



Where energy meets innovation.

EQT PRODUCTION

Tyler County, WV

WEU4

Well #512891 -Marcellus - Slot 512891

512891 ST01

API#: 47-095-02279

Design: 512891 ST01 As Drilled Surveys

Standard Survey Report

18 March, 2016

Received
Office of Oil & Gas

JUL 20 2016

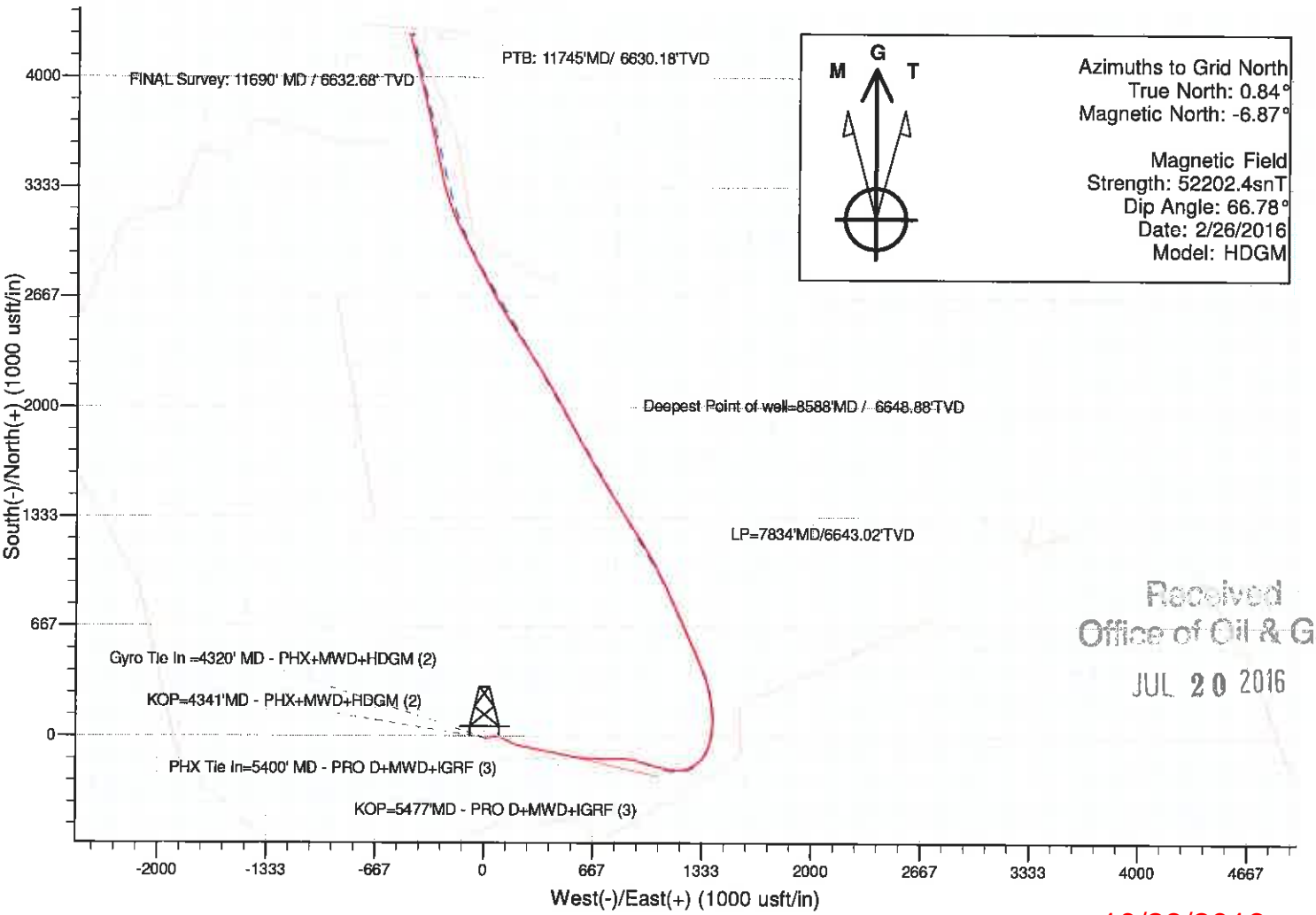
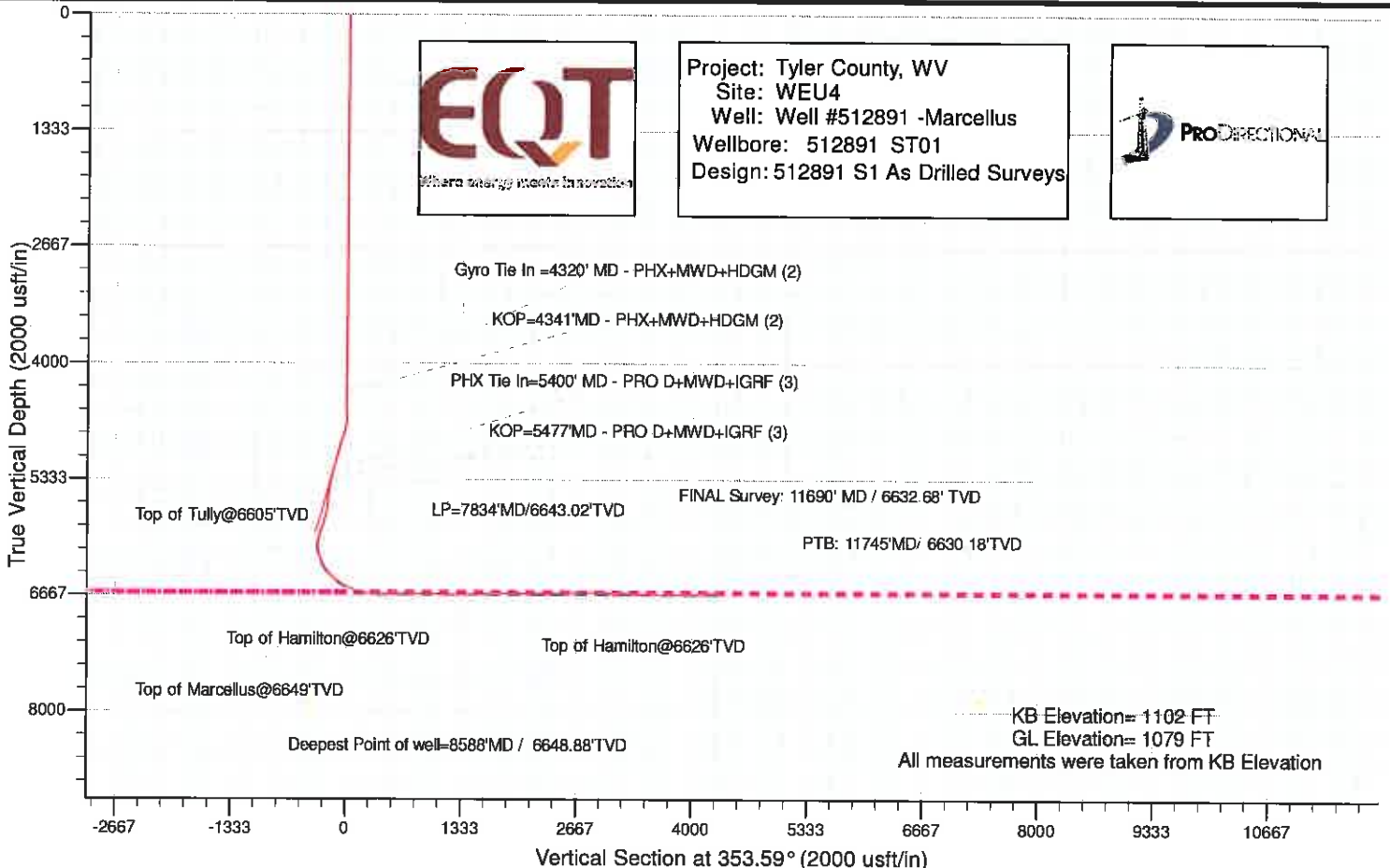


PRODIRECTIONAL

10/28/2016



Project: Tyler County, WV
 Site: WEU4
 Well: Well #512891 -Marcellus
 Wellbore: 512891 ST01
 Design: 512891 S1 As Drilled Surveys



Received
 Office of Oil & Gas
 JUL 20 2016

10/28/2016



Professional Directional
Survey Report



Company:	EQT PRODUCTION	Local Co-ordinate Reference:	Well Well #512891 -Marcellus - Slot 512891
Project:	Tyler County, WV	TVD Reference:	KB@23 @ 1102 00usft
Site:	WEU4	MD Reference:	KB@23 @ 1102 00usft
Well:	Well #512891 -Marcellus	North Reference:	Grid
Wellbore:	512891 ST01	Survey Calculation Method:	Minimum Curvature
Design:	512891 ST01 As Drilled Surveys	Database:	Well_Planner1

Project:	Tyler 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:	WEU4				
Site Position:		Northing:	318,364.31 usft	Latitude:	39° 21' 59.62 N
From:	Map	Easting:	1,626,574.86 usft	Longitude:	80° 49' 15.03 W
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	-0.84 °

Well:	Well #512891 -Marcellus - Slot 512891					
Well Position	+N/-S	0.00 usft	Northing:	318,350.31 usft	Latitude:	39° 21' 59.48 N
	+E/-W	0.00 usft	Easting:	1,626,580.26 usft	Longitude:	80° 49' 14.95 W
Position Uncertainty		0.00 usft	Wellhead Elevation:	0.00 usft	Ground Level:	1,079.00 usft

Wellbore:	512891 ST01				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	2/26/2016	-7.72	66.78	52,202

Design:	512891 ST01 As Drilled Surveys				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	5,400.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)	
	0.00	0.00	0.00		353.59

Survey Program	Date	3/18/2016			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
110.00	4,320.00	512891 VES Gyro (Main Wellbore)	VES Spec AVG 04-09-15	Triaxial Continuous Gyro Model	
4,341.00	5,400.00	512891 PHX MWD (Main Wellbore)	PHX+MWD+HDGM	PHX+OWSG MWD + HDGM	
5,477.00	11,745.00	512891 Pro D MWD (512891 ST01)	MWD+IGRF	MWD+IGRF v3:standard declination	

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Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
110.00	0.29	49.06	110.00	0.18	0.21	0.16	0.26	0.26	0.00
210.00	0.22	41.43	210.00	0.49	0.53	0.43	0.08	-0.07	-7.63
310.00	0.21	110.54	310.00	0.57	0.83	0.48	0.24	-0.01	69.11
410.00	0.31	126.54	410.00	0.35	1.22	0.21	0.12	0.10	16.00
510.00	0.24	123.83	510.00	0.07	1.61	-0.11	0.07	-0.07	-2.71
610.00	0.32	135.20	609.99	-0.25	1.98	-0.47	0.10	0.08	11.37
710.00	0.51	134.06	709.99	-0.75	2.49	-1.03	0.19	0.19	-1.14
810.00	0.59	128.27	809.99	-1.38	3.22	-1.73	0.10	0.08	-5.79



Professional Directional Survey Report



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Project:	Tyler County, WV	TVD Reference:	KB@23 @ 1102 00usft
Site:	WEU4	MD Reference:	KB@23 @ 1102 00usft
Well:	Well #512891 -Marcellus	North Reference:	Grid
Wellbore:	512891 ST01	Survey Calculation Method:	Minimum Curvature
Design:	512891 ST01 As Drilled Surveys	Database:	Well_Planner1

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N-S (usft)	+E-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
910.00	0.53	117.61	909.98	-1.92	4.03	-2.35	0.12	-0.06	-10.66	
1,010.00	0.25	116.18	1,009.98	-2.23	4.64	-2.73	0.28	-0.28	-1.43	
1,110.00	0.24	109.00	1,109.98	-2.39	5.03	-2.94	0.03	-0.01	-7.18	
1,210.00	0.12	37.99	1,209.98	-2.38	5.29	-2.95	0.23	-0.12	-71.01	
1,310.00	0.09	27.02	1,309.98	-2.22	5.39	-2.81	0.04	-0.03	-10.97	
1,410.00	0.06	36.43	1,409.98	-2.11	5.46	-2.71	0.03	-0.03	9.41	
1,510.00	0.06	127.76	1,509.98	-2.10	5.53	-2.71	0.09	0.00	91.33	
1,610.00	0.12	109.61	1,609.98	-2.17	5.67	-2.79	0.07	0.06	-18.15	
1,710.00	0.16	96.83	1,709.98	-2.22	5.91	-2.87	0.05	0.04	-12.78	
1,810.00	0.19	85.37	1,809.98	-2.22	6.22	-2.90	0.05	0.03	-11.46	
1,910.00	0.22	68.20	1,909.98	-2.14	6.56	-2.86	0.07	0.03	-17.17	
2,010.00	0.13	97.85	2,009.98	-2.08	6.85	-2.84	0.12	-0.09	29.65	
2,110.00	0.15	102.40	2,109.98	-2.13	7.09	-2.91	0.02	0.02	4.55	
2,210.00	0.09	133.58	2,209.98	-2.21	7.27	-3.01	0.09	-0.06	31.18	
2,310.00	0.15	151.12	2,309.98	-2.38	7.39	-3.19	0.07	0.06	17.54	
2,410.00	0.21	163.94	2,409.98	-2.67	7.51	-3.49	0.07	0.06	12.82	
2,510.00	0.18	170.17	2,509.97	-3.00	7.59	-3.83	0.04	-0.03	6.23	
2,610.00	0.18	170.05	2,609.97	-3.31	7.64	-4.14	0.00	0.00	-0.12	
2,710.00	0.16	187.77	2,709.97	-3.60	7.65	-4.43	0.06	-0.02	17.72	
2,810.00	0.19	226.19	2,809.97	-3.85	7.51	-4.67	0.12	0.03	38.42	
2,910.00	0.39	249.42	2,909.97	-4.09	7.07	-4.85	0.23	0.20	23.23	
3,010.00	0.43	246.31	3,009.97	-4.36	6.41	-5.05	0.05	0.04	-3.11	
3,110.00	0.31	241.11	3,109.97	-4.64	5.83	-5.26	0.12	-0.12	-5.20	
3,210.00	0.20	206.05	3,209.97	-4.93	5.52	-5.51	0.19	-0.11	-35.06	
3,310.00	0.06	167.76	3,309.97	-5.14	5.45	-5.71	0.16	-0.14	38.29	
3,410.00	0.13	142.84	3,409.97	-5.28	5.53	-5.86	0.08	0.07	-35.06	
3,510.00	0.16	212.20	3,509.97	-5.49	5.52	-6.07	0.17	0.03	64.36	
3,610.00	0.26	230.79	3,609.97	-5.75	5.27	-6.30	0.12	0.10	18.59	
3,710.00	0.15	237.87	3,709.96	-5.96	4.99	-6.48	0.11	-0.11	7.08	
3,810.00	0.03	306.37	3,809.96	-6.02	4.85	-6.52	0.14	-0.12	68.50	
3,910.00	0.20	179.67	3,909.96	-6.17	4.83	-6.68	0.22	0.17	-126.70	
4,010.00	0.93	112.16	4,009.96	-6.66	5.59	-7.24	0.87	0.73	-67.51	
4,110.00	0.92	131.24	4,109.95	-7.49	6.94	-8.22	0.31	-0.01	19.08	
4,210.00	0.75	144.36	4,209.94	-8.55	7.93	-9.38	0.25	-0.17	13.12	
4,310.00	0.60	164.80	4,309.93	-9.59	8.45	-10.47	0.28	-0.15	20.44	
4,320.00	0.59	161.28	4,319.93	-9.69	8.48	-10.57	0.38	-0.10	-35.20	
Gyro Tie In=4320'MD - PHX+MWD+HDGM (2)										
4,341.00	0.80	169.00	4,340.93	-9.90	8.53	-10.79	0.38	0.05	36.76	
KOP=4341'MD - PHX+MWD+HDGM (2)										
4,384.00	1.90	92.80	4,383.92	-10.15	9.29	-11.13	4.30	3.02	-177.21	
4,427.00	5.60	78.00	4,426.82	-9.75	12.05	-11.04	8.82	8.60	-34.42	
4,470.00	9.50	74.10	4,469.44	-8.34	17.52	-10.25	9.14	9.07	-9.07	
4,513.00	13.50	73.60	4,511.57	-5.95	25.75	-8.79	9.31	9.30	-1.16	
4,556.00	16.60	75.90	4,553.09	-3.04	36.53	-7.10	7.34	7.21	5.35	
4,599.00	20.20	78.30	4,593.88	-0.04	49.76	-5.60	8.55	8.37	5.58	

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Professional Directional Survey Report



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Project: Tyler County, WV
Site: WEU4
Well: Well #512891 -Marcellus
Wellbore: 512891 ST01
Design: 512891 ST01 As Drilled Surveys

Local Co-ordinate Reference: Well Well #512891 -Marcellus - Slot 512891
TVD Reference: KB@23 @ 1102 00usft
MD Reference: KB@23 @ 1102 00usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: Well_Planner1

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
4,642.00	21.60	84.50	4,634.06	2.23	64.91	-5.04	6.08	3.26	14.42
4,685.00	20.80	97.60	4,674.17	1.98	80.36	-7.01	11.15	-1.86	30.47
4,728.00	21.10	111.70	4,714.35	-1.90	95.13	-12.51	11.72	0.70	32.79
4,771.00	24.30	117.60	4,754.02	-8.86	110.17	-21.11	9.12	7.44	13.72
4,814.00	28.00	117.90	4,792.61	-17.69	126.94	-31.76	8.61	8.60	0.70
4,858.00	31.90	116.20	4,830.73	-27.66	146.50	-43.85	9.07	8.86	-3.86
4,901.00	35.80	114.20	4,866.44	-37.83	168.18	-56.38	9.43	9.07	-4.65
4,945.00	38.80	109.30	4,901.44	-47.87	192.94	-68.92	9.59	6.82	-11.14
4,988.00	40.00	102.80	4,934.68	-55.19	219.14	-79.32	9.99	2.79	-15.12
5,031.00	39.90	99.90	4,967.65	-60.62	246.21	-87.75	4.34	-0.23	-6.74
5,074.00	40.00	101.10	5,000.61	-65.65	273.35	-95.78	1.81	0.23	2.79
5,118.00	41.70	102.20	5,033.90	-71.47	301.54	-104.71	4.20	3.86	2.50
5,161.00	42.10	101.80	5,065.90	-77.44	329.63	-113.78	1.12	0.93	-0.93
5,204.00	41.30	101.30	5,098.01	-83.17	357.65	-122.60	2.01	-1.86	-1.16
5,247.00	42.30	101.60	5,130.06	-88.86	385.74	-131.39	2.37	2.33	0.70
5,290.00	42.70	101.80	5,161.77	-94.75	414.19	-140.43	0.98	0.93	0.47
5,333.00	41.70	101.60	5,193.62	-100.60	442.47	-149.41	2.35	-2.33	-0.47
5,376.00	41.20	101.10	5,225.85	-106.21	470.36	-158.09	1.39	-1.16	-1.16
5,400.00	41.37	101.72	5,243.88	-109.34	485.90	-162.94	1.83	0.69	2.56
PHX Tie In=5400' MD - PRO D+MWD+IGRF (3)									
5,477.00	41.70	103.30	5,301.53	-120.40	535.74	-179.50	1.43	0.43	2.06
KOP=5477'MD - PRO D+MWD+IGRF (3)									
5,537.00	38.10	94.10	5,347.59	-126.32	573.67	-189.62	11.51	-6.00	-15.33
5,568.00	38.00	93.70	5,372.00	-127.62	592.73	-193.04	0.86	-0.32	-1.29
5,599.00	38.00	94.40	5,396.43	-128.97	611.77	-196.51	1.39	0.00	2.26
5,631.00	37.80	93.70	5,421.68	-130.36	631.38	-200.08	1.48	-0.63	-2.19
5,662.00	37.80	93.50	5,446.18	-131.55	650.34	-203.38	0.40	0.00	-0.65
5,694.00	38.40	94.30	5,471.36	-132.89	670.04	-206.92	2.43	1.88	2.50
5,728.00	40.30	94.00	5,497.65	-134.45	691.54	-210.87	5.62	5.59	-0.88
5,758.00	41.60	90.30	5,520.31	-135.18	711.18	-213.79	9.17	4.33	-12.33
5,789.00	41.90	89.70	5,543.44	-135.18	731.82	-216.09	1.61	0.97	-1.61
5,820.00	41.70	89.20	5,566.55	-134.98	752.49	-218.20	1.25	-0.65	-1.56
5,852.00	41.80	88.70	5,590.42	-134.59	773.79	-220.20	1.09	0.31	-2.26
5,883.00	41.80	88.00	5,613.53	-134.00	794.44	-221.91	1.51	0.00	0.32
5,914.00	42.00	88.10	5,636.60	-133.29	815.13	-223.52	0.68	0.65	8.75
5,946.00	41.20	90.90	5,660.54	-133.10	836.37	-225.71	6.32	-2.50	10.00
5,977.00	41.50	94.00	5,683.81	-133.98	856.83	-228.87	6.68	0.97	5.94
6,009.00	41.60	95.90	5,707.76	-135.81	877.97	-233.05	3.95	0.31	11.61
6,040.00	41.70	99.50	5,730.93	-136.57	898.38	-238.07	7.72	0.32	13.75
6,072.00	42.10	103.90	5,754.75	-142.91	919.30	-244.71	9.27	1.25	13.87
6,103.00	42.30	108.20	5,777.72	-148.66	939.30	-252.67	9.34	0.65	0.31
6,135.00	42.40	108.30	5,801.37	-155.41	959.77	-261.66	0.38	0.31	-12.26
6,166.00	41.90	104.50	5,824.35	-161.29	979.72	-269.73	8.38	-1.61	-1.75
6,229.00	42.00	103.40	5,871.21	-171.44	1,020.59	-284.39	1.18	0.16	

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Survey

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6,260.00	41.80	103.30	5,894.28	-176.22	1,040.73	-291.39	0.68	-0.65	-0.32
6,292.00	42.90	105.40	5,917.93	-181.56	1,061.62	-299.03	5.60	3.44	6.56
6,323.00	43.00	105.20	5,940.62	-187.14	1,081.99	-306.85	0.55	0.32	-0.65
6,355.00	43.00	104.40	5,964.03	-192.71	1,103.09	-314.74	1.70	0.00	-2.50
6,386.00	41.50	100.70	5,986.98	-197.25	1,123.42	-321.52	9.37	-4.84	-11.94
6,417.00	40.50	97.00	6,010.38	-200.38	1,143.51	-326.88	8.47	-3.23	-11.94
6,449.00	39.60	93.50	6,034.88	-202.27	1,164.01	-331.05	7.58	-2.81	-10.94
6,480.00	37.40	89.70	6,059.14	-202.83	1,183.29	-333.75	10.42	-7.10	-12.26
6,512.00	35.50	85.20	6,084.88	-202.00	1,202.27	-335.05	10.25	-5.94	-14.06
6,544.00	35.00	78.80	6,111.02	-199.44	1,220.54	-334.55	11.64	-1.56	-20.00
6,575.00	35.70	73.10	6,136.31	-195.08	1,237.92	-332.16	10.87	2.26	-18.39
6,606.00	35.80	67.10	6,161.48	-188.92	1,254.93	-327.94	11.31	0.32	-19.35
6,638.00	36.00	61.50	6,187.41	-180.79	1,271.82	-321.75	10.28	0.63	-17.50
6,669.00	36.00	55.50	6,212.50	-171.28	1,287.34	-314.03	11.37	0.00	-19.35
6,701.00	35.90	51.00	6,238.41	-160.05	1,302.38	-304.55	8.26	-0.31	-14.06
6,732.00	35.90	46.70	6,263.52	-148.09	1,316.07	-294.19	8.13	0.00	-13.87
6,764.00	36.10	41.10	6,289.42	-134.55	1,329.09	-282.19	10.30	0.63	-17.50
6,795.00	37.30	35.40	6,314.28	-120.01	1,340.54	-269.02	11.65	3.87	-18.39
6,827.00	38.60	28.90	6,339.52	-103.36	1,350.99	-253.64	13.13	4.06	-20.31
6,859.00	40.30	24.60	6,364.24	-85.20	1,360.12	-236.62	10.05	5.31	-13.44
6,890.00	42.00	21.30	6,387.58	-66.42	1,368.06	-218.85	8.89	5.48	-10.65
6,922.00	43.50	17.70	6,411.08	-45.95	1,375.30	-199.31	8.96	4.69	-11.25
6,953.00	46.00	13.70	6,433.10	-24.95	1,381.19	-179.10	12.14	8.06	-12.90
6,985.00	48.40	10.10	6,454.84	-1.98	1,386.02	-156.81	11.15	7.50	-11.25
7,016.00	51.50	7.30	6,474.79	21.48	1,389.59	-133.90	12.16	10.00	-9.03
7,048.00	54.60	5.30	6,494.03	46.89	1,392.39	-108.96	10.90	9.69	-6.25
7,079.00	57.00	3.00	6,511.45	72.46	1,394.24	-83.76	9.88	7.74	-7.42
7,110.00	58.70	0.40	6,527.95	98.69	1,395.01	-57.78	8.97	5.48	-8.39
7,142.00	60.60	357.60	6,544.12	126.29	1,394.52	-30.29	9.60	5.94	-8.75
7,173.00	63.20	354.90	6,558.72	153.57	1,392.72	-2.98	11.37	8.39	-8.71
7,205.00	65.10	352.50	6,572.68	182.19	1,389.56	25.81	8.99	5.94	-7.50
7,236.00	67.40	350.80	6,585.16	210.26	1,385.44	54.17	8.96	7.42	-5.48
7,268.00	70.10	348.60	6,596.76	239.60	1,380.10	83.92	10.59	8.44	-6.88
7,293.65	72.42	347.44	6,605.00	263.36	1,375.06	108.09	10.00	9.03	-4.53
Top of Tully@6605'TVD									
7,299.00	72.90	347.20	6,606.59	268.34	1,373.93	113.17	10.00	9.05	-4.46
7,331.00	75.20	344.90	6,615.39	298.20	1,366.51	143.66	9.97	7.19	-7.19
7,362.00	77.50	343.00	6,622.70	327.14	1,358.18	173.36	9.51	7.42	-6.13
7,378.01	78.74	342.01	6,626.00	342.08	1,353.48	188.73	9.80	7.73	-6.15
Top of Hamilton@6626'TVD									
7,393.00	79.90	341.10	6,628.78	356.06	1,348.82	203.14	9.80	7.75	-6.10
7,425.00	82.60	339.90	6,633.65	385.87	1,338.26	233.94	9.22	8.44	-3.75
7,456.00	84.50	338.70	6,637.13	414.68	1,327.37	263.79	7.24	6.13	-3.87

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 7.50
 JUL 20 2016
 -5.48
 -6.88
 -4.53



Professional Directional Survey Report



Company: EQT PRODUCTION
Project: Tyler County, WV
Site: WEU4
Well: Well #512891 -Marcellus
Wellbore: 512891 ST01
Design: 512891 ST01 As Drilled Surveys

Local Co-ordinate Reference: Well Well #512891 -Marcellus - Slot 512891
TVD Reference: KB@23 @ 1102 00usft
MD Reference: KB@23 @ 1102 00usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: Well_Planner1

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
7,488.00	86.70	337.20	6,639.58	444.25	1,315.39	294.51	8.31	6.88	-4.69	
7,519.00	89.20	335.90	6,640.69	472.67	1,303.06	324.13	9.09	8.06	-4.19	
7,551.00	89.80	335.40	6,640.97	501.82	1,289.87	354.58	2.44	1.88	-1.56	
7,645.00	89.40	335.80	6,641.63	587.42	1,251.04	443.98	0.60	-0.43	0.43	
7,739.00	89.10	336.50	6,642.86	673.39	1,213.04	533.65	0.81	-0.32	0.74	
7,834.00	90.70	334.80	6,643.02	759.93	1,173.87	624.03	2.46	1.68	-1.79	
LP=7834'MD/6643.02'TVD										
7,928.00	90.10	334.60	6,642.37	844.91	1,133.70	712.97	0.67	-0.64	-0.21	
8,023.00	90.40	334.20	6,641.95	930.59	1,092.65	802.69	0.53	0.32	-0.42	
8,117.00	89.50	332.80	6,642.04	1,014.71	1,050.71	890.97	1.77	-0.96	-1.49	
8,211.00	89.80	330.60	6,642.81	1,097.46	1,006.15	978.19	2.36	0.32	-2.34	
8,305.00	88.30	327.50	6,644.17	1,178.06	957.82	1,063.67	3.66	-1.60	-3.30	
8,400.00	88.10	327.00	6,647.15	1,257.92	906.45	1,148.77	0.57	-0.21	-0.53	
8,494.00	89.80	328.10	6,648.88	1,337.22	856.03	1,233.22	2.15	1.81	1.17	
8,588.00	90.20	328.00	6,648.88	1,416.98	806.29	1,318.03	0.44	0.43	-0.11	
Deepest Point of well=8588'MD / 6648.88'TVD										
8,683.00	90.40	326.90	6,648.38	1,497.06	755.17	1,403.32	1.18	0.21	-1.16	
8,777.00	91.70	330.10	6,646.86	1,577.18	706.07	1,488.42	3.67	1.38	3.40	
8,871.00	91.30	329.10	6,644.19	1,658.23	658.52	1,574.28	1.15	-0.43	-1.06	
8,966.00	92.50	331.00	6,641.04	1,740.49	611.12	1,661.32	2.36	1.26	2.00	
9,060.00	92.70	331.00	6,636.78	1,822.62	565.60	1,748.02	0.21	0.21	0.00	
9,154.00	90.20	331.40	6,634.40	1,904.96	520.33	1,834.90	2.69	-2.66	0.43	
9,249.00	90.20	331.60	6,634.07	1,988.45	475.00	1,922.93	0.21	0.00	0.21	
9,343.00	89.60	329.80	6,634.23	2,070.42	429.00	2,009.53	2.02	-0.64	-1.91	
9,437.00	89.40	329.60	6,635.05	2,151.57	381.58	2,095.47	0.30	-0.21	-0.21	
9,532.00	91.50	328.00	6,634.31	2,232.82	332.37	2,181.71	2.78	2.21	-1.88	
9,626.00	90.30	325.90	6,632.83	2,311.60	281.12	2,265.72	2.57	-1.28	-2.23	
9,721.00	90.30	325.50	6,632.33	2,390.08	227.58	2,349.69	0.42	0.00	-0.42	
9,815.00	90.90	327.40	6,631.35	2,468.41	175.64	2,433.33	2.12	0.64	2.02	
9,909.00	91.10	329.00	6,629.71	2,548.28	126.11	2,518.24	1.72	0.21	1.70	
10,004.00	91.10	329.60	6,627.89	2,629.95	77.62	2,604.82	0.63	0.00	0.63	
10,098.00	91.40	331.00	6,625.84	2,711.58	31.06	2,691.14	1.52	0.32	1.49	
10,192.00	90.70	332.50	6,624.11	2,794.37	-13.42	2,778.38	1.76	-0.74	1.60	
10,286.00	88.60	332.50	6,624.69	2,877.74	-56.82	2,866.08	2.23	-2.23	0.00	
10,381.00	89.40	332.00	6,626.34	2,961.80	-101.05	2,954.55	0.99	0.84	-0.53	
10,475.00	88.50	333.30	6,628.07	3,045.28	-144.23	3,042.33	1.68	-0.96	1.38	
10,569.00	88.80	335.60	6,630.28	3,130.06	-184.76	3,131.10	2.47	0.32	2.45	
10,664.00	88.30	339.80	6,632.69	3,217.90	-220.78	3,222.42	4.45	-0.53	4.42	
10,759.00	87.30	343.30	6,636.34	3,307.94	-250.82	3,315.25	3.83	-1.05	3.68	
10,853.00	88.00	347.90	6,640.19	3,398.88	-274.17	3,408.24	4.95	0.74	4.89	
10,947.00	87.90	348.00	6,643.55	3,490.75	-293.78	3,501.72	0.15	-0.11	0.11	
11,042.00	90.30	348.00	6,645.05	3,583.66	-313.53	3,596.25	2.53	2.53	0.00	
11,136.00	90.90	347.50	6,644.06	3,675.51	-333.48	3,689.76	0.83	0.64	-0.53	
11,230.00	89.60	347.20	6,643.65	3,767.23	-354.06	3,783.20	1.42	-1.38	-0.32	

COMPASS 5000.1 Build 80

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Professional Directional
Survey Report



Company: EQT PRODUCTION
Project: Tyler County, WV
Site: WEU4
Well: Well #512891 -Marcellus
Wellbore: 512891 ST01
Design: 512891 ST01 As Drilled Surveys

Local Co-ordinate Reference: Well Well #512891 -Marcellus - Slot 512891
TVD Reference: KB@23 @ 1102.00usft
MD Reference: KB@23 @ 1102.00usft
North Reference: Grd
Survey Calculation Method: Minimum Curvature
Database: Well_Planner1

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
11,325.00	89.60	346.70	6,644.31	3,859.77	-375.51	3,877.56	0.53	0.00	-0.53	
11,419.00	90.90	345.70	6,643.90	3,951.06	-397.93	3,970.78	1.74	1.38	-1.06	
11,513.00	92.80	345.70	6,640.87	4,042.09	-421.14	4,063.84	2.02	2.02	0.00	
11,607.00	92.60	345.40	6,636.44	4,133.02	-444.57	4,156.81	0.38	-0.21	-0.32	
11,690.00	92.60	345.20	6,632.68	4,213.22	-465.61	4,238.86	0.24	0.00	-0.24	
FINAL Survey: 11690' MD / 6632.68' TVD										
11,745.00	92.60	345.21	6,630.18	4,266.34	-479.64	4,293.22	0.02	0.00	0.02	
PTB: 11745'MD/ 6630.18'TVD										

Formations

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
7,293.65	6,605.00	Top of Tully@6605'TVD		0.00	
7,378.01	6,626.00	Top of Hamilton@6626'TVD		0.00	

Design Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
5,400.00	5,243.88	-109.34	485.90	PHX Tie In=5400' MD - PRO D+MWD+IGRF (3)
5,477.00	5,301.53	-120.40	535.74	KOP=5477'MD - PRO D+MWD+IGRF (3)
7,834.00	6,643.02	759.93	1,173.87	LP=7834'MD/6643.02'TVD
8,588.00	6,648.88	1,416.98	806.29	Deepest Point of well=8588'MD / 6648.88'TVD
11,690.00	6,632.68	4,213.22	-465.61	FINAL Survey: 11690' MD / 6632.68' TVD
11,745.00	6,630.18	4,266.34	-479.64	PTB: 11745'MD/ 6630.18'TVD

Checked By: _____ Approved By: _____ Date: _____

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