



Where energy meets innovation.

EQT PRODUCTION

Tyler County, WV

WEU4

Well #516534 -Marcellus - Slot 516534

Main Wellbore

API#: 47-095-02316

Design: 516534 As Drilled Surveys

Standard Survey Report

26 March, 2016

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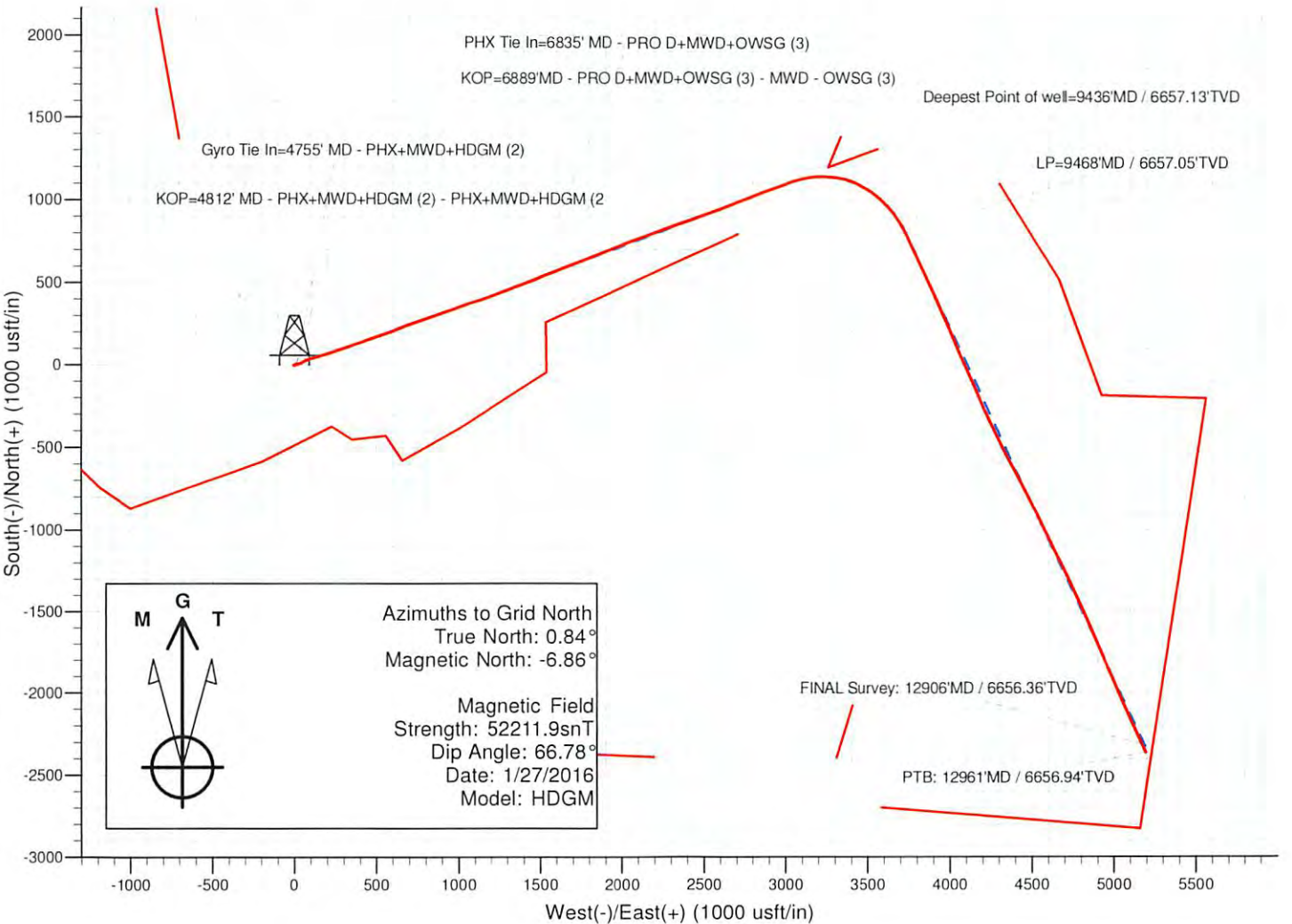
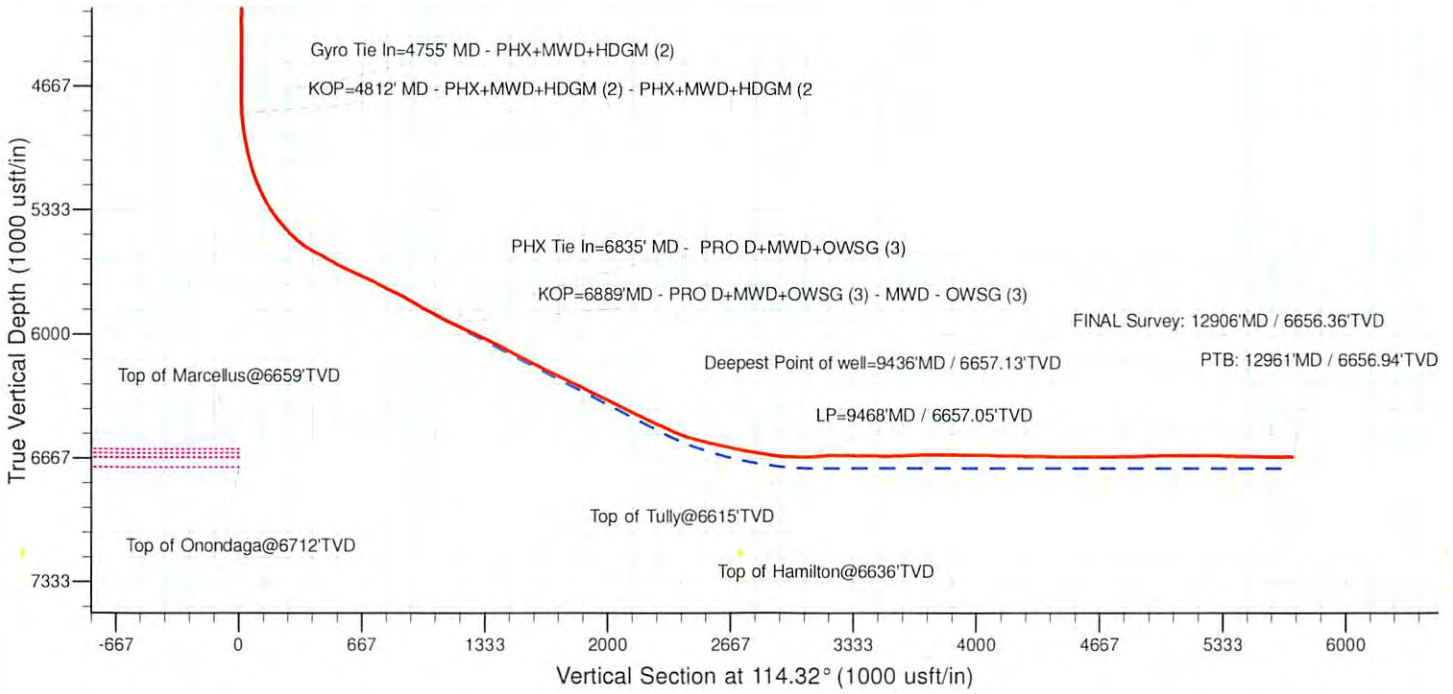


WV Department of
PRO-DIRECTIONAL
Environmental Protection



Where energy meets innovation.

Project: Tyler County, WV
Site: WEU4
Well: Well #516534 -Marcellus
Wellbore: Main Wellbore
Design: 516534 As Drilled Surveys
Elevation: KB@23 @ 1102.00usft





Professional Directional Survey Report



Company: EQT PRODUCTION	Local Co-ordinate Reference: Well Well #516534 -Marcellus - Slot 516534
Project: Tyler County, WV	TVD Reference: KB@23 @ 1102.00usft
Site: WEU4	MD Reference: KB@23 @ 1102.00usft
Well: Well #516534 -Marcellus	North Reference: Grid
Wellbore: Main Wellbore	Survey Calculation Method: Minimum Curvature
Design: 516534 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 #516534 -Marcellus - Slot 516534			
Well Position	+N/-S 0.00 usft	Northing: 318,280.32 usft	Latitude: 39° 21' 58.80 N
	+E/-W 0.00 usft	Easting: 1,626,607.22 usft	Longitude: 80° 49' 14.60 W
Position Uncertainty	0.00 usft	Wellhead Elevation: usft	Ground Level: 1,079.00 usft

Wellbore Main Wellbore					
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	1/27/2016	-7.70	66.78	52,212

Design 516534 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	114.32	

Survey Program Date 3/26/2016					
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
110.00	4,755.00	516534 VES Gyros (Main Wellbore)	VES Spec AVG 04-09-15	Triaxial Continuous Gyro Model	
4,812.00	6,835.00	516534 PHX MWD (Main Wellbore)	PHX+MWD+HDGM	PHX+OWSG MWD + HDGM	
6,889.00	12,961.00	516534 Pro D MWD (Main Wellbore)	MWD - OWSG	MWD - OWSG	

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	0.43	256.46	110.00	-0.10	-0.40	-0.33	0.39	0.39	0.00
210.00	0.44	247.00	210.00	-0.33	-1.12	-0.88	0.07	0.01	-9.46
310.00	0.34	254.60	309.99	-0.56	-1.76	-1.37	0.11	-0.10	7.60
410.00	0.24	139.35	409.99	-0.80	-1.91	-1.41	0.49	-0.10	-115.25
510.00	0.16	138.75	509.99	-1.06	-1.68	-1.09	0.08	-0.08	-0.60
610.00	0.04	171.22	609.99	-1.20	-1.58	-0.95	0.13	-0.12	32.47
710.00	0.10	328.75	709.99	-1.16	-1.62	-1.00	0.14	0.06	157.53
810.00	0.44	82.37	809.99	-1.04	-1.29	-0.75	0.49	0.34	113.62

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Wellbore: Main Wellbore
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Local Co-ordinate Reference: Well Well #516534 -Marcellus - Slot 516534
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)
910.00	0.52	82.23	909.99	-0.93	-0.46	-0.04	0.08	0.08	-0.14
1,010.00	0.56	88.59	1,009.98	-0.85	0.48	0.79	0.07	0.04	6.36
1,110.00	0.47	71.75	1,109.98	-0.71	1.36	1.53	0.18	-0.09	-16.84
1,210.00	0.39	73.67	1,209.98	-0.49	2.08	2.09	0.08	-0.08	1.92
1,310.00	0.40	66.94	1,309.97	-0.26	2.72	2.59	0.05	-0.01	-6.73
1,410.00	0.37	66.26	1,409.97	0.01	3.34	3.04	0.03	-0.03	-0.68
1,510.00	0.47	60.07	1,509.97	0.35	3.99	3.49	0.11	0.10	-6.19
1,610.00	0.61	70.94	1,609.96	0.72	4.85	4.12	0.17	0.14	10.87
1,710.00	0.75	67.72	1,709.96	1.15	5.96	4.96	0.15	0.14	-3.22
1,810.00	0.84	62.89	1,809.95	1.73	7.22	5.86	0.11	0.09	-4.83
1,910.00	0.84	64.45	1,909.94	2.38	8.53	6.79	0.02	0.00	1.56
2,010.00	0.62	68.64	2,009.93	2.89	9.70	7.64	0.23	-0.22	4.19
2,110.00	0.58	64.87	2,109.92	3.30	10.66	8.35	0.06	-0.04	-3.77
2,210.00	0.59	60.74	2,209.92	3.77	11.56	8.99	0.04	0.01	-4.13
2,310.00	0.56	66.19	2,309.91	4.22	12.46	9.62	0.06	-0.03	5.45
2,410.00	0.45	57.22	2,409.91	4.63	13.24	10.16	0.14	-0.11	-8.97
2,510.00	0.31	60.05	2,509.91	4.98	13.80	10.53	0.14	-0.14	2.83
2,610.00	0.30	49.48	2,609.91	5.28	14.24	10.80	0.06	-0.01	-10.57
2,710.00	0.27	45.78	2,709.90	5.62	14.60	11.00	0.04	-0.03	-3.70
2,810.00	0.23	23.50	2,809.90	5.96	14.85	11.08	0.10	-0.04	-22.28
2,910.00	0.32	28.65	2,909.90	6.39	15.07	11.10	0.09	0.09	5.15
3,010.00	0.30	20.11	3,009.90	6.88	15.29	11.10	0.05	-0.02	-8.54
3,110.00	0.18	2.62	3,109.90	7.29	15.39	11.02	0.14	-0.12	-17.49
3,210.00	0.13	320.35	3,209.90	7.53	15.32	10.86	0.12	-0.05	-42.27
3,310.00	0.14	316.72	3,309.90	7.71	15.17	10.65	0.01	0.01	-3.63
3,410.00	0.13	329.71	3,409.90	7.89	15.03	10.44	0.03	-0.01	12.99
3,510.00	0.11	250.50	3,509.90	7.96	14.88	10.28	0.15	-0.02	-79.21
3,610.00	0.21	246.53	3,609.90	7.86	14.62	10.09	0.10	0.10	-3.97
3,710.00	0.20	227.02	3,709.90	7.66	14.32	9.90	0.07	-0.01	-19.51
3,810.00	0.26	195.25	3,809.90	7.33	14.14	9.87	0.14	0.06	-31.77
3,910.00	0.20	186.26	3,909.90	6.93	14.06	9.96	0.07	-0.06	-8.99
4,010.00	0.39	333.25	4,009.90	7.06	13.89	9.74	0.57	0.19	146.99
4,110.00	0.26	315.00	4,109.89	7.53	13.57	9.27	0.16	-0.13	-18.25
4,210.00	0.09	241.87	4,209.89	7.65	13.34	9.01	0.25	-0.17	-73.13
4,310.00	0.31	199.54	4,309.89	7.36	13.18	8.98	0.25	0.22	-42.33
4,410.00	0.39	165.49	4,409.89	6.78	13.18	9.22	0.22	0.08	-34.05
4,510.00	0.47	173.28	4,509.89	6.04	13.31	9.64	0.10	0.08	7.79
4,610.00	0.59	181.84	4,609.88	5.12	13.34	10.05	0.14	0.12	8.56
4,710.00	1.10	187.20	4,709.87	3.65	13.20	10.53	0.52	0.51	5.36
4,755.00	1.40	186.70	4,754.86	2.67	13.09	10.82	0.67	0.67	-1.11
Gyro Tie In=4755' MD - PHX+MWD+HDGM (2)									
4,812.00	3.50	83.00	4,811.82	2.20	14.73	12.52	7.13	3.68	11.93
KOP=4812' MD - PHX+MWD+HDGM (2) - PHX+MWD+HDGM (2)									

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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)
4,854.00	7.90	70.50	4,853.61	3.32	18.73	15.70	10.82	10.48	-29.76
4,897.00	12.10	67.10	4,895.95	6.06	25.67	20.90	9.86	9.77	-7.91
4,941.00	14.70	65.00	4,938.74	10.21	34.98	27.67	6.01	5.91	-4.77
4,984.00	17.20	62.70	4,980.09	15.43	45.57	35.18	6.00	5.81	-5.35
5,027.00	20.80	61.50	5,020.74	22.00	57.94	43.74	8.42	8.37	-2.79
5,070.00	22.30	63.60	5,060.73	29.27	71.96	53.52	3.92	3.49	4.88
5,114.00	22.10	71.10	5,101.48	35.66	87.27	64.84	6.45	-0.45	17.05
5,157.00	24.00	76.10	5,141.05	40.38	103.41	77.61	6.34	4.42	11.63
5,200.00	27.40	74.90	5,179.79	45.06	121.46	92.13	8.00	7.91	-2.79
5,244.00	30.90	74.60	5,218.21	50.70	142.13	108.64	7.96	7.95	-0.68
5,287.00	34.30	73.70	5,254.43	57.04	164.41	126.34	7.99	7.91	-2.09
5,330.00	37.80	72.90	5,289.19	64.31	188.64	145.43	8.21	8.14	-1.86
5,373.00	41.40	72.00	5,322.32	72.58	214.77	165.83	8.48	8.37	-2.09
5,417.00	44.70	71.20	5,354.47	82.07	243.26	187.89	7.60	7.50	-1.82
5,460.00	47.30	71.00	5,384.33	92.09	272.52	210.43	6.06	6.05	-0.47
5,503.00	49.90	70.80	5,412.77	102.64	303.00	233.85	6.06	6.05	-0.47
5,546.00	52.20	70.80	5,439.80	113.64	334.58	258.10	5.35	5.35	0.00
5,589.00	54.80	70.60	5,465.37	125.07	367.20	283.12	6.06	6.05	-0.47
5,632.00	57.20	70.50	5,489.42	136.94	400.81	308.87	5.58	5.58	-0.23
5,675.00	60.90	70.30	5,511.53	149.30	435.54	335.43	8.61	8.60	-0.47
5,717.00	64.20	70.30	5,530.88	161.87	470.63	362.23	7.86	7.86	0.00
5,760.00	67.20	71.00	5,548.58	174.85	507.60	390.57	7.13	6.98	1.63
5,805.00	69.90	70.90	5,565.03	188.52	547.19	421.02	6.00	6.00	-0.22
5,847.00	69.30	70.10	5,579.67	201.66	584.30	449.42	2.29	-1.43	-1.90
5,890.00	68.10	68.90	5,595.29	215.69	621.82	477.84	3.81	-2.79	-2.79
5,933.00	68.00	68.20	5,611.37	230.27	658.94	505.66	1.53	-0.23	-1.63
5,977.00	69.90	69.30	5,627.17	245.15	697.21	534.41	4.91	4.32	2.50
6,020.00	71.20	70.10	5,641.49	259.22	735.24	563.27	3.50	3.02	1.86
6,063.00	71.50	70.20	5,655.24	273.05	773.56	592.50	0.73	0.70	0.23
6,106.00	71.70	71.00	5,668.81	286.60	812.04	621.99	1.83	0.47	1.86
6,149.00	71.80	71.10	5,682.28	299.86	850.67	651.73	0.32	0.23	0.23
6,192.00	71.70	71.30	5,695.74	313.02	889.33	681.54	0.50	-0.23	0.47
6,235.00	71.00	71.20	5,709.49	326.12	927.91	711.30	1.64	-1.63	-0.23
6,275.00	70.10	69.80	5,722.81	338.71	963.46	738.51	3.99	-2.25	-3.50
6,318.00	69.60	69.30	5,737.63	352.81	1,001.28	767.18	1.59	-1.16	-1.16
6,361.00	70.20	70.90	5,752.41	366.56	1,039.25	796.12	3.76	1.40	3.72
6,404.00	71.40	73.00	5,766.55	379.13	1,077.86	826.12	5.39	2.79	4.88
6,448.00	70.70	72.40	5,780.84	391.51	1,117.59	857.23	2.05	-1.59	-1.36
6,492.00	69.50	71.20	5,795.81	404.43	1,156.89	887.73	3.74	-2.73	-2.73
6,535.00	68.60	69.90	5,811.19	417.80	1,194.76	916.73	3.51	-2.09	-3.02
6,578.00	68.10	69.60	5,827.05	431.63	1,232.25	945.20	1.33	-1.16	-0.70
6,621.00	67.90	69.80	5,843.16	445.46	1,269.65	973.58	0.63	-0.47	0.47
6,664.00	68.10	69.30	5,859.27	459.39	1,307.00	1,001.89	1.17	0.47	-1.16
6,707.00	69.00	69.50	5,874.99	473.47	1,344.46	1,030.23	2.14	2.09	0.47

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6,751.00	70.00	69.40	5,890.40	487.94	1,383.05	1,059.44	2.28	2.27	-0.23
6,835.00	69.50	67.84	5,919.48	516.67	1,456.44	1,114.48	1.84	-0.60	-1.86
PHX Tie In=6835' MD - PRO D+MWD+OWSG (3)									
6,889.00	71.70	69.00	5,937.41	535.40	1,503.80	1,149.93	4.55	4.07	2.15
KOP=6889'MD - PRO D+MWD+OWSG (3) - MWD - OWSG (3)									
6,984.00	72.20	68.40	5,966.85	568.21	1,587.95	1,213.10	0.80	0.53	-0.63
7,078.00	72.90	68.20	5,995.04	601.36	1,671.27	1,275.38	0.77	0.74	-0.21
7,172.00	71.30	69.00	6,023.93	634.00	1,754.55	1,337.83	1.88	-1.70	0.85
7,267.00	70.10	68.90	6,055.33	666.21	1,838.23	1,400.82	1.27	-1.26	-0.11
7,361.00	70.00	68.70	6,087.40	698.16	1,920.60	1,462.73	0.23	-0.11	-0.21
7,455.00	70.10	67.90	6,119.47	730.83	2,002.70	1,524.10	0.81	0.11	-0.85
7,550.00	70.60	70.40	6,151.42	762.67	2,086.30	1,587.17	2.53	0.53	2.63
7,644.00	70.80	69.90	6,182.49	792.79	2,169.75	1,650.81	0.55	0.21	-0.53
7,738.00	70.80	71.60	6,213.41	822.06	2,253.55	1,715.13	1.71	0.00	1.81
7,833.00	70.70	70.70	6,244.73	851.04	2,338.43	1,780.54	0.90	-0.11	-0.95
7,927.00	70.60	70.10	6,275.87	880.79	2,421.98	1,844.43	0.61	-0.11	-0.64
8,022.00	70.70	69.90	6,307.35	911.44	2,506.21	1,908.56	0.22	0.11	-0.21
8,116.00	70.70	69.50	6,338.42	942.22	2,589.42	1,971.71	0.40	0.00	-0.43
8,210.00	70.70	69.50	6,369.49	973.29	2,672.51	2,034.65	0.00	0.00	0.00
8,304.00	70.90	69.20	6,400.40	1,004.60	2,755.58	2,097.45	0.37	0.21	-0.32
8,399.00	71.60	68.40	6,430.94	1,037.13	2,839.45	2,160.49	1.09	0.74	-0.84
8,493.00	71.70	70.60	6,460.54	1,068.37	2,923.01	2,223.77	2.22	0.11	2.34
8,556.00	71.90	69.80	6,480.21	1,088.65	2,979.32	2,266.74	1.25	0.32	-1.27
8,587.00	71.90	69.40	6,489.84	1,098.92	3,006.94	2,287.68	1.23	0.00	-1.29
8,619.00	71.30	71.30	6,499.95	1,109.13	3,035.54	2,309.53	5.94	-1.88	5.94
8,650.00	71.00	74.20	6,509.96	1,117.83	3,063.55	2,331.48	8.91	-0.97	9.35
8,682.00	71.40	76.20	6,520.28	1,125.56	3,092.84	2,354.98	6.05	1.25	6.25
8,713.00	71.60	79.30	6,530.12	1,131.80	3,121.56	2,378.59	9.51	0.65	10.00
8,745.00	73.10	82.30	6,539.82	1,136.67	3,151.66	2,404.01	10.09	4.69	9.38
8,776.00	74.60	85.70	6,548.44	1,139.78	3,181.27	2,429.71	11.59	4.84	10.97
8,807.00	75.50	88.90	6,556.44	1,141.19	3,211.18	2,456.39	10.39	2.90	10.32
8,839.00	75.70	92.40	6,564.40	1,140.84	3,242.17	2,484.77	10.61	0.63	10.94
8,870.00	76.30	95.30	6,571.90	1,138.82	3,272.17	2,512.95	9.28	1.94	9.35
8,902.00	77.10	98.30	6,579.27	1,135.13	3,303.09	2,542.64	9.46	2.50	9.38
8,933.00	77.60	101.90	6,586.06	1,129.82	3,332.86	2,571.96	11.45	1.61	11.61
8,965.00	77.90	104.80	6,592.85	1,122.60	3,363.29	2,602.66	8.91	0.94	9.06
8,996.00	77.50	108.90	6,599.46	1,113.83	3,392.27	2,632.68	12.99	-1.29	13.23
9,027.00	77.00	112.50	6,606.30	1,103.14	3,420.55	2,662.85	11.44	-1.61	11.61
9,059.00	77.10	116.60	6,613.47	1,090.19	3,448.91	2,694.03	12.49	0.31	12.81
9,065.93	77.45	117.36	6,615.00	1,087.12	3,454.93	2,700.78	11.90	5.11	11.02
Top of Tully@6615'TVD									
9,090.00	78.70	120.00	6,619.97	1,075.82	3,475.59	2,724.26	11.90	5.18	10.95
9,122.00	80.20	122.40	6,625.83	1,059.52	3,502.49	2,755.49	8.74	4.69	7.50
9,153.00	81.10	126.00	6,630.87	1,042.33	3,527.79	2,785.62	11.82	2.90	11.61

Company: EQT PRODUCTION
Project: Tyler County, WV
Site: WEU4
Well: Well #516534 -Marcellus
Wellbore: Main Wellbore
Design: 516534 As Drilled Surveys

Local Co-ordinate Reference: Well Well #516534 -Marcellus - Slot 516534
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)
9,185.00	81.80	129.20	6,635.63	1,023.03	3,552.86	2,816.41	10.13	2.19	10.00
9,187.58	81.74	129.42	6,636.00	1,021.41	3,554.83	2,818.88	8.60	-2.28	8.37
Top of Hamilton@6636'TVD									
9,216.00	81.10	131.80	6,640.24	1,003.12	3,576.16	2,845.85	8.60	-2.26	8.39
9,248.00	81.00	134.80	6,645.22	981.44	3,599.17	2,875.74	9.27	-0.31	9.38
9,279.00	82.70	137.10	6,649.61	959.39	3,620.50	2,904.26	9.17	5.48	7.42
9,311.00	84.70	139.70	6,653.13	935.61	3,641.61	2,933.29	10.21	6.25	8.13
9,342.00	87.30	143.10	6,655.29	911.44	3,660.90	2,960.82	13.79	8.39	10.97
9,374.00	89.40	146.20	6,656.21	885.36	3,679.40	2,988.42	11.70	6.56	9.69
9,405.00	89.10	149.30	6,656.62	859.14	3,695.94	3,014.29	10.05	-0.97	10.00
9,436.00	89.00	151.60	6,657.13	832.18	3,711.23	3,039.32	7.43	-0.32	7.42
Deepest Point of well=9436'MD / 6657.13'TVD									
9,468.00	91.30	151.90	6,657.05	804.00	3,726.37	3,064.73	7.25	7.19	0.94
LP=9468'MD / 6657.05'TVD									
9,500.00	93.00	152.60	6,655.85	775.70	3,741.26	3,089.95	5.74	5.31	2.19
9,531.00	92.90	155.00	6,654.25	747.92	3,754.93	3,113.84	7.74	-0.32	7.74
9,625.00	92.30	155.30	6,649.99	662.71	3,794.39	3,184.89	0.71	-0.64	0.32
9,720.00	90.20	155.10	6,647.91	576.50	3,834.23	3,256.69	2.22	-2.21	-0.21
9,814.00	89.60	155.10	6,648.08	491.24	3,873.80	3,327.86	0.64	-0.64	0.00
9,908.00	89.40	155.80	6,648.90	405.74	3,912.86	3,398.66	0.77	-0.21	0.74
10,003.00	88.70	155.60	6,650.47	319.17	3,951.95	3,469.93	0.77	-0.74	-0.21
10,097.00	91.40	157.30	6,650.39	233.01	3,989.50	3,539.63	3.39	2.87	1.81
10,191.00	91.50	157.30	6,648.01	146.32	4,025.76	3,608.37	0.11	0.11	0.00
10,286.00	91.00	157.00	6,645.94	58.79	4,062.64	3,678.02	0.61	-0.53	-0.32
10,380.00	90.40	155.30	6,644.79	-27.17	4,100.65	3,748.05	1.92	-0.64	-1.81
10,474.00	89.80	156.30	6,644.63	-112.91	4,139.18	3,818.47	1.24	-0.64	1.06
10,569.00	89.60	156.10	6,645.13	-199.83	4,177.52	3,889.19	0.30	-0.21	-0.21
10,663.00	89.80	154.40	6,645.62	-285.19	4,216.87	3,960.21	1.82	0.21	-1.81
10,758.00	89.10	154.30	6,646.53	-370.82	4,257.99	4,032.94	0.74	-0.74	-0.11
10,852.00	88.60	154.60	6,648.42	-455.61	4,298.52	4,104.79	0.62	-0.53	0.32
10,946.00	89.70	152.70	6,649.81	-539.83	4,340.24	4,177.49	2.34	1.17	-2.02
11,041.00	89.20	150.80	6,650.72	-623.51	4,385.20	4,252.91	2.07	-0.53	-2.00
11,135.00	89.30	152.30	6,651.95	-706.14	4,429.98	4,327.75	1.60	0.11	1.60
11,229.00	89.10	153.30	6,653.27	-789.74	4,472.94	4,401.32	1.08	-0.21	1.06
11,324.00	88.50	152.60	6,655.26	-874.33	4,516.13	4,475.51	0.97	-0.63	-0.74
11,418.00	89.90	154.90	6,656.57	-958.62	4,557.70	4,548.10	2.86	1.49	2.45
11,512.00	90.70	154.70	6,656.08	-1,043.67	4,597.72	4,619.59	0.88	0.85	-0.21
11,606.00	90.20	153.70	6,655.34	-1,128.30	4,638.63	4,691.72	1.19	-0.53	1.06
11,701.00	90.60	154.20	6,654.67	-1,213.64	4,680.35	4,764.88	0.67	0.42	0.53
11,795.00	91.20	155.60	6,653.20	-1,298.75	4,720.22	4,836.26	1.62	0.64	1.49
11,888.00	91.20	154.60	6,651.25	-1,383.09	4,759.36	4,906.66	1.08	0.00	-1.08
11,983.00	91.80	155.90	6,648.76	-1,469.33	4,799.12	4,978.41	1.51	0.63	1.37
12,077.00	90.00	156.50	6,647.29	-1,555.32	4,837.05	5,048.38	2.02	1.91	0.64

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Environmental Protection



Professional Directional Survey Report



Company: EQT PRODUCTION	Local Co-ordinate Reference: Well Well #516534 -Marcellus - Slot 516534
Project: Tyler County, WV	TVD Reference: KB@23 @ 1102.00usft
Site: WEU4	MD Reference: KB@23 @ 1102.00usft
Well: Well #516534 -Marcellus	North Reference: Grid
Wellbore: Main Wellbore	Survey Calculation Method: Minimum Curvature
Design: 516534 As Drilled Surveys	Database: Well_Planner1

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)
12,171.00	90.10	156.80	6,647.20	-1,641.62	4,874.31	5,117.86	0.34	0.11	0.32
12,266.00	89.90	156.90	6,647.20	-1,728.98	4,911.65	5,187.87	0.24	-0.21	0.11
12,359.00	89.40	156.20	6,647.77	-1,814.29	4,948.66	5,256.72	0.92	-0.54	-0.75
12,454.00	89.00	156.10	6,649.10	-1,901.17	4,987.07	5,327.50	0.43	-0.42	-0.11
12,547.00	88.40	156.50	6,651.21	-1,986.30	5,024.44	5,396.61	0.78	-0.65	0.43
12,641.00	90.20	156.60	6,652.36	-2,072.53	5,061.85	5,466.20	1.92	1.91	0.11
12,735.00	88.80	155.60	6,653.18	-2,158.46	5,099.93	5,536.29	1.83	-1.49	-1.06
12,830.00	88.80	154.80	6,655.17	-2,244.68	5,139.76	5,608.10	0.84	0.00	-0.84
12,906.00	89.40	155.30	6,656.36	-2,313.58	5,171.82	5,665.68	1.03	0.79	0.66
FINAL Survey: 12906'MD / 6656.36'TVD									
12,961.00	89.40	155.30	6,656.94	-2,363.55	5,194.80	5,707.20	0.00	0.00	0.00
PTB: 12961'MD / 6656.94'TVD									

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
9,065.93	6,615.00	Top of Tully@6615'TVD		0.00	
9,187.58	6,636.00	Top of Hamilton@6636'TVD		0.00	

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
4,755.00	4,754.86	2.67	13.09	Gyro Tie In=4755' MD - PHX+MWD+HDGM (2)
4,812.00	4,811.82	2.20	14.73	KOP=4812' MD - PHX+MWD+HDGM (2) - PHX+MWD+HDGM (2)
6,835.00	5,919.48	516.67	1,456.44	PHX Tie In=6835' MD - PRO D+MWD+IGRF (3)
6,889.00	5,937.41	535.40	1,503.80	KOP=6889' MD - PRO D+MWD+OWSG (3) - MWD - OWSG (3)
9,436.00	6,657.13	832.18	3,711.23	Deepest Point of well=9436'MD / 6657.13'TVD
9,468.00	6,657.05	804.00	3,726.37	LP=9468'MD / 6657.05'TVD
12,906.00	6,656.36	-2,313.58	5,171.82	FINAL Survey: 12906'MD / 6656.36'TVD
12,961.00	6,656.94	-2,363.55	5,194.80	PTB: 12961'MD / 6656.94'TVD

Checked By: _____	Approved By: _____	Date: _____
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