

**PHOENIX**  
TECHNOLOGY SERVICES



## **EQT Production - Marcellus**

**Doddridge County, WV Grid**

**Doddridge County 512483**

**Well #512483**

**512483 ST01**

**Design: 512483 ST01 As Drilled Surveys**

## **Standard Survey Report**

**03 June, 2014**



**Where energy meets innovation.**

**02/12/2016**





Phoenix Technology Services  
Survey Report



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Site Doddridge County 512483
Company:	EQT Production - Marcellus	TVD Reference:	KB @ 1275.0usft
Project:	Doddridge County, WV Grid	MD Reference:	KB @ 1275.0usft
Site:	Doddridge County 512483	North Reference:	Grid
Well:	Well #512483	Survey Calculation Method:	Minimum Curvature
Wellbore:	512483 ST01		
Design:	512483 ST01 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 512483		
Site Position:		Northing:	266,045.59 usft
From:	Map	Easting:	1,634,165.92 usft
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "
		Latitude:	39.22
		Longitude:	-80.79
		Grid Convergence:	-0.82 "

Well	Well #512483		
Well Position	+N-S	0.0 usft	Northing: 266,045.59 usft
	+E-W	0.0 usft	Easting: 1,634,165.92 usft
Position Uncertainty	0.0 usft	Wellhead Elevation:	usft
		Latitude:	39° 13' 23.640 N
		Longitude:	80° 47' 28.803 W
		Ground Level:	1,259.0 usft

Wellbore	512483 ST01		
Magnetics	Model Name	Sample Date	Declination (°)
	IGRF2010_14	5/20/2014	-8.45
			Dip Angle (°)
			66.77
			Field Strength (nT)
			52,269

Design	512483 ST01 As Drilled Surveys		
Audit Notes:			
Version:	1.0	Phase:	ACTUAL
			Tie On Depth: 2,896.0
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)
	0.0	0.0	0.0
			Direction (°)
			335.00

Survey Program	Date	6/3/2014	
From (')	To (usft)	Survey (Wellbore)	Tool Name
0.00	2,896.0	512483 Gyrodata Gyro 05-12-14 (Main We	GYD_DP_MS
0.00	10,707.0	512483 ST01 MWD (512483 ST01)	MWD
			Description
			Gyrodata gyro-compassing and drop
			MWD - Standard

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	-1,275.0	0.0	0.0	0.0	0.00	0.00	0.00
<b>512476 Top Hole</b>										
6.2	0.05	118.58	6.2	-1,268.8	0.0	0.0	0.0	0.76	0.76	0.00
41.0	0.31	118.58	41.0	-1,234.0	-0.1	0.1	-0.1	0.76	0.76	0.00
66.0	0.26	137.20	66.0	-1,209.0	-0.1	0.2	-0.2	0.42	-0.20	74.48
91.0	0.21	154.97	91.0	-1,184.0	-0.2	0.3	-0.3	0.35	-0.20	71.08
116.0	0.15	160.28	116.0	-1,159.0	-0.3	0.3	-0.4	0.25	-0.24	21.24
141.0	0.13	140.80	141.0	-1,134.0	-0.3	0.3	-0.4	0.21	-0.08	-77.92





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Project:	Doddridge County, WV Grid	MD Reference:	KB @ 1275.0usft
Site:	Doddridge County 512483	North Reference:	Gnd
Well:	Well #512483	Survey Calculation Method:	Minimum Curvature
Wellbore:	512483 ST01		
Design:	512483 ST01 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)
166.0	0.13	155.66	166.0	-1,109.0	-0.4	0.3	-0.5	0.13	0.00	59.44
191.0	0.10	139.13	191.0	-1,084.0	-0.4	0.4	-0.5	0.18	-0.12	-66.12
216.0	0.14	134.07	216.0	-1,059.0	-0.5	0.4	-0.6	0.17	0.16	-20.24
241.0	0.18	134.16	241.0	-1,034.0	-0.5	0.5	-0.7	0.16	0.16	0.36
266.0	0.11	126.99	266.0	-1,009.0	-0.6	0.5	-0.7	0.29	-0.28	-28.68
291.0	0.11	107.65	291.0	-984.0	-0.6	0.5	-0.8	0.15	0.00	-77.36
316.0	0.17	117.13	316.0	-959.0	-0.6	0.6	-0.8	0.26	0.24	37.92
341.0	0.14	125.35	341.0	-934.0	-0.6	0.7	-0.9	0.15	-0.12	32.88
366.0	0.11	134.66	366.0	-909.0	-0.7	0.7	-0.9	0.14	-0.12	37.24
391.0	0.14	153.43	391.0	-884.0	-0.7	0.7	-1.0	0.20	0.12	75.08
416.0	0.19	123.83	416.0	-859.0	-0.8	0.8	-1.0	0.39	0.20	-118.40
441.0	0.19	115.85	441.0	-834.0	-0.8	0.9	-1.1	0.11	0.00	-31.92
466.0	0.28	120.99	466.0	-809.0	-0.9	0.9	-1.2	0.37	0.36	20.56
491.0	0.27	128.00	491.0	-784.0	-0.9	1.0	-1.3	0.14	-0.04	28.04
516.0	0.32	125.68	516.0	-759.0	-1.0	1.1	-1.4	0.21	0.20	-9.28
541.0	0.38	135.10	541.0	-734.0	-1.1	1.3	-1.5	0.33	0.24	37.68
566.0	0.29	134.28	566.0	-709.0	-1.2	1.4	-1.7	0.36	-0.36	-3.28
591.0	0.35	146.43	591.0	-684.0	-1.3	1.4	-1.8	0.36	0.24	48.60
616.0	0.43	145.76	616.0	-659.0	-1.4	1.5	-2.0	0.32	0.32	-2.68
641.0	0.41	149.89	641.0	-634.0	-1.6	1.6	-2.1	0.15	-0.08	16.52
666.0	0.34	150.46	666.0	-609.0	-1.7	1.7	-2.3	0.28	-0.28	2.28
691.0	0.44	157.79	691.0	-584.0	-1.9	1.8	-2.5	0.45	0.40	29.32
716.0	0.45	152.25	716.0	-559.0	-2.1	1.9	-2.7	0.18	0.04	-22.16
741.0	0.53	145.27	741.0	-534.0	-2.3	2.0	-2.9	0.40	0.32	-27.92
766.0	0.73	140.58	766.0	-509.0	-2.5	2.2	-3.2	0.83	0.80	-18.76
791.0	0.87	141.22	791.0	-484.0	-2.7	2.4	-3.5	0.56	0.56	2.56
816.0	0.95	141.01	816.0	-459.0	-3.1	2.6	-3.9	0.32	0.32	-0.84
841.0	0.93	142.48	841.0	-434.0	-3.4	2.9	-4.3	0.13	-0.08	5.88
866.0	0.96	145.53	866.0	-409.0	-3.7	3.1	-4.7	0.23	0.12	12.20
891.0	0.90	146.19	891.0	-384.0	-4.0	3.3	-5.1	0.24	-0.24	2.64
916.0	0.71	148.10	916.0	-359.0	-4.3	3.5	-5.4	0.77	-0.76	7.64
941.0	0.43	159.10	941.0	-334.0	-4.6	3.7	-5.7	1.20	-1.12	44.00
966.0	0.32	157.66	966.0	-309.0	-4.7	3.7	-5.8	0.44	-0.44	-5.76
991.0	0.35	150.08	991.0	-284.0	-4.8	3.8	-6.0	0.21	0.12	-30.32
1,016.0	0.28	149.34	1,016.0	-259.0	-5.0	3.8	-6.1	0.28	-0.28	-2.96
1,041.0	0.17	152.88	1,041.0	-234.0	-5.0	3.9	-6.2	0.44	-0.44	14.16
1,066.0	0.18	125.06	1,066.0	-209.0	-5.1	3.9	-6.3	0.34	0.04	-111.28
1,091.0	0.23	116.25	1,091.0	-184.0	-5.1	4.0	-6.4	0.24	0.20	-35.24
1,116.0	0.18	141.62	1,116.0	-159.0	-5.2	4.1	-6.4	0.41	-0.20	101.48
1,141.0	0.18	132.86	1,141.0	-134.0	-5.3	4.1	-6.5	0.11	0.00	-35.04
1,166.0	0.22	135.18	1,166.0	-109.0	-5.3	4.2	-6.6	0.16	0.16	9.28
1,191.0	0.22	162.92	1,191.0	-84.0	-5.4	4.3	-6.7	0.42	0.00	110.96
1,216.0	0.21	145.68	1,216.0	-59.0	-5.5	4.3	-6.8	0.26	-0.04	-68.96





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Survey Report



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Project:	Doddridge County, WV Grid	MD Reference:	KB @ 1275 0usft
Site:	Doddridge County 512483	North Reference:	Grid
Well:	Well #512483	Survey Calculation Method:	Minimum Curvature
Wellbore:	512483 ST01		
Design:	512483 ST01 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)
1,241.0	0.09	138.12	1,241.0	-34.0	-5.5	4.3	-6.8	0.49	-0.48	-30.24
1,266.0	0.22	150.35	1,266.0	-9.0	-5.6	4.4	-6.9	0.53	0.52	48.92
1,291.0	0.31	156.20	1,291.0	16.0	-5.7	4.4	-7.0	0.38	0.36	23.40
1,316.0	0.43	158.78	1,316.0	41.0	-5.8	4.5	-7.2	0.48	0.48	10.32
1,341.0	0.58	157.53	1,341.0	66.0	-6.0	4.6	-7.4	0.60	0.60	-5.00
1,366.0	0.45	166.80	1,366.0	91.0	-6.3	4.6	-7.6	0.62	-0.52	37.08
1,391.0	0.55	160.85	1,391.0	116.0	-6.5	4.7	-7.9	0.45	0.40	-23.80
1,416.0	0.56	163.84	1,416.0	141.0	-6.7	4.8	-8.1	0.12	0.04	11.96
1,441.0	0.59	167.13	1,441.0	166.0	-6.9	4.8	-8.3	0.18	0.12	13.16
1,466.0	0.61	161.69	1,466.0	191.0	-7.2	4.9	-8.6	0.24	0.08	-21.76
1,491.0	0.64	163.95	1,491.0	216.0	-7.5	5.0	-8.9	0.16	0.12	9.04
1,516.0	0.70	162.58	1,516.0	241.0	-7.7	5.1	-9.2	0.25	0.24	-5.48
1,541.0	0.76	163.58	1,541.0	266.0	-8.0	5.2	-9.5	0.25	0.24	4.00
1,566.0	0.70	165.02	1,566.0	291.0	-8.3	5.2	-9.8	0.25	-0.24	5.76
1,591.0	0.75	156.35	1,591.0	316.0	-8.6	5.4	-10.1	0.48	0.20	-34.68
1,616.0	0.75	164.62	1,615.9	340.9	-9.0	5.5	-10.4	0.43	0.00	33.08
1,641.0	0.73	166.66	1,640.9	365.9	-9.3	5.5	-10.7	0.13	-0.08	8.16
1,666.0	0.65	170.30	1,665.9	390.9	-9.6	5.6	-11.0	0.36	-0.32	14.56
1,691.0	0.77	162.68	1,690.9	415.9	-9.9	5.7	-11.3	0.61	0.48	-30.48
1,716.0	0.98	159.42	1,715.9	440.9	-10.2	5.8	-11.7	0.86	0.84	-13.04
1,741.0	0.91	150.45	1,740.9	465.9	-10.6	6.0	-12.1	0.65	-0.28	-35.88
1,766.0	1.00	145.94	1,765.9	490.9	-10.9	6.2	-12.5	0.47	0.36	-18.04
1,791.0	1.17	138.28	1,790.9	515.9	-11.3	6.5	-13.0	0.89	0.68	-30.64
1,816.0	1.23	141.91	1,815.9	540.9	-11.7	6.8	-13.5	0.39	0.24	14.52
1,841.0	1.20	145.90	1,840.9	565.9	-12.1	7.1	-14.0	0.36	-0.12	15.96
1,866.0	1.17	142.09	1,865.9	590.9	-12.6	7.4	-14.5	0.34	-0.12	-15.24
1,891.0	1.05	135.82	1,890.9	615.9	-12.9	7.8	-15.0	0.68	-0.48	-25.08
1,916.0	0.95	137.55	1,915.9	640.9	-13.2	8.1	-15.4	0.42	-0.40	6.92
1,941.0	0.90	139.65	1,940.9	665.9	-13.6	8.3	-15.8	0.24	-0.20	8.40
1,966.0	0.89	140.97	1,965.9	690.9	-13.9	8.6	-16.2	0.09	-0.04	5.28
1,991.0	0.91	143.82	1,990.9	715.9	-14.2	8.8	-16.6	0.20	0.08	11.40
2,016.0	0.82	143.41	2,015.9	740.9	-14.5	9.0	-16.9	0.36	-0.36	-1.64
2,041.0	0.74	143.60	2,040.9	765.9	-14.7	9.2	-17.3	0.32	-0.32	0.76
2,066.0	0.74	148.21	2,065.9	790.9	-15.0	9.4	-17.6	0.24	0.00	18.44
2,091.0	0.71	144.46	2,090.9	815.9	-15.3	9.6	-17.9	0.22	-0.12	-15.00
2,116.0	0.62	142.86	2,115.9	840.9	-15.5	9.8	-18.2	0.37	-0.36	-6.40
2,141.0	0.52	144.32	2,140.9	865.9	-15.7	9.9	-18.4	0.40	-0.40	5.84
2,166.0	0.56	137.26	2,165.9	890.9	-15.9	10.1	-18.7	0.31	0.16	-28.24
2,191.0	0.59	130.94	2,190.9	915.9	-16.1	10.2	-18.9	0.28	0.12	-25.28
2,216.0	0.52	128.08	2,215.9	940.9	-16.2	10.4	-19.1	0.30	-0.28	-11.44
2,241.0	0.47	130.06	2,240.9	965.9	-16.4	10.6	-19.3	0.21	-0.20	7.92
2,266.0	0.43	121.45	2,265.9	990.9	-16.5	10.8	-19.5	0.31	-0.16	-34.44





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2,291.0	0.33	117.41	2,290.9	1,015.9	-16.5	10.9	-19.6	0.41	-0.40	-16.16
2,316.0	0.31	118.89	2,315.9	1,040.9	-16.6	11.0	-19.7	0.09	-0.08	5.92
2,341.0	0.47	130.54	2,340.9	1,065.9	-16.7	11.2	-19.9	0.71	0.64	46.60
2,366.0	0.54	150.82	2,365.9	1,090.9	-16.9	11.3	-20.1	0.76	0.28	81.12
2,391.0	0.66	161.03	2,390.9	1,115.9	-17.1	11.4	-20.3	0.64	0.48	40.84
2,416.0	0.55	153.88	2,415.9	1,140.9	-17.4	11.5	-20.6	0.53	-0.44	-28.60
2,441.0	0.46	123.89	2,440.9	1,165.9	-17.5	11.6	-20.8	1.10	-0.36	-119.96
2,466.0	0.50	85.55	2,465.9	1,190.9	-17.6	11.8	-20.9	1.27	0.16	-153.36
2,491.0	0.83	57.67	2,490.9	1,215.9	-17.5	12.1	-20.9	1.81	1.32	-111.52
2,516.0	0.94	52.79	2,515.9	1,240.9	-17.3	12.4	-20.9	0.53	0.44	-19.52
2,541.0	0.97	50.45	2,540.9	1,265.9	-17.0	12.7	-20.8	0.20	0.12	-9.36
2,566.0	1.17	46.09	2,565.9	1,290.9	-16.7	13.1	-20.6	0.86	0.80	-17.44
2,591.0	1.37	42.90	2,590.9	1,315.9	-16.3	13.5	-20.4	0.85	0.80	-12.76
2,616.0	1.48	43.23	2,615.8	1,340.8	-15.8	13.9	-20.2	0.44	0.44	1.32
2,641.0	1.50	43.63	2,640.8	1,365.8	-15.4	14.3	-20.0	0.09	0.08	1.60
2,666.0	1.43	40.49	2,665.8	1,390.8	-14.9	14.8	-19.7	0.43	-0.28	-12.56
2,691.0	1.61	39.18	2,690.8	1,415.8	-14.4	15.2	-19.4	0.73	0.72	-5.24
2,716.0	1.53	38.62	2,715.8	1,440.8	-13.8	15.6	-19.1	0.33	-0.32	-2.24
2,741.0	1.34	38.00	2,740.8	1,465.8	-13.4	16.0	-18.9	0.76	-0.76	-2.48
2,766.0	1.16	42.57	2,765.8	1,490.8	-12.9	16.4	-18.6	0.82	-0.72	18.28
2,791.0	0.99	46.95	2,790.8	1,515.8	-12.6	16.7	-18.5	0.75	-0.68	17.52
2,816.0	0.91	48.15	2,815.8	1,540.8	-12.3	17.0	-18.3	0.33	-0.32	4.80
2,841.0	0.79	35.26	2,840.8	1,565.8	-12.0	17.2	-18.2	0.90	-0.48	-51.56
2,866.0	0.86	41.03	2,865.8	1,590.8	-11.8	17.5	-18.0	0.43	0.28	23.08
2,891.0	0.78	42.78	2,890.8	1,615.8	-11.5	17.7	-17.9	0.34	-0.32	7.00
<b>Gyro Tie In=2896' MD</b>										
2,896.0	0.73	38.43	2,895.8	1,620.8	-11.4	17.7	-17.9	1.52	-1.00	-87.00
2,932.0	0.50	37.60	2,931.8	1,656.8	-11.1	18.0	-17.7	0.64	-0.64	-2.31
2,963.0	0.40	1.00	2,962.8	1,687.8	-10.9	18.1	-17.5	0.96	-0.32	-118.06
2,994.0	2.20	1.60	2,993.8	1,718.8	-10.2	18.1	-16.9	5.81	5.81	1.94
3,026.0	5.90	18.20	3,025.7	1,750.7	-8.0	18.6	-15.2	12.01	11.56	51.88
3,057.0	7.70	21.30	3,056.5	1,781.5	-4.6	19.9	-12.6	5.92	5.81	10.00
3,089.0	7.30	20.50	3,088.2	1,813.2	-0.7	21.4	-9.7	1.29	-1.25	-2.50
3,120.0	7.50	19.70	3,118.9	1,843.9	3.1	22.7	-6.8	0.73	0.65	-2.58
3,151.0	7.40	18.50	3,149.7	1,874.7	6.8	24.0	-4.0	0.60	-0.32	-3.87
3,183.0	8.00	26.30	3,181.4	1,906.4	10.8	25.7	-1.1	3.76	1.88	24.38
3,214.0	7.50	27.80	3,212.1	1,937.1	14.5	27.6	1.5	1.74	-1.61	4.84
3,246.0	7.00	24.00	3,243.8	1,968.8	18.2	29.4	4.0	2.16	-1.56	-11.88
3,278.0	6.40	18.20	3,275.6	2,000.6	21.6	30.7	6.6	2.82	-1.88	-18.13
3,309.0	6.30	16.60	3,306.4	2,031.4	24.9	31.7	9.2	0.66	-0.32	-5.16
3,341.0	5.80	19.30	3,338.3	2,063.3	28.1	32.8	11.6	1.80	-1.56	8.44
3,373.0	4.00	20.10	3,370.1	2,095.1	30.7	33.7	13.6	5.63	-5.63	2.50
3,404.0	2.20	16.70	3,401.1	2,126.1	32.3	34.2	14.8	5.83	-5.81	-10.97





**Phoenix Technology Services**  
Survey Report



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Site Doddridge County 512483
Company:	EQT Production - Marcellus	TVD Reference:	KB @ 1275 0usft
Project:	Doddridge County, WV Grd	MD Reference:	KB @ 1275 0usft
Site:	Doddridge County 512483	North Reference:	Grd
Well:	Well #512483	Survey Calculation Method:	Minimum Curvature
Wellbore:	512483 ST01		
Design:	512483 ST01 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)
3,435.0	1.80	2.70	3,432.1	2,157.1	33.3	34.4	15.7	2.03	-1.29	-45.16
3,498.0	2.30	351.30	3,495.0	2,220.0	35.6	34.3	17.7	1.02	0.79	-18.10
3,561.0	1.10	71.70	3,558.0	2,283.0	37.0	34.7	18.9	3.77	-1.90	127.62
3,624.0	0.80	102.30	3,621.0	2,346.0	37.1	35.7	18.5	0.92	-0.48	48.57
3,686.0	0.60	95.20	3,683.0	2,408.0	37.0	36.4	18.1	0.35	-0.32	-11.45
3,749.0	0.20	51.50	3,746.0	2,471.0	37.0	36.8	18.0	0.76	-0.63	-69.37
3,812.0	0.60	69.50	3,809.0	2,534.0	37.2	37.2	18.0	0.66	0.63	28.57
3,875.0	0.60	72.30	3,872.0	2,597.0	37.4	37.8	17.9	0.05	0.00	4.44
3,938.0	0.40	44.90	3,935.0	2,660.0	37.7	38.3	17.9	0.49	-0.32	-43.49
4,001.0	0.40	43.80	3,998.0	2,723.0	38.0	38.6	18.1	0.01	0.00	-1.75
4,064.0	0.40	105.10	4,061.0	2,786.0	38.1	39.0	18.0	0.65	0.00	97.30
4,127.0	0.40	8.00	4,124.0	2,849.0	38.2	39.2	18.1	0.95	0.00	-154.13
4,190.0	1.10	24.30	4,187.0	2,912.0	39.0	39.5	18.7	1.15	1.11	25.87
4,253.0	0.90	285.70	4,250.0	2,975.0	39.7	39.3	19.4	2.42	-0.32	-156.51
4,316.0	1.40	281.50	4,313.0	3,038.0	40.0	38.0	20.2	0.80	0.79	-6.67
4,379.0	1.40	280.80	4,375.9	3,100.9	40.3	36.5	21.1	0.03	0.00	-1.11
4,442.0	0.30	227.60	4,438.9	3,163.9	40.3	35.7	21.5	1.97	-1.75	-84.44
4,505.0	0.70	191.10	4,501.9	3,226.9	39.8	35.5	21.1	0.78	0.63	-57.94
4,568.0	0.50	149.90	4,564.9	3,289.9	39.2	35.5	20.5	0.73	-0.32	-65.40
4,631.0	1.00	132.60	4,627.9	3,352.9	38.6	36.1	19.7	0.86	0.79	-27.46
4,694.0	1.10	129.20	4,690.9	3,415.9	37.9	36.9	18.7	0.19	0.16	-5.40
4,757.0	1.00	101.00	4,753.9	3,478.9	37.4	38.0	17.8	0.83	-0.16	-44.76
4,820.0	0.70	69.50	4,816.9	3,541.9	37.4	38.9	17.5	0.86	-0.48	-50.00
4,883.0	1.00	55.40	4,879.9	3,604.9	37.8	39.7	17.5	0.58	0.48	-22.38
4,946.0	0.80	343.70	4,942.9	3,667.9	38.6	40.0	18.1	1.69	-0.32	-113.81
5,009.0	0.90	1.10	5,005.9	3,730.9	39.5	39.9	18.9	0.44	0.16	27.62
5,072.0	0.80	13.40	5,068.9	3,793.9	40.4	40.0	19.7	0.33	-0.16	19.52
5,135.0	0.90	357.40	5,131.9	3,856.9	41.3	40.1	20.5	0.41	0.16	-25.40
5,198.0	0.70	339.30	5,194.9	3,919.9	42.2	39.9	21.4	0.51	-0.32	-28.73
5,258.0	1.10	200.10	5,254.9	3,979.9	42.0	39.6	21.3	2.82	0.67	-232.00
5,289.0	5.30	176.10	5,285.8	4,010.8	40.3	39.6	19.8	13.93	13.55	-77.42
5,321.0	9.30	174.30	5,317.5	4,042.5	36.2	39.9	16.0	12.52	12.50	-5.63
5,352.0	13.20	175.00	5,347.9	4,072.9	30.2	40.5	10.3	12.59	12.58	2.26
5,384.0	15.30	174.70	5,378.9	4,103.9	22.4	41.2	2.9	6.57	6.56	-0.94
5,416.0	18.30	172.70	5,409.6	4,134.6	13.2	42.2	-5.9	9.55	9.38	-6.25
5,447.0	19.90	172.90	5,438.9	4,163.9	3.1	43.5	-15.6	5.17	5.16	0.65
5,478.0	23.30	171.90	5,467.7	4,192.7	-8.2	45.0	-26.5	11.03	10.97	-3.23
5,510.0	26.20	173.30	5,496.7	4,221.7	-21.5	46.7	-39.2	9.25	9.06	4.38
5,541.0	28.80	171.40	5,524.2	4,249.2	-35.7	48.7	-52.9	8.85	8.39	-6.13
5,573.0	29.90	166.30	5,552.1	4,277.1	-51.0	51.7	-68.1	8.53	3.44	-15.94
5,604.0	32.70	167.70	5,578.6	4,303.6	-66.7	55.3	-83.8	9.33	9.03	4.52
5,636.0	36.70	168.60	5,604.9	4,329.9	-84.6	59.0	-101.6	12.60	12.50	2.81





Phoenix Technology Services  
Survey Report



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Site Doddridge County 512483
Company:	EQT Production - Marcellus	TVD Reference:	KB @ 1275.0usft
Project:	Doddridge County, WV Grd	MD Reference:	KB @ 1275.0usft
Site:	Doddridge County 512483	North Reference:	Grd
Well:	Well #512483	Survey Calculation Method:	Minimum Curvature
Wellbore:	512483 ST01		
Design:	512483 ST01 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)
5,667.0	37.60	169.20	5,629.6	4,354.6	-102.9	62.6	-119.8	3.13	2.90	1.94
5,699.0	37.10	165.60	5,655.1	4,380.1	-121.9	66.9	-138.7	7.00	-1.56	-11.25
5,730.0	36.00	159.60	5,680.0	4,405.0	-139.5	72.4	-157.0	12.06	-3.55	-19.35
5,761.0	34.20	155.50	5,705.4	4,430.4	-155.9	78.2	-174.8	9.57	-5.81	-13.23
5,793.0	29.50	153.50	5,732.5	4,457.5	-171.2	86.4	-191.7	15.05	-14.69	-6.25
5,824.0	25.90	154.50	5,760.0	4,485.0	-184.1	92.7	-206.1	11.71	-11.61	3.23
5,855.0	22.20	160.30	5,788.3	4,513.3	-195.8	97.6	-218.7	14.15	-11.94	18.71
5,887.0	18.20	162.60	5,818.3	4,543.3	-206.2	101.2	-229.7	12.74	-12.50	7.19
5,918.0	14.00	165.40	5,848.1	4,573.1	-214.5	103.6	-238.1	13.77	-13.55	9.03
5,950.0	10.10	170.10	5,879.4	4,604.4	-221.0	105.0	-244.7	12.56	-12.19	14.69
5,981.0	6.60	169.70	5,910.0	4,635.0	-225.4	105.8	-249.0	11.29	-11.29	-1.29
6,013.0	5.50	146.70	5,941.9	4,666.9	-228.5	107.0	-252.3	8.24	-3.44	-71.88
6,044.0	4.90	130.60	5,972.7	4,697.7	-230.6	108.8	-255.0	5.07	-1.94	-51.94
6,075.0	3.70	117.20	6,003.7	4,728.7	-231.9	110.7	-257.0	5.02	-3.87	-43.23
6,107.0	2.20	76.30	6,035.6	4,760.6	-232.3	112.2	-257.9	7.79	-4.69	-127.81
6,138.0	1.80	31.70	6,066.6	4,791.6	-231.7	113.0	-257.8	5.04	-1.29	-143.87
6,170.0	3.60	359.60	6,098.6	4,823.6	-230.3	113.3	-256.6	7.14	5.63	-100.31
6,201.0	6.60	0.80	6,129.4	4,854.4	-227.5	113.3	-254.1	9.68	9.68	3.87
6,233.0	9.50	1.20	6,161.1	4,886.1	-223.0	113.4	-250.1	9.06	9.06	1.25
6,264.0	12.40	360.00	6,191.5	4,916.5	-217.1	113.5	-244.7	9.38	9.35	-3.87
6,296.0	15.90	355.60	6,222.6	4,947.6	-209.3	113.1	-237.5	11.43	10.94	-13.75
6,327.0	18.60	348.30	6,252.2	4,977.2	-200.3	111.8	-228.7	11.15	8.71	-23.55
6,358.0	22.10	339.20	6,281.2	5,006.2	-190.0	108.7	-218.1	15.19	11.29	-29.35
6,390.0	25.90	334.70	6,310.5	5,035.5	-178.0	103.6	-205.1	13.17	11.88	-14.06
6,421.0	29.20	332.20	6,338.0	5,063.0	-165.2	97.2	-190.8	11.28	10.65	-8.06
6,453.0	31.60	333.40	6,365.6	5,090.6	-150.8	89.8	-174.6	7.74	7.50	3.75
6,484.0	33.10	335.60	6,391.7	5,116.7	-135.8	82.6	-158.0	6.15	4.84	7.10
6,516.0	36.50	335.60	6,418.0	5,143.0	-119.2	75.1	-139.8	10.63	10.63	0.00
6,547.0	39.50	336.10	6,442.4	5,167.4	-101.8	67.3	-120.7	9.73	9.68	1.61
6,579.0	42.60	336.50	6,466.6	5,191.6	-82.5	58.8	-99.7	9.72	9.69	1.25
6,610.0	45.20	337.60	6,488.9	5,213.9	-62.7	50.5	-78.2	8.74	8.39	3.55
<b>512475 Top of Perf</b>										
6,628.1	46.90	336.44	6,501.5	5,226.5	-50.7	45.4	-65.1	10.42	9.35	-6.38
<b>512474 Top of Perf</b>										
6,642.0	48.20	335.60	6,510.9	5,235.9	-41.4	41.2	-54.9	10.42	9.41	-6.08
<b>512473 Top of Perf</b>										
6,642.2	48.20	335.60	6,511.0	5,236.0	-41.2	41.1	-54.7	0.00	0.00	0.00
6,673.0	51.20	336.20	6,530.9	5,255.9	-19.8	31.6	-31.3	9.86	9.75	1.95
6,705.0	55.30	336.50	6,550.0	5,275.0	3.7	21.3	-5.7	12.83	12.81	0.94
6,736.0	56.90	338.30	6,567.3	5,292.3	27.4	11.4	20.1	7.06	5.16	5.81
6,768.0	61.20	336.70	6,583.8	5,308.8	52.8	0.9	47.5	14.10	13.44	-5.00
6,799.0	65.60	336.90	6,597.7	5,322.7	78.3	-10.0	75.2	14.21	14.19	0.65
6,831.0	69.10	335.90	6,610.0	5,335.0	105.3	-21.9	104.7	11.31	10.94	-3.13





Phoenix Technology Services  
Survey Report



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Site Doddridge County 512483
Company:	EQT Production - Marcellus	TVD Reference:	KB @ 1275 0usft
Project:	Doddridge County, WV Grid	MD Reference:	KB @ 1275 0usft
Site:	Doddridge County 512483	North Reference:	Gnd
Well:	Well #512483	Survey Calculation Method:	Minimum Curvature
Wellbore:	512483 ST01		
Design:	512483 ST01 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)
6,862.0	72.80	336.40	6,620.1	5,345.1	132.1	-33.7	134.0	12.03	11.94	1.61
6,893.0	75.50	333.70	6,628.6	5,353.6	159.1	-46.3	163.8	12.08	8.71	-8.71
6,925.0	77.10	331.50	6,636.2	5,361.2	186.7	-60.6	194.8	8.34	5.00	-6.88
6,956.0	77.80	331.60	6,642.9	5,367.9	213.3	-75.0	225.1	2.28	2.26	0.32
6,988.0	79.50	332.30	6,649.2	5,374.2	241.0	-89.8	256.4	5.73	5.31	2.19
7,019.0	83.20	333.00	6,653.8	5,378.8	268.2	-103.8	287.0	12.14	11.94	2.26
7,050.0	87.30	331.30	6,656.4	5,381.4	295.6	-118.3	317.8	14.31	13.23	-5.48
<b>512483 LP 325' VS</b>										
7,058.8	87.52	331.36	6,656.8	5,381.8	303.3	-122.5	326.6	2.58	2.50	0.63
<b>LP=7082' MD/ 6658' TVD</b>										
7,082.0	88.10	331.50	6,657.7	5,382.7	323.6	-133.6	349.8	2.58	2.50	0.62
7,145.0	87.90	331.70	6,659.9	5,384.9	379.0	-163.5	412.6	0.45	-0.32	0.32
7,208.0	89.30	331.40	6,661.4	5,386.4	434.4	-193.5	475.5	2.27	2.22	-0.48
7,271.0	90.40	333.40	6,661.6	5,386.6	490.2	-222.7	538.4	3.62	1.75	3.17
<b>512483 LP</b>										
7,305.7	89.85	334.39	6,661.5	5,386.5	521.3	-238.0	573.1	3.27	-1.59	2.86
7,334.0	89.40	335.20	6,661.7	5,386.7	547.0	-250.0	601.4	3.27	-1.59	2.86
7,396.0	88.50	336.10	6,662.8	5,387.8	603.5	-275.6	663.4	2.05	-1.45	1.45
7,459.0	88.40	335.90	6,664.5	5,389.5	661.0	-301.2	726.3	0.35	-0.16	-0.32
7,522.0	88.20	335.50	6,666.4	5,391.4	718.4	-327.1	789.3	0.71	-0.32	-0.63
7,585.0	88.40	336.10	6,668.3	5,393.3	775.8	-352.9	852.3	1.00	0.32	0.95
7,648.0	87.80	334.70	6,670.4	5,395.4	833.1	-379.1	915.2	2.42	-0.95	-2.22
7,711.0	87.50	335.10	6,673.0	5,398.0	890.1	-405.8	978.2	0.79	-0.48	0.63
7,774.0	87.70	334.10	6,675.6	5,400.6	946.9	-432.8	1,041.1	1.62	0.32	-1.59
7,837.0	88.40	334.00	6,677.7	5,402.7	1,003.5	-460.4	1,104.1	1.12	1.11	-0.16
7,900.0	88.60	333.20	6,679.4	5,404.4	1,059.9	-488.4	1,167.0	1.31	0.32	-1.27
7,963.0	89.30	333.10	6,680.5	5,405.5	1,116.1	-516.8	1,230.0	1.12	1.11	-0.16
8,026.0	89.10	332.90	6,681.4	5,406.4	1,172.3	-545.4	1,293.0	0.45	-0.32	-0.32
8,090.0	89.00	332.20	6,682.5	5,407.5	1,229.1	-574.9	1,356.9	1.10	-0.16	-1.09
8,152.0	87.90	330.30	6,684.2	5,409.2	1,283.4	-604.7	1,418.7	3.54	-1.77	-3.06
8,215.0	88.10	331.30	6,686.4	5,411.4	1,338.4	-635.5	1,481.5	1.62	0.32	1.59
8,278.0	88.40	333.30	6,688.3	5,413.3	1,394.1	-664.7	1,544.4	3.21	0.48	3.17
8,341.0	87.10	330.80	6,690.8	5,415.8	1,449.7	-694.2	1,607.3	4.47	-2.06	-3.97
8,404.0	86.50	333.00	6,694.3	5,419.3	1,505.2	-723.9	1,670.1	3.61	-0.95	3.49
8,467.0	86.50	332.20	6,698.1	5,423.1	1,561.0	-752.8	1,732.9	1.27	0.00	-1.27
8,530.0	87.20	334.60	6,701.6	5,426.6	1,617.3	-781.0	1,795.8	3.96	1.11	3.81
8,593.0	87.20	334.70	6,704.7	5,429.7	1,674.1	-807.9	1,858.7	0.16	0.00	0.16
8,656.0	87.20	337.30	6,707.7	5,432.7	1,731.6	-833.5	1,921.6	4.12	0.00	4.13
8,719.0	88.40	339.50	6,710.2	5,435.2	1,790.1	-856.7	1,984.5	3.98	1.90	3.49
8,782.0	88.90	338.10	6,711.6	5,436.6	1,848.9	-879.4	2,047.3	2.36	0.79	-2.22
8,845.0	88.80	337.30	6,712.9	5,437.9	1,907.1	-903.3	2,110.2	1.28	-0.16	-1.27
8,908.0	89.00	337.90	6,714.1	5,439.1	1,965.4	-927.3	2,173.1	1.00	0.32	0.95
8,971.0	89.00	337.10	6,715.2	5,440.2	2,023.6	-951.4	2,236.1	1.27	0.00	-1.27





Phoenix Technology Services  
Survey Report



Database:	EDM 5000 1 Single User Db	Local Co-ordinate Reference:	Site Doddridge County 512483
Company:	EQT Production - Marcellus	TVD Reference:	KB @ 1275 0usft
Project:	Doddridge County, WV Grd	MD Reference:	KB @ 1275 0usft
Site:	Doddridge County 512483	North Reference:	Grd
Well:	Well #512483	Survey Calculation Method:	Minimum Curvature
Wellbore:	512483 ST01		
Design:	512483 ST01 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)
9,033.0	88.90	337.00	6,716.4	5,441.4	2,080.6	-975.6	2,298.0	0.23	-0.16	-0.16
9,096.0	88.90	336.60	6,717.6	5,442.6	2,138.5	-1,000.4	2,361.0	0.63	0.00	-0.63
9,159.0	88.60	336.10	6,718.9	5,443.9	2,196.2	-1,025.7	2,423.9	0.93	-0.48	-0.79
9,222.0	88.40	335.10	6,720.6	5,445.6	2,253.6	-1,051.7	2,486.9	1.62	-0.32	-1.59
9,286.0	88.40	334.20	6,722.4	5,447.4	2,311.4	-1,079.1	2,550.9	1.41	0.00	-1.41
9,348.0	88.60	334.90	6,724.0	5,449.0	2,367.4	-1,105.7	2,612.9	1.17	0.32	1.13
9,411.0	88.70	337.30	6,725.5	5,450.5	2,424.9	-1,131.3	2,675.8	3.81	0.16	3.81
9,475.0	88.50	337.40	6,727.0	5,452.0	2,484.0	-1,155.9	2,739.8	0.35	-0.31	0.16
9,537.0	88.50	336.50	6,728.7	5,453.7	2,541.0	-1,180.2	2,801.7	1.45	0.00	-1.45
9,600.0	88.20	336.30	6,730.5	5,455.5	2,598.7	-1,205.4	2,864.7	0.57	-0.48	-0.32
9,663.0	87.80	336.00	6,732.7	5,457.7	2,656.3	-1,230.8	2,927.6	0.79	-0.63	-0.48
9,726.0	87.70	334.60	6,735.2	5,460.2	2,713.5	-1,257.1	2,990.6	2.23	-0.16	-2.22
9,789.0	87.30	335.00	6,737.9	5,462.9	2,770.5	-1,283.9	3,053.5	0.90	-0.63	0.63
9,852.0	87.60	335.50	6,740.7	5,465.7	2,827.6	-1,310.3	3,116.4	0.92	0.48	0.79
9,915.0	91.20	336.10	6,741.4	5,466.4	2,885.1	-1,336.1	3,179.4	5.79	5.71	0.95
9,978.0	91.10	336.10	6,740.1	5,465.1	2,942.6	-1,361.6	3,242.4	0.16	-0.16	0.00
10,040.0	91.30	335.10	6,738.8	5,463.8	2,999.1	-1,387.2	3,304.4	1.64	0.32	-1.61
10,103.0	90.80	335.00	6,737.6	5,462.6	3,056.2	-1,413.8	3,367.4	0.81	-0.79	-0.16
10,166.0	89.10	334.40	6,737.7	5,462.7	3,113.2	-1,440.7	3,430.4	2.86	-2.70	-0.95
10,229.0	88.40	334.40	6,739.1	5,464.1	3,170.0	-1,467.9	3,493.3	1.11	-1.11	0.00
10,292.0	88.60	334.20	6,740.7	5,465.7	3,226.7	-1,495.2	3,556.3	0.45	0.32	-0.32
10,335.0	88.60	334.40	6,741.8	5,466.8	3,285.4	-1,513.9	3,599.3	0.46	0.00	0.47
10,418.0	88.30	333.60	6,744.0	5,469.0	3,340.0	-1,550.3	3,682.3	1.03	-0.36	-0.96
10,481.0	88.40	333.80	6,745.8	5,470.8	3,396.5	-1,578.2	3,745.2	0.35	0.16	0.32
10,544.0	88.20	332.10	6,747.7	5,472.7	3,452.6	-1,606.8	3,808.1	2.72	-0.32	-2.70
10,607.0	87.90	332.90	6,749.8	5,474.8	3,508.4	-1,635.9	3,871.0	1.36	-0.48	1.27
Last Survey=10649' MD/ 6753' TVD										
10,649.0	87.80	333.20	6,751.4	5,476.4	3,545.8	-1,654.9	3,913.0	0.75	-0.24	0.71
512483 TD										
10,702.9	87.80	333.20	6,753.5	5,478.5	3,593.9	-1,679.2	3,966.8	0.00	0.00	0.00
Projection to TD=10707' MD/ 6755' TVD										
10,707.0	87.80	333.20	6,753.7	5,478.7	3,597.5	-1,681.0	3,970.9	0.00	0.00	0.00

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
2,896.0	2,895.8	-11.4	17.7	Gyro Tie In=2896' MD
7,082.0	6,657.7	323.6	-133.6	LP=7082' MD/ 6658' TVD
10,649.0	6,751.4	3,545.8	-1,654.9	Last Survey=10649' MD/ 6753' TVD
10,707.0	6,753.7	3,597.5	-1,681.0	Projection to TD=10707' MD/ 6755' TVD





Phoenix Technology Services  
Survey Report



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Site Doddridge County 512483
Company:	EQT Production - Marcellus	TVD Reference:	KB @ 1275 0usft
Project:	Doddridge County, WV Grid	MD Reference:	KB @ 1275 0usft
Site:	Doddridge County 512483	North Reference:	Grid
Well:	Well #512483	Survey Calculation Method:	Minimum Curvature
Wellbore:	512483 ST01		
Design:	512483 ST01 As Drilled Surveys		

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



Project: Doddridge County, WV Grid  
Site: Doddridge County 512483  
Well: Well #512483  
Wellbore: 512483 ST01  
Design: 512483 ST01 As Drilled Surveys

