

API 47 - 017 - 06572

EQT Production - Marcellus

Doddridge County, WV Grid

Doddridge County 513342

Well #513342

513342 ST01

Design: 513342 ST01 As Drilled Surveys

Standard Survey Report

20 January, 2015

10/16/2015

Phoenix Technologies

Survey Report

17-06572

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Site Doddridge County 513342
Company:	EQT Production - Marcellus	TVD Reference:	KB@16 ft @ 1276.0usft
Project:	Doddridge County, WV Grid	MD Reference:	KB@16 ft @ 1276.0usft
Site:	Doddridge County 513342	North Reference:	Grid
Well:	Well #513342	Survey Calculation Method:	Minimum Curvature
Wellbore:	513342 ST01		
Design:	513342 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 513342

Site Position:		Northing:	290,267.60 usft	Latitude:	39.29
From:	Map	Easting:	1,645,159.80 usft	Longitude:	-80.75
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "	Grid Convergence:	-0.80 °

Well Well #513342

Well Position	+N-S	0.0 usft	Northing:	290,267.60 usft	Latitude:	39° 17' 24.570 N
	+E-W	0.0 usft	Easting:	1,645,159.80 usft	Longitude:	80° 45' 13.413 W
Position Uncertainty		0.0 usft	Wellhead Elevation:	usft	Ground Level:	1,260.0 usft

Wellbore 513342 ST01

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010_14	12/15/2014	-8.52	66.76	52,229

Design 513342 ST01 As Drilled Surveys

Audit Notes:

Version:	1.0	Phase:	ACTUAL	Tie On Depth:	3.0
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Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.0	0.0	0.0	185.31

Survey Program Date 1/20/2015

From (')	To (usft)	Survey (Wellbore)	Tool Name	Description
0.00	3,278.0	Gyrodata Gyro (513342 ST01)	GYD_DP_MS	Gyrodata gyro-compassing and drop
0.00	12,741.0	513342 PHX MWD (Curve and Lateral) (51	MWD+IGRF	MWD+IGRF v3:standard declination

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
103.0	0.10	281.88	103.0	-1,173.0	0.0	-0.1	0.0	0.10	0.10	0.00
203.0	0.28	258.32	203.0	-1,073.0	0.0	-0.4	0.1	0.19	0.18	-23.56
303.0	0.24	244.71	303.0	-973.0	-0.2	-0.8	0.2	0.07	0.15	23.51
403.0	0.17	208.15	403.0	-873.0	-0.4	-1.1	0.5	0.14	-0.07	36.56
503.0	0.17	165.32	503.0	-773.0	-0.6	-1.1	0.7	0.12	-0.00	-42.83
603.0	0.15	158.80	603.0	-673.0	-0.9	-1.0	1.0	0.03	0.02	61.52
703.0	0.16	150.91	703.0	-573.0	-1.2	-0.9	1.2	0.02	0.01	-7.89

Received
Office of Oil & Gas
JUL 14 2015

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Project:	Doddridge County, WV Grid	MD Reference:	KB@16 ft @ 1276.0usft
Site:	Doddridge County 513342	North Reference:	Grid
Well:	Well #513342	Survey Calculation Method:	Minimum Curvature
Wellbore:	513342 ST01		
Design:	513342 ST01 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)	
803.0	0.21	131.27	803.0	-473.0	-1.4	-0.7	1.5	0.08	0.05	-19.64	
903.0	0.16	132.38	903.0	-373.0	-1.6	-0.5	1.7	0.05	-0.05	1.11	
1,003.0	0.17	129.95	1,003.0	-273.0	-1.8	-0.3	1.8	0.01	0.01	-2.43	
1,103.0	0.24	124.11	1,103.0	-173.0	-2.0	0.0	2.0	0.07	0.07	-5.84	
1,203.0	0.76	126.23	1,203.0	-73.0	-2.5	0.7	2.4	0.52	0.52	2.12	
1,303.0	1.24	134.53	1,303.0	27.0	-3.7	2.0	3.5	0.50	0.48	8.30	
1,403.0	1.30	133.21	1,403.0	127.0	-5.2	3.6	4.9	0.07	0.06	-1.32	
1,503.0	0.90	149.24	1,502.9	226.9	-6.7	4.9	6.2	0.50	-0.40	16.03	
1,603.0	3.12	271.76	1,602.9	326.9	-7.3	2.5	7.0	3.68	2.22	122.52	
1,703.0	8.18	284.72	1,702.4	426.4	-5.4	-7.1	6.0	5.19	5.06	12.96	
1,803.0	9.35	281.35	1,801.2	525.2	-2.0	-21.9	4.0	1.28	1.17	-3.37	
1,903.0	7.69	254.23	1,900.1	624.1	-2.2	-36.3	5.5	4.30	-1.66	-27.12	
2,003.0	4.85	230.03	1,999.5	723.5	-6.7	-46.0	10.9	3.82	-2.84	-24.20	
2,103.0	2.20	202.21	2,099.4	823.4	-11.2	-50.0	15.8	3.08	-2.65	-27.82	
2,203.0	1.11	189.59	2,199.3	923.3	-13.9	-50.9	18.6	1.14	-1.09	-12.62	
2,303.0	1.26	193.38	2,299.3	1,023.3	-16.0	-51.3	20.6	0.17	0.15	3.79	
2,403.0	1.31	190.44	2,399.3	1,123.3	-18.2	-51.7	22.9	0.08	0.05	-2.94	
2,503.0	1.23	186.02	2,499.2	1,223.2	-20.3	-52.1	25.1	0.13	-0.08	-4.42	
2,603.0	1.21	183.64	2,599.2	1,323.2	-22.5	-52.2	27.2	0.05	-0.02	-2.38	
2,703.0	1.01	167.84	2,699.2	1,423.2	-24.4	-52.1	29.1	0.36	-0.20	-15.80	
2,803.0	0.86	167.04	2,799.2	1,523.2	-26.0	-51.8	30.7	0.15	-0.15	-0.80	
2,903.0	0.90	165.51	2,899.2	1,623.2	-27.5	-51.4	32.1	0.05	0.04	-1.53	
3,003.0	0.88	169.24	2,999.2	1,723.2	-29.0	-51.1	33.6	0.06	-0.02	3.73	
3,103.0	0.93	159.26	3,099.1	1,823.1	-30.5	-50.6	35.1	0.17	0.05	-9.98	
3,203.0	1.03	158.45	3,199.1	1,923.1	-32.1	-50.0	36.6	0.10	0.10	-0.81	
Gyro Tie In=3278' MD											
3,278.0	0.94	166.29	3,274.1	1,998.1	-33.3	-49.6	37.8	0.22	-0.12	10.45	
3,464.0	4.10	207.30	3,459.9	2,183.9	-40.7	-52.3	45.4	1.85	1.70	22.05	
3,496.0	7.30	212.40	3,491.8	2,215.8	-43.4	-53.9	48.2	10.11	10.00	15.94	
3,527.0	9.80	213.10	3,522.4	2,246.4	-47.3	-56.4	52.3	8.07	8.06	2.26	
3,559.0	12.10	214.60	3,553.8	2,277.8	-52.4	-59.8	57.7	7.24	7.19	4.69	
3,590.0	14.40	217.80	3,584.0	2,308.0	-58.1	-64.0	63.8	7.78	7.42	10.32	
3,622.0	16.70	220.10	3,614.8	2,338.8	-64.7	-69.4	70.9	7.44	7.19	7.19	
3,653.0	18.90	219.70	3,644.3	2,368.3	-72.0	-75.5	78.7	7.11	7.10	-1.29	
3,685.0	21.50	219.00	3,674.4	2,398.4	-80.6	-82.5	87.8	8.16	8.13	-2.19	
3,716.0	24.00	218.20	3,703.0	2,427.0	-89.9	-90.0	97.9	8.13	8.06	-2.58	
3,747.0	26.50	218.00	3,731.0	2,455.0	-100.3	-98.1	109.0	8.07	8.06	-0.65	
3,779.0	28.80	216.70	3,759.3	2,483.3	-112.1	-107.1	121.6	7.43	7.19	-4.06	
3,810.0	31.40	216.00	3,786.2	2,510.2	-124.7	-116.3	134.9	8.46	8.39	-2.26	
3,842.0	34.30	215.40	3,813.0	2,537.0	-138.8	-126.5	149.9	9.12	9.06	-1.88	
3,905.0	40.50	216.50	3,863.1	2,587.1	-169.7	-148.9	182.8	9.90	9.84	1.75	
3,968.0	40.90	216.10	3,910.8	2,634.8	-202.8	-173.3	218.0	0.76	0.63	-0.63	
4,031.0	40.70	215.60	3,958.5	2,682.5	-236.2	-197.4	253.4	0.61	-0.32	-0.79	

Phoenix Technologies

Survey Report

17-06572

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Site:	Doddridge County 513342	North Reference:	Grid
Well:	Well #513342	Survey Calculation Method:	Minimum Curvature
Wellbore:	513342 ST01		
Design:	513342 ST01 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)
4,094.0	40.70	215.80	4,006.3	2,730.3	-269.5	-221.3	288.9	0.21	0.00	0.32
4,156.0	40.70	215.40	4,053.3	2,777.3	-302.4	-244.9	323.8	0.42	0.00	-0.65
4,220.0	40.50	215.30	4,101.9	2,825.9	-336.4	-269.0	359.8	0.33	-0.31	-0.16
4,283.0	41.40	214.80	4,149.5	2,873.5	-370.2	-292.7	395.7	1.52	1.43	-0.79
4,345.0	42.10	215.00	4,195.7	2,919.7	-404.1	-316.3	431.6	1.15	1.13	0.32
4,408.0	42.20	214.60	4,242.4	2,966.4	-438.8	-340.4	468.4	0.45	0.16	-0.63
4,440.0	42.10	215.30	4,266.1	2,990.1	-456.4	-352.7	487.1	1.50	-0.31	2.19
4,472.0	41.70	219.40	4,290.0	3,014.0	-473.4	-365.7	505.2	8.65	-1.25	12.81
4,535.0	41.10	224.50	4,337.2	3,061.2	-504.3	-393.5	538.6	5.44	-0.95	8.10
4,598.0	40.70	224.70	4,384.9	3,108.9	-533.7	-422.5	570.5	0.67	-0.63	0.32
4,662.0	40.10	224.00	4,433.6	3,157.6	-563.4	-451.5	602.7	1.18	-0.94	-1.09
4,725.0	40.30	222.40	4,481.7	3,205.7	-593.0	-479.3	634.8	1.67	0.32	-2.54
4,787.0	40.30	222.60	4,529.0	3,253.0	-622.6	-506.4	666.7	0.21	0.00	0.32
4,850.0	41.40	224.10	4,576.7	3,300.7	-652.5	-534.7	699.2	2.34	1.75	2.38
4,913.0	41.80	225.30	4,623.8	3,347.8	-682.2	-564.1	731.5	1.42	0.63	1.90
4,976.0	41.50	223.80	4,670.8	3,394.8	-712.1	-593.5	763.9	1.65	-0.48	-2.38
5,039.0	41.20	224.20	4,718.1	3,442.1	-742.0	-622.4	796.4	0.63	-0.48	0.63
5,102.0	40.60	222.30	4,765.8	3,489.8	-772.1	-650.7	829.0	2.19	-0.95	-3.02
5,165.0	41.40	223.50	4,813.3	3,537.3	-802.3	-678.8	861.7	1.78	1.27	1.90
5,228.0	41.30	223.20	4,860.6	3,584.6	-832.6	-707.4	894.5	0.35	-0.16	-0.48
5,291.0	41.10	222.50	4,908.0	3,632.0	-863.0	-735.6	927.4	0.80	-0.32	-1.11
5,354.0	42.50	223.60	4,955.0	3,679.0	-893.7	-764.3	960.6	2.51	2.22	1.75
5,417.0	42.50	223.50	5,001.4	3,725.4	-924.5	-793.6	994.0	0.11	0.00	-0.16
5,480.0	42.50	223.20	5,047.9	3,771.9	-955.5	-822.8	1,027.5	0.32	0.00	-0.48
5,543.0	41.00	224.40	5,094.9	3,818.9	-985.8	-851.8	1,060.4	2.70	-2.38	1.90
5,606.0	40.50	224.80	5,142.6	3,866.6	-1,015.1	-880.7	1,092.2	0.90	-0.79	0.63
5,669.0	40.30	224.30	5,190.6	3,914.6	-1,044.2	-909.3	1,123.8	0.60	-0.32	-0.79
5,732.0	40.40	224.60	5,238.6	3,962.6	-1,073.3	-937.9	1,155.5	0.35	0.16	0.48
5,795.0	41.10	225.50	5,286.3	4,010.3	-1,102.3	-967.0	1,187.1	1.45	1.11	1.43
5,858.0	41.90	226.70	5,333.5	4,057.5	-1,131.3	-997.1	1,218.7	1.79	1.27	1.90
5,920.0	42.00	226.90	5,379.6	4,103.6	-1,159.6	-1,027.3	1,249.7	0.27	0.16	0.32
5,983.0	41.30	226.40	5,426.7	4,150.7	-1,188.4	-1,057.8	1,281.2	1.23	-1.11	-0.79
6,046.0	41.50	226.70	5,473.9	4,197.9	-1,217.0	-1,088.0	1,312.5	0.45	0.32	0.48
6,109.0	41.80	227.00	5,521.0	4,245.0	-1,245.7	-1,118.5	1,343.8	0.57	0.48	0.48
6,171.0	40.50	224.80	5,567.7	4,291.7	-1,274.0	-1,147.8	1,374.8	3.14	-2.10	-3.55
6,234.0	40.20	223.30	5,615.7	4,339.7	-1,303.4	-1,176.2	1,406.6	1.61	-0.48	-2.38
6,297.0	40.50	223.90	5,663.7	4,387.7	-1,332.9	-1,204.3	1,438.6	0.78	0.48	0.95
6,360.0	40.70	223.30	5,711.6	4,435.6	-1,362.6	-1,232.6	1,470.8	0.70	0.32	-0.95
6,423.0	40.70	223.20	5,759.3	4,483.3	-1,392.5	-1,260.8	1,503.2	0.10	0.00	-0.16
6,486.0	40.70	223.10	5,807.1	4,531.1	-1,422.5	-1,288.9	1,535.6	0.10	0.00	-0.16
6,549.0	41.10	222.80	5,854.7	4,578.7	-1,452.7	-1,317.0	1,568.3	0.71	0.63	-0.48
6,612.0	41.20	224.70	5,902.1	4,626.1	-1,482.6	-1,345.6	1,600.8	1.99	0.16	3.02

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Survey Report

17-065 72

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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)
6,675.0	41.10	225.00	5,949.6	4,673.6	-1,512.0	-1,374.9	1,632.7	0.35	-0.16	0.48
6,737.0	41.20	225.50	5,996.3	4,720.3	-1,540.7	-1,403.8	1,664.0	0.55	0.16	0.81
6,801.0	41.30	225.00	6,044.4	4,768.4	-1,570.4	-1,433.8	1,696.4	0.54	0.16	-0.78
6,825.0	41.40	224.50	6,062.4	4,786.4	-1,581.7	-1,445.0	1,708.6	1.44	0.42	-2.08
6,887.0	41.50	224.70	6,108.9	4,832.9	-1,610.9	-1,473.8	1,740.4	0.27	0.16	0.32
6,951.0	41.10	223.30	6,157.0	4,881.0	-1,641.3	-1,503.1	1,773.4	1.57	-0.63	-2.19
7,013.0	40.90	223.20	6,203.7	4,927.7	-1,670.9	-1,531.0	1,805.4	0.34	-0.32	-0.16
7,076.0	40.80	221.90	6,251.4	4,975.4	-1,701.3	-1,558.9	1,838.2	1.36	-0.16	-2.06
7,139.0	40.90	222.70	6,299.1	5,023.1	-1,731.8	-1,586.6	1,871.1	0.85	0.16	1.27
7,202.0	40.80	223.70	6,346.7	5,070.7	-1,761.8	-1,614.8	1,903.7	1.05	-0.16	1.59
7,265.0	40.60	224.60	6,394.5	5,118.5	-1,791.3	-1,643.4	1,935.7	0.98	-0.32	1.43
7,328.0	40.40	224.20	6,442.4	5,166.4	-1,820.5	-1,672.0	1,967.4	0.52	-0.32	-0.63
7,390.0	40.40	223.50	6,489.6	5,213.6	-1,849.5	-1,699.9	1,998.8	0.73	0.00	-1.13
7,422.0	40.30	223.10	6,514.0	5,238.0	-1,864.6	-1,714.1	2,015.2	0.87	-0.31	-1.25
7,453.0	41.80	219.40	6,537.4	5,261.4	-1,879.9	-1,727.5	2,031.7	9.21	4.84	-11.94
7,484.0	42.90	215.40	6,560.3	5,284.3	-1,896.5	-1,740.2	2,049.3	9.39	3.55	-12.90
7,516.0	43.90	211.50	6,583.5	5,307.5	-1,914.8	-1,752.3	2,068.7	8.94	3.13	-12.19
7,547.0	44.70	208.00	6,605.7	5,329.7	-1,933.6	-1,763.0	2,088.4	8.30	2.58	-11.29
7,578.0	45.90	205.10	6,627.5	5,351.5	-1,953.3	-1,772.9	2,109.0	7.69	3.87	-9.35
7,610.0	47.60	203.70	6,649.5	5,373.5	-1,974.5	-1,782.5	2,131.0	6.19	5.31	-4.38
7,641.0	49.60	200.60	6,670.0	5,394.0	-1,996.1	-1,791.2	2,153.3	9.89	6.45	-10.00
7,672.0	51.70	198.40	6,689.6	5,413.6	-2,018.7	-1,799.2	2,176.5	8.72	6.77	-7.10
7,704.0	53.70	194.10	6,709.0	5,433.0	-2,043.1	-1,806.3	2,201.5	12.38	6.25	-13.44
7,735.0	55.50	191.90	6,727.0	5,451.0	-2,067.7	-1,812.0	2,226.5	8.20	5.81	-7.10
7,767.0	56.80	190.10	6,744.8	5,468.8	-2,093.8	-1,817.1	2,253.0	6.19	4.06	-5.63
7,798.0	58.20	187.10	6,761.5	5,485.5	-2,119.6	-1,821.0	2,279.1	9.33	4.52	-9.68
7,829.0	59.70	185.60	6,777.4	5,501.4	-2,146.0	-1,823.9	2,305.6	6.37	4.84	-4.84
7,861.0	62.70	184.20	6,792.9	5,516.9	-2,174.0	-1,826.3	2,333.6	10.13	9.38	-4.38
7,892.0	63.60	181.40	6,806.9	5,530.9	-2,201.6	-1,827.7	2,361.3	8.57	2.90	-9.03
7,924.0	63.70	180.10	6,821.1	5,545.1	-2,230.3	-1,828.0	2,389.9	3.65	0.31	-4.06
7,956.0	65.30	176.90	6,834.8	5,558.8	-2,259.1	-1,827.3	2,418.5	10.32	5.00	-10.00
8,019.0	71.30	174.80	6,858.1	5,582.1	-2,317.5	-1,823.0	2,476.2	10.01	9.52	-3.33
8,082.0	78.40	173.00	6,874.6	5,598.6	-2,377.9	-1,816.5	2,535.8	11.60	11.27	-2.86
Top of Marcellus @6883' TVD										
8,138.2	84.38	170.05	6,883.0	5,607.0	-2,432.9	-1,808.3	2,589.8	11.83	10.63	-5.25
LP= 8145' MD/6883' TVD										
8,145.0	85.10	169.70	6,883.6	5,607.6	-2,439.5	-1,807.2	2,596.3	11.83	10.65	-5.17
Deepest Point of Well= 8208' MD/6886' TVD										
8,208.0	90.40	167.40	6,886.1	5,610.1	-2,501.2	-1,794.7	2,656.5	9.17	8.41	-3.65
8,271.0	92.70	168.00	6,884.4	5,608.4	-2,562.7	-1,781.3	2,716.5	3.77	3.65	0.95
8,334.0	94.50	166.60	6,880.4	5,604.4	-2,624.0	-1,767.4	2,776.3	3.62	2.86	-2.22
8,397.0	93.80	165.70	6,875.9	5,599.9	-2,685.0	-1,752.4	2,835.7	1.81	-1.11	-1.43
8,460.0	93.20	163.90	6,872.0	5,596.0	-2,745.7	-1,735.9	2,894.6	3.01	-0.95	-2.86

Phoenix Technologies

Survey Report

17-06572

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Site Doddridge County 513342
Company:	EQT Production - Marcellus	TVD Reference:	KB@16 ft @ 1276.0usft
Project:	Doddridge County, WV Grid	MD Reference:	KB@16 ft @ 1276.0usft
Site:	Doddridge County 513342	North Reference:	Grid
Well:	Well #513342	Survey Calculation Method:	Minimum Curvature
Wellbore:	513342 ST01		
Design:	513342 ST01 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)	
8,523.0	93.10	164.80	6,868.6	5,592.6	-2,806.3	-1,718.9	2,953.3	1.44	-0.16	1.43	
8,586.0	93.00	165.30	6,865.2	5,589.2	-2,867.1	-1,702.7	3,012.3	0.81	-0.16	0.79	
8,649.0	92.00	165.00	6,862.5	5,586.5	-2,927.9	-1,686.6	3,071.4	1.66	-1.59	-0.48	
8,712.0	90.90	164.40	6,860.9	5,584.9	-2,988.7	-1,670.0	3,130.4	1.99	-1.75	-0.95	
8,775.0	90.10	165.20	6,860.3	5,584.3	-3,049.4	-1,653.4	3,189.4	1.80	-1.27	1.27	
8,838.0	90.40	165.20	6,860.0	5,584.0	-3,110.4	-1,637.3	3,248.5	0.48	0.48	0.00	
8,901.0	90.50	164.50	6,859.6	5,583.6	-3,171.2	-1,620.9	3,307.5	1.12	0.16	-1.11	
8,963.0	90.50	163.40	6,859.0	5,583.0	-3,230.7	-1,603.7	3,365.3	1.77	0.00	-1.77	
9,026.0	90.80	162.80	6,858.3	5,582.3	-3,291.0	-1,585.4	3,423.6	1.06	0.48	-0.95	
9,089.0	91.60	163.80	6,857.0	5,581.0	-3,351.3	-1,567.3	3,482.0	2.03	1.27	1.59	
9,152.0	92.30	164.60	6,854.8	5,578.8	-3,411.9	-1,550.2	3,540.7	1.69	1.11	1.27	
9,215.0	91.30	164.50	6,852.9	5,576.9	-3,472.6	-1,533.4	3,599.6	1.60	-1.59	-0.16	
9,278.0	90.60	164.20	6,851.8	5,575.8	-3,533.3	-1,516.4	3,658.4	1.21	-1.11	-0.48	
9,341.0	90.60	164.20	6,851.1	5,575.1	-3,593.9	-1,499.3	3,717.2	0.00	0.00	0.00	
9,404.0	90.80	164.00	6,850.4	5,574.4	-3,654.5	-1,482.0	3,775.9	0.45	0.32	-0.32	
9,466.0	90.80	162.30	6,849.5	5,573.5	-3,713.8	-1,464.0	3,833.3	2.74	0.00	-2.74	
9,528.0	90.90	164.30	6,848.6	5,572.6	-3,773.2	-1,446.2	3,890.8	3.23	0.16	3.23	
9,591.0	91.10	165.80	6,847.5	5,571.5	-3,834.0	-1,430.0	3,949.9	2.40	0.32	2.38	
9,653.0	91.70	165.90	6,846.0	5,570.0	-3,894.1	-1,414.8	4,008.4	0.98	0.97	0.16	
9,716.0	91.60	166.00	6,844.2	5,568.2	-3,955.2	-1,399.5	4,067.8	0.22	-0.16	0.16	
9,779.0	91.30	166.60	6,842.6	5,566.6	-4,016.4	-1,384.6	4,127.3	1.06	-0.48	0.95	
9,842.0	91.30	167.60	6,841.1	5,565.1	-4,077.8	-1,370.6	4,187.1	1.59	0.00	1.59	
9,905.0	89.80	166.50	6,840.5	5,564.5	-4,139.2	-1,356.4	4,247.0	2.95	-2.38	-1.75	
9,968.0	89.00	166.00	6,841.2	5,565.2	-4,200.4	-1,341.5	4,306.5	1.50	-1.27	-0.79	
10,031.0	89.10	165.90	6,842.2	5,566.2	-4,261.5	-1,326.2	4,365.9	0.22	0.16	-0.16	
10,094.0	89.80	166.90	6,842.8	5,566.8	-4,322.7	-1,311.4	4,425.5	1.94	1.11	1.59	
10,156.0	89.50	165.40	6,843.2	5,567.2	-4,382.9	-1,296.5	4,484.1	2.47	-0.48	-2.42	
10,219.0	89.60	166.10	6,843.7	5,567.7	-4,444.0	-1,281.0	4,543.5	1.12	0.16	1.11	
10,282.0	89.80	164.80	6,844.1	5,568.1	-4,505.0	-1,265.2	4,602.7	2.09	0.32	-2.06	
10,345.0	89.80	164.60	6,844.3	5,568.3	-4,565.7	-1,248.6	4,661.7	0.32	0.00	-0.32	
10,408.0	89.70	163.90	6,844.5	5,568.5	-4,626.4	-1,231.5	4,720.5	1.12	-0.16	-1.11	
10,471.0	89.40	163.50	6,845.0	5,569.0	-4,686.8	-1,213.8	4,779.0	0.79	-0.48	-0.63	
10,534.0	89.60	164.70	6,845.6	5,569.6	-4,747.4	-1,196.5	4,837.8	1.93	0.32	1.90	
10,597.0	90.60	164.80	6,845.5	5,569.5	-4,808.2	-1,180.0	4,896.8	1.60	1.59	0.16	
10,660.0	90.90	164.50	6,844.7	5,568.7	-4,868.9	-1,163.3	4,955.7	0.67	0.48	-0.48	
10,723.0	91.90	168.10	6,843.1	5,567.1	-4,930.1	-1,148.4	5,015.2	5.93	1.59	5.71	
10,786.0	92.20	169.50	6,840.9	5,564.9	-4,991.9	-1,136.1	5,075.6	2.27	0.48	2.22	
10,849.0	91.00	169.20	6,839.1	5,563.1	-5,053.8	-1,124.5	5,136.1	1.96	-1.90	-0.48	
10,912.0	90.20	167.50	6,838.4	5,562.4	-5,115.5	-1,111.8	5,196.4	2.98	-1.27	-2.70	
10,975.0	90.70	169.20	6,837.9	5,561.9	-5,177.2	-1,099.1	5,256.7	2.81	0.79	2.70	
11,038.0	91.20	170.10	6,836.9	5,560.9	-5,239.1	-1,087.7	5,317.3	1.63	0.79	1.43	
11,101.0	90.60	167.70	6,835.9	5,559.9	-5,300.9	-1,075.6	5,377.7	3.93	-0.95	-3.81	
11,163.0	89.80	166.20	6,835.7	5,559.7	-5,361.3	-1,061.6	5,436.6	2.74	-1.29	-2.42	

Phoenix Technologies

Survey Report

17-06572

Database: EDM 5000.1 Single User Db Company: EQT Production - Marcellus Project: Doddridge County, WV Grid Site: Doddridge County 513342 Well: Well #513342 Wellbore: 513342 ST01 Design: 513342 ST01 As Drilled Surveys	Local Co-ordinate Reference: Site Doddridge County 513342 TVD Reference: KB@16 ft @ 1276.0usft MD Reference: KB@16 ft @ 1276.0usft North Reference: Grid Survey Calculation Method: Minimum Curvature
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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)
11,227.0	89.50	163.40	6,836.1	5,560.1	-5,423.1	-1,044.8	5,496.5	4.40	-0.47	-4.38
11,289.0	89.80	163.80	6,836.5	5,560.5	-5,482.6	-1,027.3	5,554.1	0.81	0.48	0.65
11,352.0	91.30	166.10	6,835.9	5,559.9	-5,543.4	-1,011.0	5,613.2	4.36	2.38	3.65
11,415.0	91.20	165.40	6,834.5	5,558.5	-5,604.4	-995.5	5,672.5	1.12	-0.16	-1.11
11,478.0	91.70	166.30	6,832.9	5,556.9	-5,665.5	-980.1	5,731.9	1.63	0.79	1.43
11,541.0	90.50	163.80	6,831.7	5,555.7	-5,726.4	-963.8	5,791.0	4.40	-1.90	-3.97
11,604.0	89.80	162.70	6,831.5	5,555.5	-5,786.7	-945.7	5,849.4	2.07	-1.11	-1.75
11,667.0	90.10	164.50	6,831.6	5,555.6	-5,847.1	-927.9	5,907.9	2.90	0.48	2.86
11,730.0	90.50	166.10	6,831.2	5,555.2	-5,908.1	-911.9	5,967.1	2.62	0.63	2.54
11,793.0	90.90	166.50	6,830.5	5,554.5	-5,969.3	-897.0	6,026.6	0.90	0.63	0.63
11,856.0	90.70	166.30	6,829.6	5,553.6	-6,030.5	-882.2	6,086.2	0.45	-0.32	-0.32
11,919.0	90.20	164.00	6,829.1	5,553.1	-6,091.4	-866.0	6,145.4	3.74	-0.79	-3.65
11,983.0	90.90	165.40	6,828.5	5,552.5	-6,153.1	-849.1	6,205.3	2.45	1.09	2.19
12,044.0	91.40	165.10	6,827.3	5,551.3	-6,212.1	-833.6	6,262.6	0.96	0.82	-0.49
12,107.0	91.40	164.50	6,825.7	5,549.7	-6,272.9	-817.1	6,321.6	0.95	0.00	-0.95
12,170.0	91.90	164.90	6,823.9	5,547.9	-6,333.6	-800.5	6,380.5	1.02	0.79	0.63
12,233.0	91.90	164.10	6,821.8	5,545.8	-6,394.3	-783.6	6,439.4	1.27	0.00	-1.27
12,296.0	91.10	164.90	6,820.2	5,544.2	-6,455.0	-766.8	6,498.2	1.80	-1.27	1.27
12,360.0	90.40	163.80	6,819.3	5,543.3	-6,516.6	-749.6	6,558.0	2.04	-1.09	-1.72
12,422.0	90.30	163.30	6,819.0	5,543.0	-6,576.0	-732.0	6,615.6	0.82	-0.16	-0.81
12,485.0	90.50	163.20	6,818.5	5,542.5	-6,636.4	-713.8	6,674.0	0.35	0.32	-0.16
12,548.0	91.40	164.50	6,817.5	5,541.5	-6,696.9	-696.3	6,732.6	2.51	1.43	2.06
12,611.0	90.80	163.20	6,816.3	5,540.3	-6,757.4	-678.8	6,791.2	2.27	-0.95	-2.06
Final Survey= 12673' MD/6816' TVD										
12,673.0	90.50	162.90	6,815.6	5,539.6	-6,816.7	-660.7	6,848.6	0.68	-0.48	-0.48
Projection to TD= 12741' MD/6815' TVD										
12,741.0	90.50	162.90	6,815.0	5,539.0	-6,881.7	-640.7	6,911.4	0.00	0.00	0.00

Formations					
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
8,138.2	6,883.0	Top of Marcellus @6883' TVD		0.00	

Phoenix Technologies

Survey Report

17-06572

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Site Doddridge County 513342
Company:	EQT Production - Marcellus	TVD Reference:	KB@16 ft @ 1276.0usft
Project:	Doddridge County, WV Grid	MD Reference:	KB@16 ft @ 1276.0usft
Site:	Doddridge County 513342	North Reference:	Grid
Well:	Well #513342	Survey Calculation Method:	Minimum Curvature
Wellbore:	513342 ST01		
Design:	513342 ST01 As Drilled Surveys		

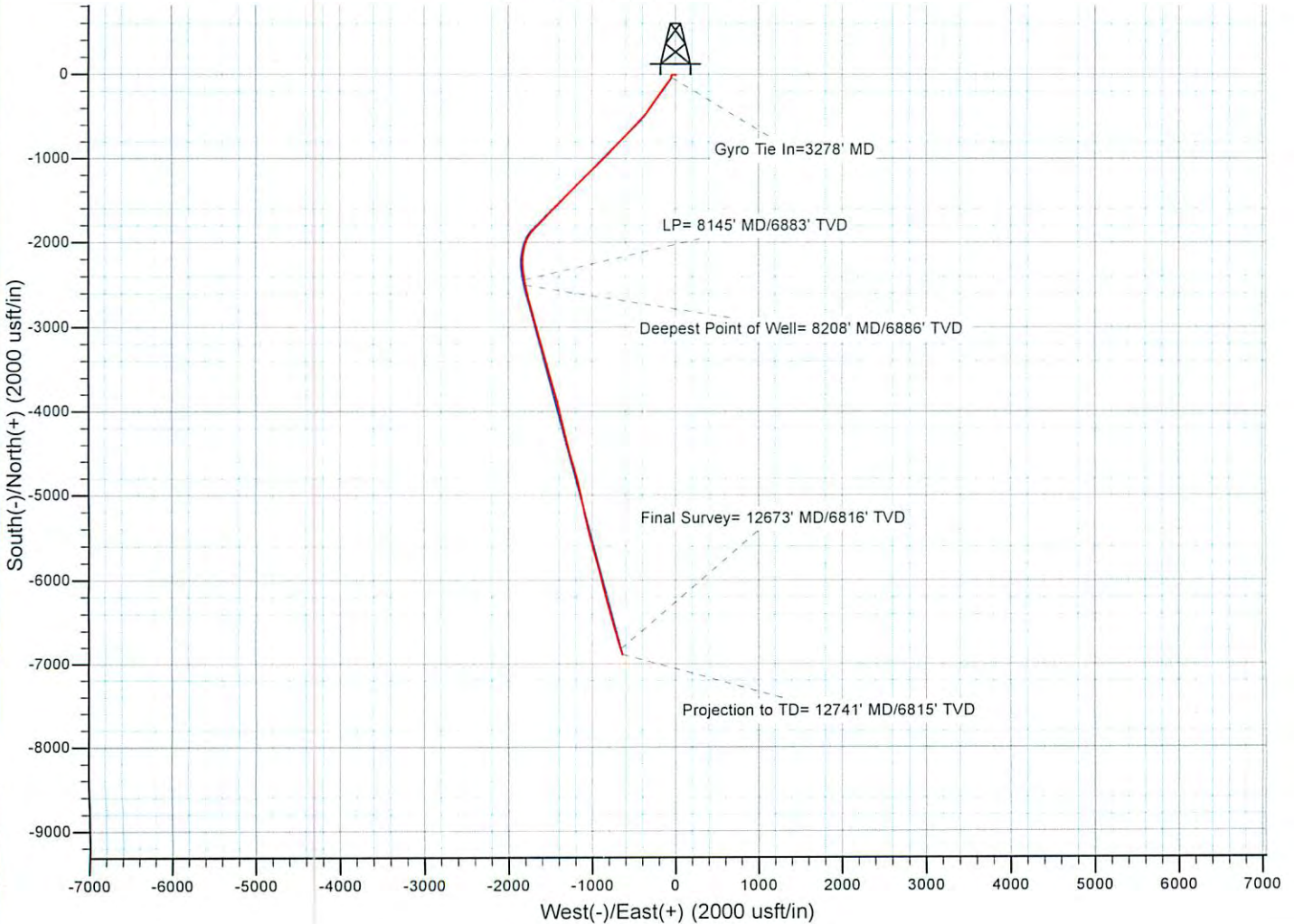
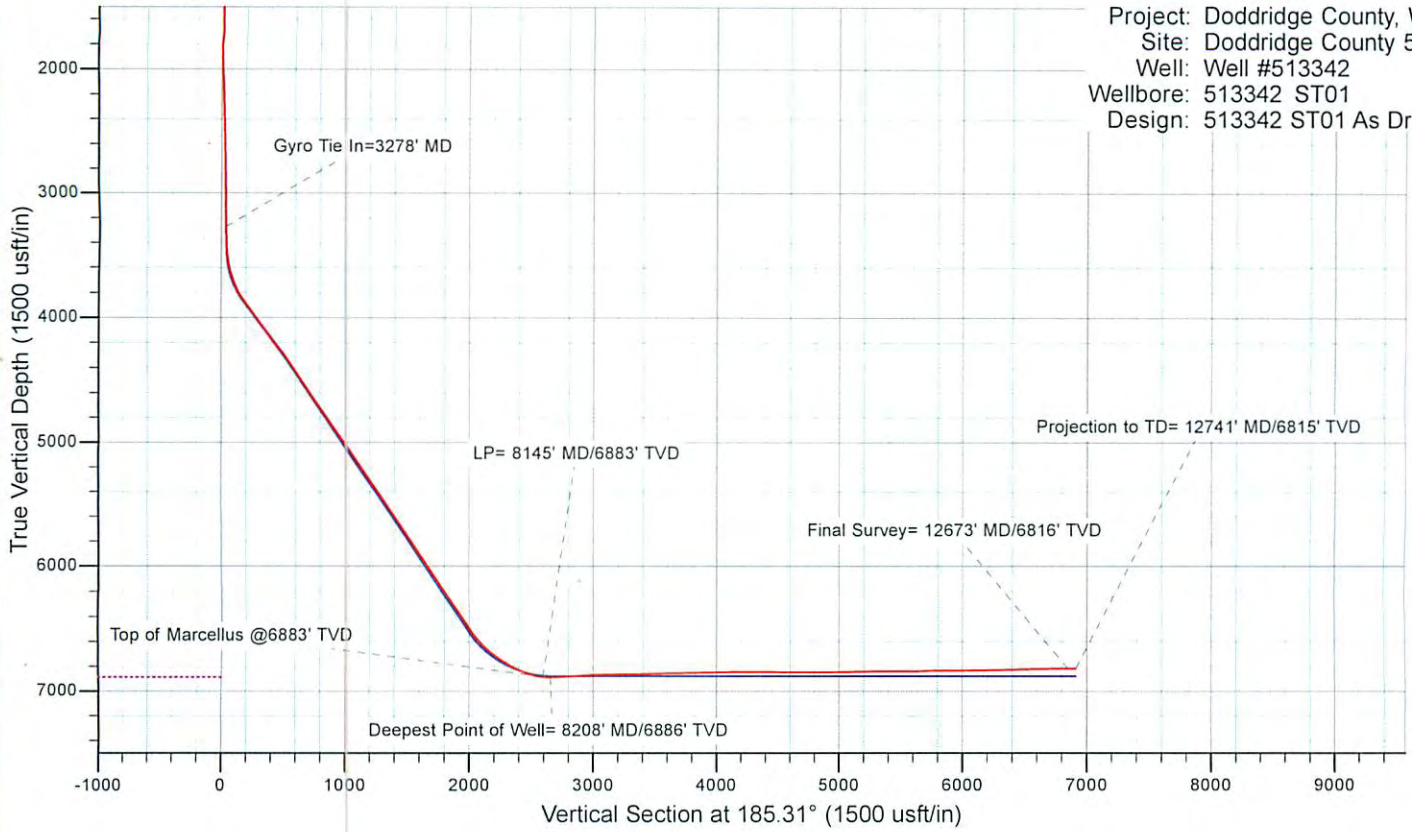
Design Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
3,278.0	3,274.1	-33.3	-49.6	Gyro Tie In=3278' MD
8,145.0	6,883.6	-2,439.5	-1,807.2	LP= 8145' MD/6883' TVD
8,208.0	6,886.1	-2,501.2	-1,794.7	Deepest Point of Well= 8208' MD/6886' TVD
12,673.0	6,815.6	-6,816.7	-660.7	Final Survey= 12673' MD/6816' TVD
12,741.0	6,815.0	-6,881.7	-640.7	Projection to TD= 12741' MD/6815' TVD

Checked By: _____ Approved By: _____ Date: _____

17-06572

EQT Production - Marcellus

Project: Doddridge County, WV Grid
Site: Doddridge County 513342
Well: Well #513342
Wellbore: 513342 ST01
Design: 513342 ST01 As Drilled Surveys



10/16/2015