



Where energy meets innovation.

EQT PRODUCTION

Tyler County, WV

WEU4

Well #512893 -Marcellus - Slot 512893

Main Wellbore

API#:47-095-02281

Design: 512893 As Drilled Surveys

Standard Survey Report

20 March, 2016

Received
Office of Oil & Gas
JUL 20 2016

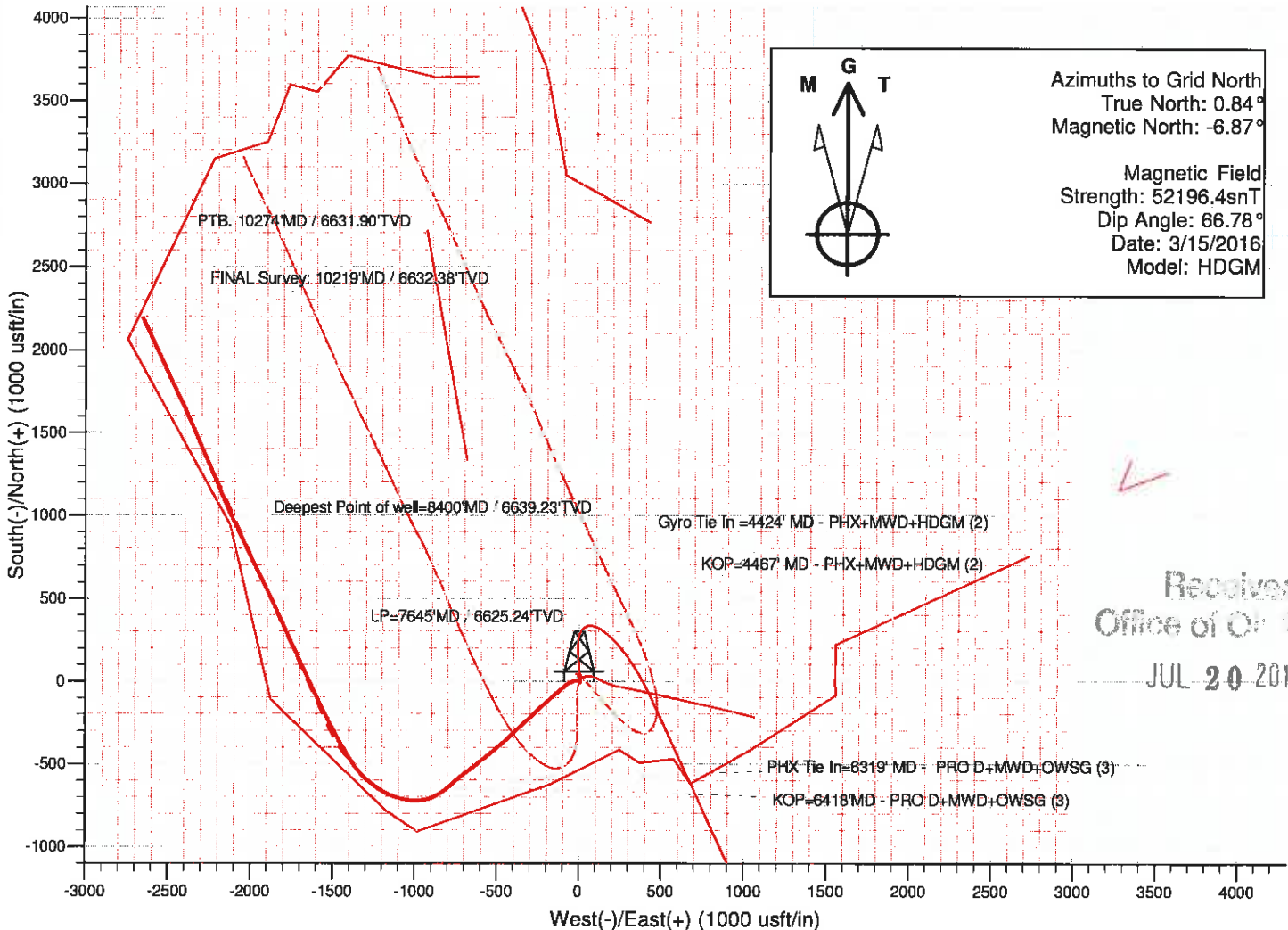
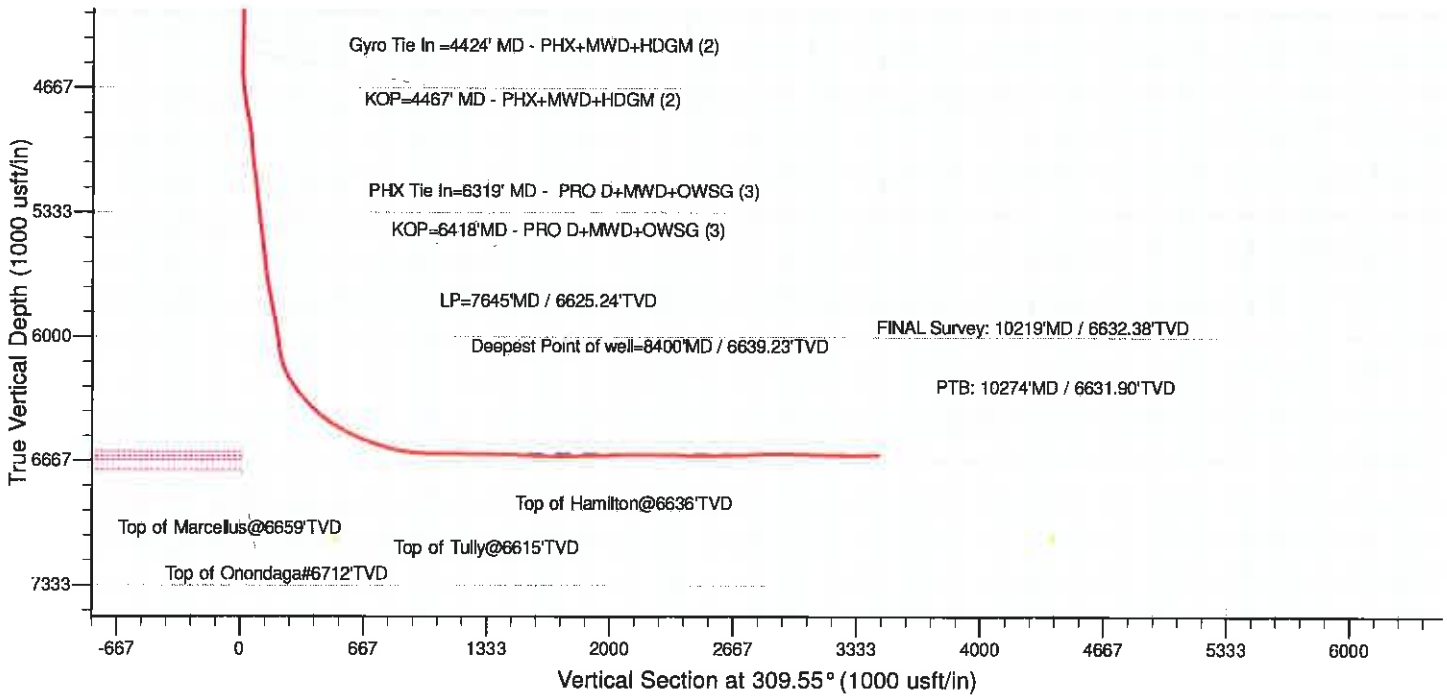


10/28/2016



Where energy meets innovation.

Project: Tyler County, WV
Site: WEU4
Well: Well #512893 -Marcellus
Wellbore: Main Wellbore
Design: 512893 As Drilled Surveys
Elevation: GL 1079 + 23' KB @ 1102.00usft



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Office of Oil & Gas
JUL 20 2016

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Where energy meets innovation.

Professional Directional Survey Report



Company:	EQT PRODUCTION	Local Co-ordinate Reference:	Well Well #512893 -Marcellus - Slot 512893
Project:	Tyler County, WV	TVD Reference:	GL 1079 + 23' KB @ 1102 00usft
Site:	WEU4	MD Reference:	GL 1079 + 23' KB @ 1102 00usft
Well:	Well #512893 -Marcellus	North Reference:	Grid
Wellbore:	Main Wellbore	Survey Calculation Method:	Minimum Curvature
Design:	512893 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 #512893 -Marcellus - Slot 512893					
Well Position	+N/-S	0.00 usft	Northing:	318,322.32 usft	Latitude:	39° 21' 59.21 N
	+E/-W	0.00 usft	Easting:	1,626,591.04 usft	Longitude:	80° 49' 14.81 W
Position Uncertainty		0.00 usft	Wellhead Elevation:	0.00 usft	Ground Level:	1,079.00 usft

Wellbore	Main Wellbore				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	3/15/2016	-7.72	66.78	52,196

Design	512893 As Drilled Surveys				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)	
	0.00	0.00	0.00		309.55

Survey Program	Date	3/20/2016			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
110.00	4,424.00	512893 Gyrodata Gyro (Main Wellbore)	GYD_DP_MS	Gyrodata gyro-compassing and drop	
4,467.00	6,319.00	512893 PHX MWD (Main Wellbore)	PHX+MWD+HDGM	PHX+OWSG MWD + HDGM	
6,418.00	10,274.00	512893 Pro D MWD (Main Wellbore)	MWD - OWSG	MWD - OWSG	

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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	0.25	347.94	110.00	0.23	-0.05	0.19	0.23	0.23	0.00
210.00	0.21	352.98	210.00	0.63	-0.12	0.49	0.04	-0.04	5.04
310.00	0.14	344.60	310.00	0.93	-0.17	0.73	0.07	-0.07	-8.38
410.00	0.15	281.43	410.00	1.07	-0.33	0.94	0.15	0.01	-63.17
510.00	0.15	263.89	510.00	1.09	-0.59	1.15	0.05	0.00	-17.54
610.00	0.07	26.48	610.00	1.13	-0.70	1.25	0.20	-0.08	122.59
710.00	0.20	60.46	710.00	1.27	-0.52	1.20	0.15	0.13	33.98
810.00	0.28	60.99	810.00	1.47	-0.15	1.05	0.08	0.08	0.53



Professional Directional
Survey Report



Company: EQT PRODUCTION
Project: Tyler County, WV
Site: WEU4
Well: Well #512893 -Marcellus
Wellbore: Main Wellbore
Design: 512893 As Drilled Surveys

Local Co-ordinate Reference: Well Well #512893 -Marcellus - Slot 512893
TVD Reference: GL 1079 + 23' KB @ 1102 00usft
MD Reference: GL 1079 + 23' KB @ 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)	
910.00	0.30	56.30	910.00	1.74	0.28	0.89	0.03	0.02	-4.69	
1,010.00	0.22	31.09	1,009.99	2.04	0.60	0.84	0.14	-0.08	-25.21	
1,110.00	0.18	34.87	1,109.99	2.34	0.79	0.88	0.04	-0.04	3.78	
1,210.00	0.15	15.10	1,209.99	2.59	0.91	0.95	0.06	-0.03	-19.77	
1,310.00	0.15	4.12	1,309.99	2.85	0.95	1.08	0.03	0.00	-10.98	
1,410.00	0.07	322.14	1,409.99	3.03	0.93	1.21	0.11	-0.08	-41.98	
1,510.00	0.11	306.77	1,509.99	3.13	0.81	1.37	0.05	0.04	-15.37	
1,610.00	0.10	19.27	1,609.99	3.27	0.76	1.50	0.12	-0.01	72.50	
1,710.00	0.15	11.86	1,709.99	3.49	0.82	1.59	0.05	0.05	-7.41	
1,810.00	0.19	24.00	1,809.99	3.76	0.91	1.69	0.05	0.04	12.14	
1,910.00	0.20	5.24	1,909.99	4.09	1.00	1.84	0.06	0.01	-18.76	
2,010.00	0.22	15.33	2,009.99	4.45	1.06	2.01	0.04	0.02	10.09	
2,110.00	0.27	8.58	2,109.99	4.87	1.15	2.21	0.06	0.05	-6.75	
2,210.00	0.32	20.80	2,209.99	5.36	1.28	2.42	0.08	0.05	12.22	
2,310.00	0.28	23.11	2,309.99	5.85	1.48	2.58	0.04	-0.04	2.31	
2,410.00	0.27	22.47	2,409.99	6.29	1.67	2.72	0.01	-0.01	-0.64	
2,510.00	0.31	13.65	2,509.98	6.77	1.82	2.91	0.06	0.04	-8.82	
2,610.00	0.34	11.15	2,609.98	7.32	1.94	3.17	0.03	0.03	-2.50	
2,710.00	0.36	14.34	2,709.98	7.92	2.08	3.44	0.03	0.02	3.19	
2,810.00	0.36	349.82	2,809.98	8.53	2.10	3.82	0.15	0.00	-24.52	
2,910.00	0.31	5.60	2,909.98	9.11	2.07	4.21	0.10	-0.05	15.78	
3,010.00	0.24	337.34	3,009.98	9.57	2.01	4.54	0.15	-0.07	-28.28	
3,110.00	0.06	309.67	3,109.98	9.80	1.89	4.78	0.19	-0.18	-27.67	
3,210.00	0.12	240.75	3,209.98	9.78	1.76	4.87	0.11	0.06	-68.92	
3,310.00	0.10	228.63	3,309.98	9.67	1.60	4.92	0.03	-0.02	-12.12	
3,410.00	0.13	229.68	3,409.98	9.54	1.45	4.96	0.03	0.03	1.05	
3,510.00	0.13	202.38	3,509.98	9.36	1.32	4.94	0.06	0.00		
3,610.00	0.23	213.62	3,609.97	9.09	1.17	4.89	0.11	0.10		
3,710.00	0.23	226.56	3,709.97	8.79	0.91	4.89	0.05	0.00		
3,810.00	0.17	181.39	3,809.97	8.50	0.76	4.82	0.16	-0.06		
3,910.00	0.21	198.03	3,909.97	8.18	0.70	4.67	0.07	0.04		
4,010.00	0.24	145.63	4,009.97	7.83	0.76	4.40	0.20	0.03		
4,110.00	0.32	163.13	4,109.97	7.39	0.96	3.96	0.12	0.08		
4,210.00	0.32	177.96	4,209.97	6.84	1.05	3.55	0.08	0.00		
4,310.00	0.42	185.79	4,309.97	6.20	1.03	3.16	0.11	0.10		
4,410.00	0.61	183.31	4,409.96	5.31	0.96	2.64	0.19	0.19		
4,424.00	0.59	185.16	4,423.96	5.16	0.95	2.55	0.20	-0.14		
Gyro Tie In =4424' MD - PHX+MWD+HDGM (2)										
4,467.00	0.70	185.20	4,466.96	4.68	0.90	2.28	0.26	0.26		
KOP=4467' MD - PHX+MWD+HDGM (2)										
4,509.00	0.50	184.90	4,508.96	4.24	0.87	2.03	0.48	-0.48		
4,553.00	0.40	207.90	4,552.96	3.91	0.78	1.89	0.46	-0.23		
4,596.00	2.50	256.40	4,595.94	3.56	-0.20	2.42	5.24	4.88		

Received
Office of Oil &
11.24
12.94
-45.17
JUL 20 2016
16.64



Professional Directional Survey Report



Company: EQT PRODUCTION
Project: Tyler County, WV
Site: WEU4
Well: Well #512893 -Marcellus
Wellbore: Main Wellbore
Design: 512893 As Drilled Surveys

Local Co-ordinate Reference: Well Well #512893 -Marcellus - Slot 512893
TVD Reference: GL 1079 + 23' KB @ 1102 00usft
MD Reference: GL 1079 + 23' KB @ 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)
4,639.00	6.10	265.10	4,638.81	3.14	-3.39	4.62	8.48	8.37	20.23
4,682.00	9.50	267.20	4,681.41	2.77	-9.22	8.87	7.93	7.91	4.88
4,725.00	12.70	265.10	4,723.60	2.20	-17.47	14.87	7.50	7.44	-4.88
4,768.00	15.70	256.60	4,765.29	0.44	-27.84	21.75	8.48	6.98	-19.77
4,810.00	19.20	255.40	4,805.35	-2.81	-40.06	29.23	8.38	8.33	-2.86
4,853.00	21.10	249.40	4,845.72	-7.12	-54.15	37.22	6.52	4.42	-13.95
4,896.00	22.20	239.40	4,885.70	-13.98	-68.39	43.84	8.94	2.56	-23.26
4,939.00	23.80	231.20	4,925.29	-23.56	-82.15	48.35	8.32	3.72	-19.07
4,983.00	25.80	225.70	4,965.23	-35.81	-95.93	51.17	6.93	4.55	-12.50
5,026.00	28.90	228.90	5,003.42	-49.18	-110.46	53.86	7.98	7.21	7.44
5,069.00	33.00	229.80	5,040.29	-63.57	-127.24	57.64	9.60	9.53	2.09
5,112.00	37.40	229.50	5,075.42	-79.62	-146.12	61.98	10.24	10.23	-0.70
5,155.00	41.60	229.10	5,108.59	-97.46	-166.85	66.61	9.79	9.77	-0.93
5,198.00	42.00	228.40	5,140.65	-116.35	-188.40	71.19	1.43	0.93	-1.63
5,241.00	41.10	227.30	5,172.83	-135.49	-209.54	75.31	2.69	-2.09	-2.56
5,284.00	41.60	226.50	5,205.11	-154.90	-230.28	78.95	1.69	1.16	-1.86
5,327.00	41.70	226.20	5,237.24	-174.63	-250.96	82.33	0.52	0.23	-0.70
5,370.00	42.10	226.40	5,269.25	-194.47	-271.72	85.71	0.98	0.93	0.47
5,413.00	42.30	226.40	5,301.10	-214.39	-292.64	89.16	0.47	0.47	0.00
5,457.00	42.70	227.70	5,333.54	-234.64	-314.40	93.04	2.19	0.91	2.95
5,501.00	43.00	227.80	5,365.80	-254.76	-336.55	97.31	0.70	0.68	0.23
5,545.00	43.20	228.10	5,397.93	-274.89	-358.87	101.70	0.65	0.45	0.68
5,589.00	43.20	227.40	5,430.00	-295.15	-381.17	106.00	1.09	0.00	-1.59
5,632.00	42.70	226.60	5,461.48	-315.13	-402.59	109.80	1.72	-1.16	-1.86
5,675.00	42.50	226.10	5,493.13	-335.22	-423.65	113.25	0.91	-0.47	-1.16
5,718.00	42.00	226.70	5,524.96	-355.15	-444.59	116.70	1.49	-1.16	1.40
5,761.00	40.70	228.20	5,557.24	-374.37	-465.51	120.60	3.80	-3.02	3.49
5,804.00	39.00	228.50	5,590.25	-392.68	-486.10	124.82	3.98	-3.95	0.70
5,847.00	38.00	229.20	5,623.90	-410.29	-506.26	129.14	2.54	-2.33	1.63
5,890.00	37.80	230.70	5,657.83	-427.29	-526.47	133.81	2.19	-0.47	3.49
5,933.00	39.00	232.50	5,691.53	-443.87	-547.41	139.49	3.81	2.79	
5,976.00	40.20	232.70	5,724.66	-460.52	-569.18	145.68	2.81	2.79	
6,019.00	39.80	232.60	5,757.60	-477.29	-591.15	151.95	0.94	-0.93	
6,062.00	39.60	231.30	5,790.69	-494.22	-612.78	157.85	1.99	-0.47	
6,105.00	41.50	231.70	5,823.36	-511.62	-634.66	163.64	4.46	4.42	
6,147.00	43.10	233.00	5,854.42	-528.88	-657.04	169.91	4.34	3.81	3.10
6,190.00	42.60	233.50	5,885.95	-546.38	-680.47	176.84	1.41	-1.16	1.16
6,233.00	41.20	233.00	5,917.95	-563.56	-703.48	183.64	3.35	-3.26	-1.16
6,276.00	39.40	231.40	5,950.75	-580.59	-725.46	189.74	4.83	-4.19	-3.72
6,319.00	39.50	229.00	5,983.95	-598.08	-746.45	194.79	3.55	0.23	-5.58
PHX Tie In=6319' MD - PRO D+MWD+OWSG (3)									
6,418.00	42.20	227.40	6,058.83	-641.25	-794.70	204.51	2.92	2.73	-1.62
KOP=6418'MD - PRO D+MWD+OWSG (3)									
6,449.00	42.60	231.10	6,081.73	-654.89	-810.53	208.03	8.15	1.29	11.94

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 4.19
 -0.23
 -3.02
 0.93
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Professional Directional Survey Report



Company:	EQT PRODUCTION	Local Co-ordinate Reference:	Well Well #512893 -Marcellus - Slot 512893
Project:	Tyler County, WV	TVD Reference:	GL 1079 + 23' KB @ 1102.00usft
Site:	WEU4	MD Reference:	GL 1078 + 23' KB @ 1102.00usft
Well:	Well #512893 -Marcellus	North Reference:	Grid
Wellbore:	Main Wellbore	Survey Calculation Method:	Minimum Curvature
Design:	512893 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)
6,481.00	43.10	236.10	6,105.20	-667.79	-828.03	213.32	10.74	1.56	15.63
6,512.00	43.50	239.40	6,127.76	-679.13	-846.01	219.96	7.41	1.29	10.65
6,544.00	43.40	240.50	6,150.99	-690.15	-865.06	227.63	2.38	-0.31	3.44
6,575.00	43.30	244.70	6,173.54	-699.94	-883.94	235.96	9.30	-0.32	13.55
6,607.00	43.10	250.30	6,196.87	-708.32	-904.16	246.22	11.99	-0.63	17.50
6,638.00	44.10	255.20	6,219.33	-714.65	-924.57	257.93	11.37	3.23	15.81
6,670.00	44.70	260.70	6,242.20	-719.31	-946.45	271.83	12.17	1.88	17.19
6,701.00	45.40	265.30	6,264.11	-721.98	-968.21	286.91	10.74	2.26	14.84
6,733.00	45.50	268.80	6,286.56	-723.15	-990.98	303.72	7.80	0.31	10.94
6,764.00	45.70	273.40	6,308.26	-722.73	-1,013.11	321.06	10.62	0.65	14.84
6,796.00	46.30	278.10	6,330.49	-720.42	-1,036.00	340.18	10.73	1.88	14.69
6,827.00	47.30	281.60	6,351.72	-716.55	-1,058.26	359.81	8.84	3.23	11.29
6,859.00	48.60	283.80	6,373.15	-711.32	-1,081.44	381.01	6.52	4.06	6.88
6,890.00	49.80	286.30	6,393.41	-705.22	-1,104.09	402.36	7.23	3.87	8.06
6,922.00	51.60	290.20	6,413.68	-697.46	-1,127.60	425.43	10.98	5.63	12.19
6,953.00	53.70	293.60	6,432.49	-688.26	-1,150.45	448.91	11.04	6.77	10.97
6,984.00	55.80	296.30	6,450.38	-677.58	-1,173.40	473.40	9.82	6.77	8.71
7,016.00	57.80	299.50	6,467.91	-665.04	-1,197.05	499.62	10.44	6.25	10.00
7,047.00	60.00	302.70	6,483.92	-651.33	-1,219.77	525.87	11.33	7.10	10.32
7,079.00	62.00	305.90	6,499.44	-635.55	-1,242.88	553.74	10.75	6.25	10.00
7,110.00	64.20	308.20	6,513.46	-618.90	-1,264.94	581.35	9.70	7.10	7.42
7,142.00	65.60	310.70	6,527.04	-600.48	-1,287.31	610.33	8.32	4.38	7.81
7,173.00	65.80	314.20	6,539.80	-581.42	-1,308.15	638.54	10.31	0.65	11.29
7,205.00	68.00	317.50	6,552.36	-560.30	-1,328.65	667.79	11.71	6.88	10.31
7,236.00	70.90	320.30	6,563.24	-538.42	-1,347.72	696.42	12.61	9.35	9.03
7,268.00	71.90	323.30	6,573.45	-514.59	-1,366.47	726.05	9.42	3.13	9.38
7,299.00	73.00	326.30	6,582.80	-490.44	-1,383.50	754.56	9.89	3.55	9.68
7,330.00	74.90	328.00	6,591.37	-465.41	-1,399.66	782.96	8.08	6.13	5.48
7,362.00	77.00	329.10	6,599.14	-438.93	-1,415.85	812.31	7.36	6.56	3.44
7,393.00	78.80	329.40	6,605.63	-412.88	-1,431.35	840.84	5.88	5.81	0.97
7,425.00	80.80	330.10	6,611.30	-385.68	-1,447.21	870.40	6.61	6.25	2.19
7,450.12	82.26	330.59	6,615.00	-364.09	-1,459.51	893.62	6.11	5.81	1.94
Top of Tully@6615'TVD									
7,456.00	82.60	330.70	6,615.77	-359.01	-1,462.37	899.06	6.11	5.81	
7,488.00	84.30	331.30	6,619.42	-331.20	-1,477.78	928.65	5.63	5.31	1.88
7,550.00	88.00	332.00	6,623.59	-276.77	-1,507.15	985.95	6.07	5.97	1.13
7,645.00	90.00	333.60	6,625.24	-192.30	-1,550.58	1,073.21	2.70	2.11	1.68
LP=7646'MD / 6625.24'TVD									
7,739.00	89.20	333.40	6,625.90	-108.18	-1,592.50	1,159.11	0.88	-0.85	-0.21
7,833.00	89.80	334.60	6,626.72	-23.70	-1,633.71	1,244.68	1.43	0.64	1.28
7,928.00	89.60	334.80	6,627.22	62.19	-1,674.30	1,330.67	0.30	-0.21	0.21
8,022.00	89.10	335.20	6,628.29	147.38	-1,714.03	1,415.54	0.68	-0.53	0.43
8,117.00	87.00	334.80	6,631.52	233.42	-1,754.15	1,501.26	2.25	-2.21	-0.42
8,206.94	87.29	334.90	6,636.00	314.74	-1,792.33	1,582.48	0.34	0.32	0.11

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Professional Directional Survey Report



Company: EQT PRODUCTION
Project: Tyler County, WV
Site: WEU4
Well: Well #512893 -Marcellus
Wellbore: Main Wellbore
Design: 512893 As Drilled Surveys

Local Co-ordinate Reference: Well Well #512893 -Marcellus - Slot 512893
TVD Reference: GL 1079 + 23' KB @ 1102.00usft
MD Reference: GL 1079 + 23' KB @ 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)
Top of Hamilton@6636'TVD									
8,211.00	87.30	334.90	6,636.19	318.41	-1,794.05	1,586.14	0.34	0.32	0.11
8,305.00	89.10	335.30	6,639.14	403.62	-1,833.61	1,670.90	1.96	1.91	0.43
8,400.00	90.80	334.40	6,639.23	489.61	-1,873.98	1,756.78	2.02	1.79	-0.95
Deepest Point of well=8400'MD / 6639.23'TVD									
8,494.00	91.30	334.10	6,637.50	574.26	-1,914.81	1,842.16	0.62	0.53	-0.32
8,588.00	92.30	333.70	6,634.55	658.63	-1,956.14	1,927.75	1.15	1.06	-0.43
8,683.00	90.60	334.30	6,632.15	743.99	-1,997.77	2,014.20	1.90	-1.79	0.63
8,777.00	90.80	334.10	6,631.00	828.61	-2,038.68	2,099.62	0.30	0.21	-0.21
8,871.00	91.20	333.90	6,629.36	913.09	-2,079.88	2,185.18	0.48	0.43	-0.21
8,966.00	87.80	334.90	6,630.19	998.74	-2,120.92	2,271.36	3.73	-3.58	1.05
9,060.00	88.90	337.30	6,632.90	1,084.64	-2,158.98	2,355.41	2.81	1.17	2.55
9,154.00	89.70	337.30	6,634.04	1,171.35	-2,195.26	2,438.59	0.85	0.85	0.00
9,249.00	90.30	336.90	6,634.04	1,258.86	-2,232.22	2,522.81	0.76	0.63	-0.42
9,343.00	90.80	336.50	6,633.14	1,345.19	-2,269.40	2,606.45	0.68	0.53	-0.43
9,437.00	91.50	336.10	6,631.25	1,431.25	-2,307.18	2,690.37	0.86	0.74	-0.43
9,532.00	91.70	336.70	6,628.60	1,518.27	-2,345.20	2,775.09	0.67	0.21	0.63
9,626.00	91.70	336.50	6,625.81	1,604.50	-2,382.51	2,858.76	0.21	0.00	-0.21
9,721.00	89.40	334.20	6,624.90	1,690.83	-2,422.13	2,944.28	3.42	-2.42	-2.42
9,815.00	88.60	333.40	6,626.54	1,775.15	-2,463.62	3,029.97	1.20	-0.85	-0.85
9,909.00	88.50	336.20	6,628.92	1,860.17	-2,503.63	3,114.95	2.98	-0.11	2.98
10,004.00	87.80	335.00	6,631.99	1,946.64	-2,542.85	3,200.25	1.46	-0.74	-1.26
10,098.00	90.40	335.10	6,633.46	2,031.85	-2,582.49	3,285.07	2.77	2.77	0.11
10,192.00	90.60	334.60	6,632.64	2,116.93	-2,622.44	3,370.05	0.57	0.21	-0.53
10,219.00	90.50	333.70	6,632.38	2,141.23	-2,634.21	3,394.59	3.35	-0.37	-3.33
FINAL Survey: 10219'MD / 6632.38'TVD									
10,274.00	90.50	333.70	6,631.90	2,190.54	-2,658.58	3,444.78	0.00	0.00	0.00
PTB: 10274'MD / 6631.90'TVD									

Formations

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
7,450.12	6,615.00	Top of Tully@6615'TVD		0.00	
8,206.94	6,636.00	Top of Hamilton@6636'TVD		0.00	

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JUL 20 2016 COMPASS 5000.1 Build 80



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Well: Well #512893 -Marcellus
Wellbore: Main Wellbore
Design: 512893 As Drilled Surveys

Local Co-ordinate Reference: Well Well #512893 -Marcellus - Slot 512893
TVD Reference: GL 1079 + 23' KB @ 1102 00usft
MD Reference: GL 1079 + 23' KB @ 1102 00usft
North Reference: Grd
Survey Calculation Method: Minimum Curvature
Database: Well_Planner1

Design Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
4,424.00	4,423.96	5.16	0.95	Gyro Tie In =4424' MD - PHX+MWD+HDGM (2)
4,467.00	4,466.96	4.68	0.90	KOP=4467' MD - PHX+MWD+HDGM (2)
6,319.00	5,983.95	-598.08	-746.45	PHX Tie In=6319' MD - PRO D+MWD+OWSG (3)
6,418.00	6,058.83	-641.25	-794.70	KOP=6418'MD - PRO D+MWD+OWSG (3)
7,645.00	6,625.24	-192.30	-1,550.56	LP=7645'MD / 6625.24'TVD
8,400.00	6,639.23	489.61	-1,873.98	Deepest Point of well=8400'MD / 6639.23'TVD
10,219.00	6,632.38	2,141.23	-2,634.21	FINAL Survey: 10219'MD / 6632.38'TVD
10,274.00	6,631.90	2,190.54	-2,658.58	PTB: 10274'MD / 6631.90'TVD

Checked By: _____ Approved By: _____ Date: _____

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