



## **EQT Production - Marcellus**

**Doddridge County, WV Grid**

**Doddridge County 513346**

**Well #513346**

**API #47-01706324**

**Main Wellbore**

**Design: 513346 As Drilled Surveys**

## **Standard Survey Report**

**13 May, 2014**

**EQT**

Where energy meets innovation.



Phoenix Technology Services  
Survey Report



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Site Doddridge County 513346
Company:	EQT Production - Marcellus	TVD Reference:	KB @ 1276 0usft
Project:	Doddridge County, WV Grid	MD Reference:	KB @ 1276 0usft
Site:	Doddridge County 513346	North Reference:	Grid
Well:	Well #513346	Survey Calculation Method:	Minimum Curvature
Wellbore:	Main Wellbore		
Design:	513346 As Drilled Surveys		

Project **Doddridge County, WV Grid**

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 **Doddridge County 513346**

Site Position:		Northing:	290,302.20 usft	Latitude:	39.29
From:	Map	Easting:	1,645,131.10 usft	Longitude:	-80.75
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "	Grid Convergence:	-0.80 °

Well **Well #513346**

Well Position	+N/-S	0.0 usft	Northing:	290,302.20 usft	Latitude:	39° 17' 24.908 N
	+E/-W	0.0 usft	Easting:	1,645,131.10 usft	Longitude:	80° 45' 13.784 W
Position Uncertainty		0.0 usft	Wellhead Elevation:	usft	Ground Level:	1,260.0 usft

Wellbore **Main Wellbore**

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010_14	4/8/2014	-8.49	66.83	52,313

Design **513346 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	174.71

Survey Program Date 5/13/2014

From (')	To (usft)	Survey (Wellbore)	Tool Name	Description
0.00	5,500.0	513346 Gyrodata Gyro (Main Wellbore)	GYD_DP_MS	Gyrodata gyro-compassing and drop
0.00	13,685.0	513346 PHX MWD (Main Wellbore)	MWD	MWD - Standard

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	-1,276.0	0.0	0.0	0.0	0.00	0.00	0.00
100.0	0.39	176.72	100.0	-1,176.0	-0.3	0.0	0.3	0.39	0.39	0.00
200.0	0.38	175.41	200.0	-1,076.0	-1.0	0.1	1.0	0.01	-0.01	-1.31
300.0	0.32	180.39	300.0	-976.0	-1.6	0.1	1.6	0.07	-0.06	4.98
400.0	0.28	182.43	400.0	-876.0	-2.1	0.1	2.1	0.04	-0.04	2.04
500.0	0.20	193.15	500.0	-776.0	-2.6	0.0	2.5	0.09	-0.08	10.72
600.0	0.18	184.67	600.0	-676.0	-2.9	0.0	2.9	0.03	-0.02	-8.48
700.0	0.23	184.35	700.0	-576.0	-3.2	-0.1	3.2	0.05	0.05	-0.32



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Project:	Doddridge County, WV Grid	MD Reference:	KB @ 1276 0usft
Site:	Doddridge County 513346	North Reference:	Grid
Well:	Well #513346	Survey Calculation Method:	Minimum Curvature
Wellbore:	Main Wellbore		
Design:	513346 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)
800.0	0.21	193.59	800.0	-476.0	-3.6	-0.1	3.6	0.04	-0.02	9.24
900.0	0.18	189.29	900.0	-376.0	-4.0	-0.2	3.9	0.03	-0.03	-4.30
1,000.0	0.17	187.02	1,000.0	-276.0	-4.3	-0.2	4.2	0.01	-0.01	-2.27
1,100.0	0.18	172.97	1,100.0	-176.0	-4.6	-0.2	4.5	0.04	0.01	-14.05
1,200.0	0.21	173.53	1,200.0	-76.0	-4.9	-0.2	4.9	0.03	0.03	0.56
1,300.0	0.42	177.36	1,300.0	24.0	-5.4	-0.1	5.4	0.21	0.21	3.83
1,400.0	0.42	174.39	1,400.0	124.0	-6.2	-0.1	6.1	0.02	0.00	-2.97
1,500.0	0.62	158.54	1,500.0	224.0	-7.0	0.1	7.0	0.24	0.20	-15.85
1,600.0	0.63	159.36	1,600.0	324.0	-8.1	0.5	8.1	0.01	0.01	0.82
1,700.0	0.65	150.81	1,700.0	424.0	-9.1	1.0	9.1	0.10	0.02	-8.55
1,800.0	0.70	143.45	1,800.0	524.0	-10.1	1.6	10.2	0.10	0.05	-7.36
1,900.0	0.79	140.18	1,900.0	624.0	-11.1	2.4	11.3	0.10	0.09	-3.27
2,000.0	0.79	127.83	1,999.9	723.9	-12.0	3.4	12.3	0.17	0.00	-12.35
2,100.0	0.67	131.49	2,099.9	823.9	-12.8	4.4	13.2	0.13	-0.12	3.66
2,200.0	0.62	132.92	2,199.9	923.9	-13.6	5.3	14.0	0.05	-0.05	1.43
2,300.0	0.65	130.41	2,299.9	1,023.9	-14.3	6.1	14.8	0.04	0.03	-2.51
2,400.0	0.61	139.70	2,399.9	1,123.9	-15.1	6.9	15.7	0.11	-0.04	9.29
2,500.0	0.53	155.65	2,499.9	1,223.9	-15.9	7.4	16.5	0.18	-0.08	15.95
2,600.0	0.52	163.75	2,599.9	1,323.9	-16.8	7.7	17.4	0.07	-0.01	8.10
2,700.0	0.53	163.06	2,699.9	1,423.9	-17.7	8.0	18.3	0.01	0.01	-0.69
2,800.0	0.56	161.82	2,799.9	1,523.9	-18.6	8.3	19.3	0.03	0.03	-1.24
2,900.0	0.57	166.52	2,899.9	1,623.9	-19.5	8.5	20.2	0.05	0.01	4.70
3,000.0	0.56	168.32	2,999.9	1,723.9	-20.5	8.7	21.2	0.02	-0.01	1.80
3,100.0	0.61	165.78	3,099.9	1,823.9	-21.5	9.0	22.2	0.06	0.05	-2.54
3,200.0	0.64	165.90	3,199.9	1,923.9	-22.5	9.2	23.3	0.03	0.03	0.12
3,300.0	0.63	166.73	3,299.9	2,023.9	-23.6	9.5	24.4	0.01	-0.01	0.83
3,400.0	0.62	161.91	3,399.9	2,123.9	-24.7	9.8	25.5	0.05	-0.01	-4.82
3,500.0	0.59	159.68	3,499.9	2,223.9	-25.7	10.1	26.5	0.04	-0.03	-2.23
3,600.0	0.52	159.45	3,599.9	2,323.9	-26.6	10.5	27.4	0.07	-0.07	-0.23
3,700.0	0.54	165.17	3,699.9	2,423.9	-27.4	10.8	28.3	0.06	0.02	5.72
3,800.0	0.49	158.62	3,799.8	2,523.8	-28.3	11.0	29.2	0.08	-0.05	-6.55
3,900.0	0.43	152.02	3,899.8	2,623.8	-29.0	11.4	30.0	0.08	-0.06	-6.60
4,000.0	0.42	154.41	3,999.8	2,723.8	-29.7	11.7	30.6	0.02	-0.01	2.39
4,100.0	0.31	130.68	4,099.8	2,823.8	-30.2	12.1	31.2	0.18	-0.11	-23.73
4,200.0	0.29	118.08	4,199.8	2,923.8	-30.5	12.5	31.5	0.07	-0.02	-12.60
4,300.0	0.45	98.15	4,299.8	3,023.8	-30.7	13.1	31.7	0.20	0.16	-19.93
4,400.0	0.37	78.78	4,399.8	3,123.8	-30.7	13.8	31.8	0.16	-0.08	-19.37
4,500.0	0.43	68.34	4,499.8	3,223.8	-30.5	14.5	31.7	0.09	0.06	-10.44
4,600.0	0.52	68.24	4,599.8	3,323.8	-30.2	15.2	31.4	0.09	0.09	-0.10
4,700.0	0.50	52.44	4,699.8	3,423.8	-29.7	16.0	31.1	0.14	-0.02	-15.80
4,800.0	0.51	50.30	4,799.8	3,523.8	-29.2	16.7	30.6	0.02	0.01	-2.14
4,900.0	0.53	52.81	4,899.8	3,623.8	-28.6	17.4	30.1	0.03	0.02	2.51



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Project:	Doddridge County, WV Grd	MD Reference:	KB @ 1276 0usft
Site:	Doddridge County 513346	North Reference:	Grd
Well:	Well #513346	Survey Calculation Method:	Minimum Curvature
Wellbore:	Main Wellbore		
Design:	513346 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)
5,000.0	0.46	54.02	4,999.8	3,723.8	-28.1	18.1	29.6	0.07	-0.07	1.21
5,100.0	0.47	57.04	5,099.8	3,823.8	-27.6	18.8	29.2	0.03	0.01	3.02
5,200.0	0.54	59.76	5,199.8	3,923.8	-27.2	19.5	28.9	0.07	0.07	2.72
5,300.0	0.49	65.04	5,299.8	4,023.8	-26.8	20.3	28.5	0.07	-0.05	5.28
5,400.0	0.69	47.71	5,399.8	4,123.8	-26.2	21.2	28.0	0.27	0.20	-17.33
<b>Gyro Tie In=5500' MD</b>										
5,500.0	0.79	44.82	5,499.8	4,223.8	-25.3	22.1	27.2	0.11	0.10	-2.89
5,509.0	0.70	38.50	5,508.8	4,232.8	-25.2	22.2	27.1	1.35	-1.00	-70.22
5,541.0	0.70	45.80	5,540.8	4,264.8	-24.9	22.4	26.9	0.28	0.00	22.81
<b>KOP=5572' MD</b>										
5,572.0	0.70	44.80	5,571.8	4,295.8	-24.6	22.7	26.6	0.05	0.00	-3.87
5,604.0	2.90	335.50	5,603.8	4,327.8	-23.8	22.5	25.7	6.53	6.88	-215.94
5,635.0	8.00	329.90	5,634.6	4,358.6	-21.2	21.1	23.0	16.52	16.45	-18.06
5,667.0	12.80	333.40	5,666.1	4,390.1	-16.1	18.4	17.7	15.12	15.00	10.94
5,699.0	16.20	337.60	5,697.1	4,421.1	-8.8	15.1	10.1	11.11	10.63	13.13
5,730.0	17.90	339.20	5,726.7	4,450.7	-0.3	11.8	1.4	5.69	5.48	5.16
5,762.0	19.70	340.50	5,757.0	4,481.0	9.4	8.2	-8.6	5.78	5.63	4.06
5,794.0	22.30	342.40	5,786.9	4,510.9	20.2	4.6	-19.7	8.40	8.13	5.94
5,825.0	26.10	342.80	5,815.1	4,539.1	32.4	0.8	-32.1	12.27	12.26	1.29
5,857.0	30.10	342.10	5,843.4	4,567.4	46.7	-3.8	-46.9	12.54	12.50	-2.19
5,889.0	32.20	342.00	5,870.7	4,594.7	62.5	-8.9	-63.0	6.56	6.56	-0.31
5,920.0	33.80	340.90	5,896.7	4,620.7	78.5	-14.3	-79.5	5.51	5.16	-3.55
5,952.0	36.80	340.50	5,922.8	4,646.8	95.9	-20.4	-97.4	9.40	9.38	-1.25
5,984.0	39.80	342.20	5,948.0	4,672.0	114.7	-26.7	-116.7	9.94	9.38	5.31
6,015.0	37.20	343.40	5,972.2	4,696.2	133.1	-32.4	-135.6	8.73	-8.39	3.87
6,047.0	33.80	343.20	5,998.3	4,722.3	150.9	-37.7	-153.6	10.63	-10.63	-0.63
6,078.0	29.80	341.80	6,024.6	4,748.6	166.5	-42.6	-169.7	13.12	-12.90	-4.52
6,110.0	25.90	339.90	6,052.9	4,776.9	180.6	-47.5	-184.3	12.50	-12.19	-5.94
6,142.0	22.30	339.50	6,082.1	4,806.1	192.9	-52.1	-196.9	11.26	-11.25	-1.25
6,173.0	19.00	337.20	6,111.1	4,835.1	203.1	-56.1	-207.4	10.96	-10.65	-7.42
6,205.0	16.10	340.30	6,141.6	4,865.6	212.0	-59.6	-216.6	9.52	-9.06	9.69
6,237.0	13.70	347.50	6,172.5	4,896.5	219.9	-61.9	-224.7	9.46	-7.50	22.50
6,268.0	11.60	356.80	6,202.8	4,926.8	226.6	-62.9	-231.5	9.42	-6.77	30.00
6,300.0	8.80	1.50	6,234.3	4,958.3	232.3	-63.0	-237.1	9.12	-8.75	14.69
6,332.0	5.40	358.70	6,266.0	4,990.0	236.2	-63.0	-241.0	10.68	-10.63	-8.75
6,363.0	2.10	343.70	6,297.0	5,021.0	238.2	-63.2	-243.0	11.02	-10.65	-48.39
6,395.0	1.60	323.80	6,328.9	5,052.9	239.2	-63.6	-244.0	2.52	-1.56	-82.19
6,426.0	1.60	181.10	6,359.9	5,083.9	239.1	-63.9	-243.9	9.78	0.00	-460.32
6,458.0	6.50	175.60	6,391.8	5,115.8	236.8	-63.7	-241.7	15.34	15.31	-17.19
6,490.0	10.50	170.90	6,423.5	5,147.5	232.1	-63.1	-237.0	12.68	12.50	-14.69
6,521.0	13.50	170.10	6,453.8	5,177.8	225.8	-62.1	-230.5	9.69	9.68	-2.58
6,553.0	15.70	173.40	6,484.8	5,208.8	217.8	-60.9	-222.5	7.35	6.88	10.31
6,584.0	18.70	173.80	6,514.4	5,238.4	208.7	-59.9	-213.3	9.68	9.68	1.29



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Survey Report



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Project:	Doddridge County, WV Grid	MD Reference:	KB @ 1276.0usft
Site:	Doddridge County 513346	North Reference:	Grid
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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)
6,616.0	20.70	166.90	6,544.5	5,268.5	198.1	-58.1	-202.6	9.58	6.25	-21.56
6,647.0	23.30	164.10	6,573.3	5,297.3	186.8	-55.1	-191.1	9.04	8.39	-9.03
6,679.0	27.00	163.20	6,602.2	5,326.2	173.8	-51.3	-177.8	11.62	11.56	-2.81
6,710.0	29.80	162.20	6,629.5	5,353.5	159.7	-46.9	-163.4	9.16	9.03	-3.23
6,742.0	32.70	161.20	6,656.8	5,380.8	144.0	-41.7	-147.2	9.21	9.06	-3.13
6,774.0	35.10	162.20	6,683.4	5,407.4	127.0	-36.1	-129.8	7.70	7.50	3.13
6,805.0	38.60	162.80	6,708.2	5,432.2	109.3	-30.5	-111.6	11.35	11.29	1.94
6,837.0	42.20	162.60	6,732.6	5,456.6	89.5	-24.3	-91.4	11.26	11.25	-0.63
6,868.0	46.20	163.70	6,754.8	5,478.8	68.8	-18.1	-70.2	13.14	12.90	3.55
6,900.0	49.60	163.40	6,776.2	5,500.2	46.0	-11.4	-46.9	10.65	10.63	-0.94
6,931.0	53.40	164.40	6,795.5	5,519.5	22.7	-4.6	-23.1	12.52	12.26	3.23
6,963.0	56.00	163.90	6,814.0	5,538.0	-2.4	2.5	2.6	8.22	8.13	-1.56
6,994.0	58.20	164.10	6,830.9	5,554.9	-27.4	9.7	28.2	7.12	7.10	0.65
7,026.0	61.00	164.10	6,847.0	5,571.0	-53.9	17.2	55.3	8.75	8.75	0.00
7,058.0	65.40	164.50	6,861.5	5,585.5	-81.4	25.0	83.4	13.80	13.75	1.25
7,090.0	68.80	164.80	6,873.9	5,597.9	-109.9	32.8	112.4	10.66	10.63	0.94
7,121.0	71.80	165.60	6,884.4	5,608.4	-138.1	40.2	141.2	9.98	9.68	2.58
7,153.0	74.60	167.90	6,893.6	5,617.6	-167.9	47.2	171.5	11.13	8.75	7.19
7,185.0	77.10	167.60	6,901.4	5,625.4	-198.2	53.8	202.3	7.87	7.81	-0.94
7,216.0	78.80	166.90	6,907.9	5,631.9	-227.8	60.5	232.4	5.91	5.48	-2.26
7,248.0	81.90	166.30	6,913.3	5,637.3	-258.5	67.8	263.6	9.86	9.69	-1.88
7,280.0	85.60	165.60	6,916.8	5,640.8	-289.3	75.5	295.0	11.77	11.56	-2.19
<b>513346 LP p6</b>										
7,305.7	87.15	165.31	6,918.4	5,642.4	-314.2	82.0	320.4	6.13	6.03	-1.11
7,343.0	89.40	164.90	6,919.5	5,643.5	-350.2	91.6	357.1	6.13	6.03	-1.11
7,367.0	89.80	165.80	6,919.7	5,643.7	-373.4	97.6	380.8	4.10	1.67	3.75
7,430.0	89.30	165.70	6,920.2	5,644.2	-434.4	113.1	443.0	0.81	-0.79	-0.16
7,493.0	90.80	165.50	6,920.1	5,644.1	-495.5	128.8	505.2	2.40	2.38	-0.32
<b>513346 LP 1</b>										
7,553.8	91.66	164.83	6,918.8	5,642.8	-554.3	144.4	565.2	1.78	1.41	-1.09
7,557.0	91.70	164.80	6,918.7	5,642.7	-557.3	145.2	568.3	1.78	1.41	-1.09
7,620.0	91.30	163.40	6,917.1	5,641.1	-617.9	162.4	630.2	2.31	-0.63	-2.22
7,683.0	91.50	163.70	6,915.5	5,639.5	-678.3	180.3	692.0	0.57	0.32	0.48
7,746.0	91.50	162.30	6,913.9	5,637.9	-738.5	198.7	753.7	2.22	0.00	-2.22
7,809.0	90.50	163.40	6,912.8	5,636.8	-798.7	217.3	815.3	2.36	-1.59	1.75
7,873.0	89.60	164.20	6,912.7	5,636.7	-860.1	235.1	878.2	1.88	-1.41	1.25
7,936.0	89.50	162.50	6,913.2	5,637.2	-920.5	253.2	939.9	2.70	-0.16	-2.70
7,999.0	90.10	163.20	6,913.4	5,637.4	-980.7	271.8	1,001.6	1.46	0.95	1.11
8,062.0	90.90	164.90	6,912.9	5,636.9	-1,041.3	289.1	1,063.5	2.98	1.27	2.70
8,126.0	91.20	164.80	6,911.7	5,635.7	-1,103.0	305.8	1,126.5	0.49	0.47	-0.16
8,189.0	90.90	163.10	6,910.6	5,634.6	-1,163.6	323.2	1,188.4	2.74	-0.48	-2.70
8,252.0	90.50	163.10	6,909.8	5,633.8	-1,223.8	341.5	1,250.1	0.63	-0.63	0.00
8,315.0	89.40	164.80	6,909.9	5,633.9	-1,284.4	358.9	1,312.0	3.21	-1.75	2.70



Phoenix Technology Services  
Survey Report



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Site Doddridge County 513346
Company:	EQT Production - Marcellus	TVD Reference:	KB @ 1276.0usft
Project:	Doddridge County, WV Grd	MD Reference:	KB @ 1276.0usft
Site:	Doddridge County 513346	North Reference:	Grd
Well:	Well #513346	Survey Calculation Method:	Minimum Curvature
Wellbore:	Main Wellbore		
Design:	513346 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)
8,378.0	89.50	164.70	6,910.5	5,634.5	-1,345.2	375.5	1,374.1	0.22	0.16	-0.16
8,441.0	89.70	164.90	6,910.9	5,634.9	-1,406.0	392.0	1,436.1	0.45	0.32	0.32
8,505.0	89.90	166.20	6,911.1	5,635.1	-1,467.9	408.0	1,499.3	2.06	0.31	2.03
8,568.0	91.00	168.40	6,910.6	5,634.6	-1,529.4	421.8	1,561.8	3.90	1.75	3.49
8,631.0	91.40	169.30	6,909.3	5,633.3	-1,591.2	434.0	1,624.4	1.56	0.63	1.43
8,695.0	90.60	168.60	6,908.2	5,632.2	-1,654.0	446.3	1,688.1	1.66	-1.25	-1.09
8,758.0	90.40	168.40	6,907.6	5,631.6	-1,715.7	458.8	1,750.7	0.45	-0.32	-0.32
8,821.0	90.50	167.90	6,907.1	5,631.1	-1,777.4	471.8	1,813.3	0.81	0.16	-0.79
8,885.0	90.60	166.50	6,906.5	5,630.5	-1,839.8	486.0	1,876.8	2.19	0.16	-2.19
8,948.0	89.90	163.60	6,906.3	5,630.3	-1,900.6	502.2	1,938.9	4.74	-1.11	-4.60
9,011.0	90.50	164.10	6,906.0	5,630.0	-1,961.1	519.7	2,000.7	1.24	0.95	0.79
9,075.0	90.00	164.10	6,905.8	5,629.8	-2,022.7	537.3	2,063.6	0.78	-0.78	0.00
9,138.0	89.60	161.10	6,906.0	5,630.0	-2,082.8	556.1	2,125.2	4.80	-0.63	-4.76
9,201.0	90.30	162.60	6,906.0	5,630.0	-2,142.7	575.7	2,186.6	2.63	1.11	2.38
9,264.0	91.00	164.70	6,905.3	5,629.3	-2,203.1	593.5	2,248.5	3.51	1.11	3.33
9,327.0	90.80	163.60	6,904.3	5,628.3	-2,263.7	610.7	2,310.4	1.77	-0.32	-1.75
9,390.0	91.20	166.70	6,903.2	5,627.2	-2,324.6	626.8	2,372.5	4.96	0.63	4.92
9,454.0	90.90	167.10	6,902.1	5,626.1	-2,386.9	641.3	2,435.9	0.78	-0.47	0.63
9,517.0	90.20	166.30	6,901.4	5,625.4	-2,448.2	655.8	2,498.3	1.69	-1.11	-1.27
9,580.0	90.40	166.20	6,901.1	5,625.1	-2,509.4	670.8	2,560.6	0.35	0.32	-0.16
9,644.0	91.20	168.20	6,900.2	5,624.2	-2,571.8	685.0	2,624.0	3.37	1.25	3.13
9,707.0	91.70	169.10	6,898.6	5,622.6	-2,633.6	697.3	2,686.7	1.63	0.79	1.43
9,770.0	91.80	168.00	6,896.7	5,620.7	-2,695.3	709.8	2,749.3	1.75	0.16	-1.75
9,834.0	90.90	165.30	6,895.2	5,619.2	-2,757.5	724.6	2,812.6	4.45	-1.41	-4.22
9,897.0	89.40	165.90	6,895.0	5,619.0	-2,818.5	740.3	2,874.8	2.56	-2.38	0.95
9,960.0	88.80	165.30	6,896.0	5,620.0	-2,879.6	755.9	2,937.0	1.35	-0.95	-0.95
10,024.0	89.20	165.90	6,897.1	5,621.1	-2,941.5	771.9	3,000.2	1.13	0.63	0.94
10,087.0	88.90	166.00	6,898.2	5,622.2	-3,002.6	787.2	3,062.4	0.50	-0.48	0.16
10,150.0	88.90	166.10	6,899.4	5,623.4	-3,063.8	802.3	3,124.7	0.16	0.00	0.16
10,214.0	88.90	163.70	6,900.6	5,624.6	-3,125.5	819.0	3,187.8	3.75	0.00	-3.75
10,277.0	88.70	162.20	6,901.9	5,625.9	-3,185.8	837.5	3,249.4	2.40	-0.32	-2.38
10,340.0	88.40	161.20	6,903.5	5,627.5	-3,245.6	857.3	3,310.8	1.66	-0.48	-1.59
10,403.0	89.30	161.10	6,904.8	5,628.8	-3,305.2	877.6	3,372.0	1.44	1.43	-0.16
10,467.0	90.20	163.80	6,905.1	5,629.1	-3,366.2	896.9	3,434.6	4.45	1.41	4.22
10,530.0	89.50	162.20	6,905.2	5,629.2	-3,426.4	915.3	3,496.2	2.77	-1.11	-2.54
10,593.0	89.20	161.60	6,906.0	5,630.0	-3,486.3	934.9	3,557.7	1.06	-0.48	-0.95
10,657.0	89.40	162.20	6,906.7	5,630.7	-3,547.1	954.8	3,620.1	0.99	0.31	0.94
10,720.0	89.80	163.70	6,907.2	5,631.2	-3,607.4	973.2	3,681.7	2.46	0.63	2.38
10,783.0	88.90	161.10	6,907.9	5,631.9	-3,667.4	992.3	3,743.3	4.37	-1.43	-4.13
10,846.0	89.60	161.80	6,908.7	5,632.7	-3,727.1	1,012.3	3,804.6	1.57	1.11	1.11
10,909.0	91.20	164.40	6,908.3	5,632.3	-3,787.4	1,030.6	3,866.3	4.85	2.54	4.13
10,972.0	91.50	163.80	6,906.8	5,630.8	-3,848.0	1,047.9	3,928.2	1.06	0.48	-0.95
11,036.0	90.90	164.90	6,905.5	5,629.5	-3,909.6	1,065.2	3,991.2	1.96	-0.94	1.72



**Phoenix Technology Services**  
Survey Report



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Site Doddridge County 513346
Company:	EQT Production - Marcellus	TVD Reference:	KB @ 1276 0usft
Project:	Doddridge County, WV Grd	MD Reference:	KB @ 1276 0usft
Site:	Doddridge County 513346	North Reference:	Grid
Well:	Well #513346	Survey Calculation Method:	Minimum Curvature
Wellbore:	Main Wellbore		
Design:	513346 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)
11,099.0	89.80	166.00	6,905.1	5,629.1	-3,970.6	1,081.0	4,053.3	2.47	-1.75	1.75
11,162.0	89.40	165.60	6,905.5	5,629.5	-4,031.6	1,096.4	4,115.6	0.90	-0.63	-0.63
11,225.0	89.20	165.90	6,906.3	5,630.3	-4,092.7	1,111.9	4,177.8	0.57	-0.32	0.48
11,289.0	88.90	164.80	6,907.3	5,631.3	-4,154.6	1,128.1	4,240.9	1.78	-0.47	-1.72
11,352.0	89.80	166.10	6,908.1	5,632.1	-4,215.6	1,143.9	4,303.1	2.51	1.43	2.06
11,416.0	91.50	168.00	6,907.3	5,631.3	-4,277.9	1,158.3	4,366.5	3.98	2.66	2.97
11,479.0	91.40	167.30	6,905.7	5,629.7	-4,339.5	1,171.8	4,429.0	1.12	-0.16	-1.11
11,542.0	91.80	166.60	6,904.0	5,628.0	-4,400.8	1,186.0	4,491.4	1.28	0.63	-1.11
11,606.0	91.70	165.90	6,902.0	5,626.0	-4,462.9	1,201.2	4,554.7	1.10	-0.16	-1.09
11,669.0	91.60	166.30	6,900.2	5,624.2	-4,524.1	1,216.3	4,617.0	0.65	-0.16	0.63
11,732.0	91.20	166.60	6,898.7	5,622.7	-4,585.3	1,231.1	4,679.3	0.79	-0.63	0.48
11,795.0	90.30	165.10	6,897.8	5,621.8	-4,646.4	1,246.5	4,741.5	2.78	-1.43	-2.38
11,858.0	89.30	165.80	6,898.1	5,622.1	-4,707.4	1,262.3	4,803.7	1.94	-1.59	1.11
11,922.0	88.70	165.10	6,899.2	5,623.2	-4,769.3	1,278.4	4,866.9	1.44	-0.94	-1.09
11,985.0	88.50	164.50	6,900.7	5,624.7	-4,830.1	1,294.9	4,928.9	1.00	-0.32	-0.95
12,048.0	89.00	164.70	6,902.1	5,626.1	-4,890.8	1,311.6	4,990.9	0.85	0.79	0.32
12,111.0	88.50	164.30	6,903.5	5,627.5	-4,951.5	1,328.4	5,052.9	1.02	-0.79	-0.63
12,175.0	90.20	165.00	6,904.2	5,628.2	-5,013.2	1,345.4	5,115.9	2.87	2.66	1.09
12,238.0	91.90	166.40	6,903.0	5,627.0	-5,074.2	1,360.9	5,178.1	3.50	2.70	2.22
12,301.0	92.30	166.50	6,900.7	5,624.7	-5,135.4	1,375.7	5,240.4	0.65	0.63	0.16
12,365.0	91.50	166.20	6,898.6	5,622.6	-5,197.6	1,390.8	5,303.7	1.33	-1.25	-0.47
12,428.0	89.70	164.20	6,898.0	5,622.0	-5,258.5	1,406.9	5,366.8	4.27	-2.86	-3.17
12,491.0	89.50	164.70	6,898.4	5,622.4	-5,319.2	1,423.8	5,427.8	0.85	-0.32	0.79
12,554.0	89.30	164.80	6,899.1	5,623.1	-5,380.0	1,440.3	5,489.9	0.35	-0.32	0.16
12,617.0	90.60	164.70	6,899.1	5,623.1	-5,440.7	1,456.9	5,551.9	2.07	2.06	-0.16
12,681.0	90.60	164.10	6,898.4	5,622.4	-5,502.4	1,474.1	5,614.9	0.94	0.00	-0.94
12,744.0	91.40	164.70	6,897.3	5,621.3	-5,563.1	1,491.1	5,676.9	1.59	1.27	0.95
12,807.0	90.60	163.00	6,896.2	5,620.2	-5,623.6	1,508.6	5,738.7	2.98	-1.27	-2.70
12,870.0	90.30	162.30	6,895.7	5,619.7	-5,683.7	1,527.4	5,800.3	1.21	-0.48	-1.11
12,934.0	91.30	163.00	6,894.8	5,618.8	-5,744.8	1,546.4	5,862.9	1.91	1.56	1.09
12,997.0	92.00	163.00	6,893.0	5,617.0	-5,805.0	1,564.9	5,924.6	1.11	1.11	0.00
13,060.0	90.90	160.40	6,891.4	5,615.4	-5,864.8	1,584.6	5,985.9	4.48	-1.75	-4.13
13,123.0	90.90	160.50	6,890.5	5,614.5	-5,924.1	1,605.7	6,047.0	0.16	0.00	0.16
13,187.0	91.90	162.40	6,888.9	5,612.9	-5,984.8	1,626.1	6,109.3	3.35	1.56	2.97
13,250.0	92.40	163.20	6,886.5	5,610.5	-6,044.9	1,644.7	6,170.9	1.50	0.79	1.27
13,313.0	93.00	164.30	6,883.6	5,607.6	-6,105.3	1,662.3	6,232.6	1.99	0.95	1.75
13,376.0	93.50	164.20	6,880.0	5,604.0	-6,165.9	1,679.4	6,294.5	0.81	0.79	-0.16
13,440.0	93.00	162.90	6,876.4	5,600.4	-6,227.2	1,697.5	6,357.2	2.17	-0.78	-2.03
13,503.0	92.80	162.60	6,873.2	5,597.2	-6,287.3	1,716.1	6,418.7	0.57	-0.32	-0.48
13,566.0	92.70	162.40	6,870.1	5,594.1	-6,347.3	1,735.0	6,480.2	0.35	-0.16	-0.32
Last Survey=13629 MD/ 6867 TVD										
13,629.0	92.60	161.90	6,867.2	5,591.2	-6,407.2	1,754.3	6,541.7	0.81	-0.16	-0.79



Phoenix Technology Services  
Survey Report



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Site Doddridge County 513346
Company:	EOT Production - Marcellus	TVD Reference:	KB @ 1276 0usft
Project:	Doddridge County, WV Grid	MD Reference:	KB @ 1276 0usft
Site:	Doddridge County 513346	North Reference:	Grid
Well:	Well #513346	Survey Calculation Method:	Minimum Curvature
Wellbore:	Main Wellbore		
Design:	513346 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)
<b>513346 Plat TD</b>										
13,671.6	92.60	161.90	6,865.3	5,589.3	-6,447.6	1,767.5	6,583.1	0.00	0.00	0.00
<b>Projection to TD=13685' MD/ 6865' TVD</b>										
13,685.0	92.60	161.90	6,864.7	5,588.7	-6,460.3	1,771.7	6,596.2	0.00	0.00	0.00

Design Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
5,500.0	5,499.8	-25.3	22.1	Gyro Tie In=5500' MD
5,572.0	5,571.8	-24.6	22.7	KOP=5572' MD
13,629.0	6,867.2	-6,407.2	1,754.3	Last Survey=13629' MD/ 6867' TVD
13,685.0	6,864.7	-6,460.3	1,771.7	Projection to TD=13685' MD/ 6865' TVD

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





# EQT Production - Marcellus

Project: Doddridge County, WV Grid  
Site: Doddridge County 513346  
Well: Well #513346  
Wellbore: Main Wellbore  
Design: 513346 As Drilled Surveys

