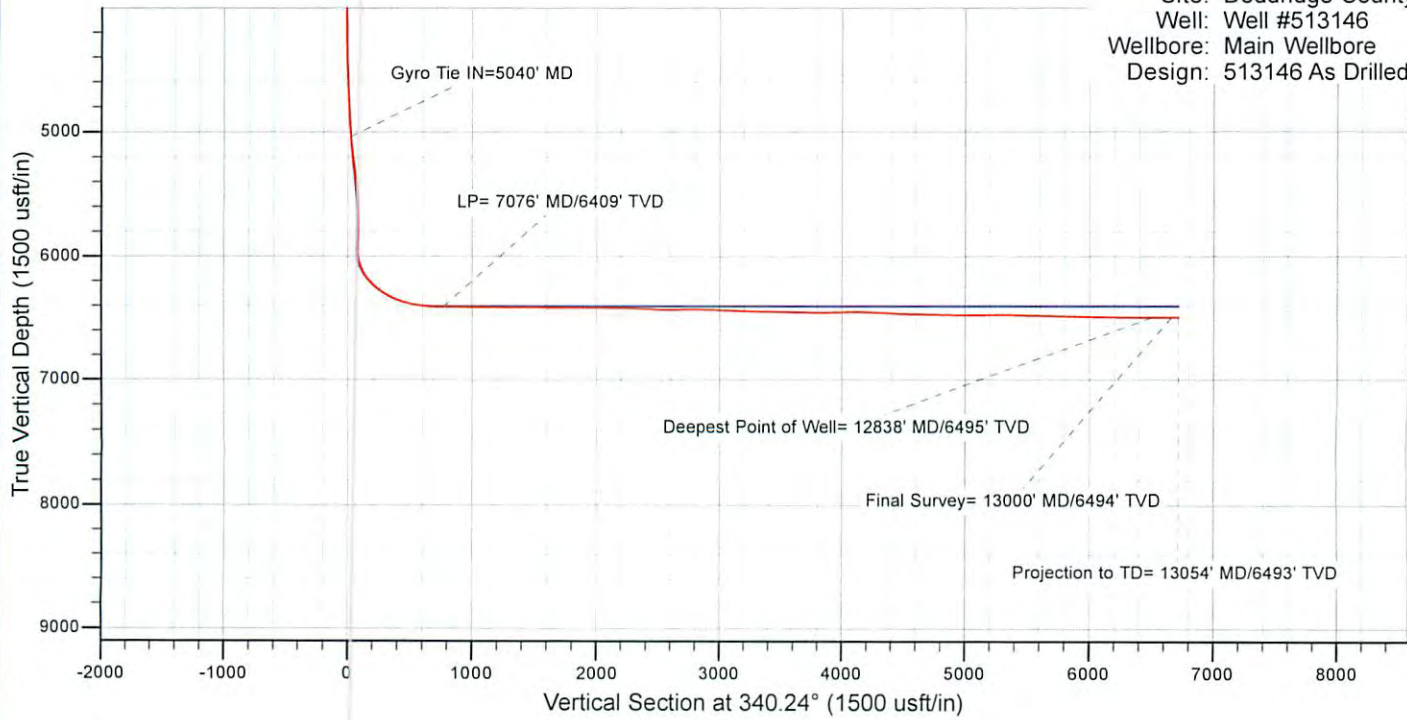
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17-06460

# EQT Production - Marcellus

Project: Doddridge County, WV Grid  
Site: Doddridge County 513146  
Well: Well #513146  
Wellbore: Main Wellbore  
Design: 513146 As Drilled Surveys



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