

**PHOENIX**  
TECHNOLOGY SERVICES



## **EQT Production - Marcellus**

**Wetzel County, WV  
Wetzel County 513916  
Well #513916**

**Main Wellbore**

**Design: 513916 As Drilled Surveys**

## **Standard Survey Report**

**26 May, 2015**

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Where energy meets innovation.



103.03040

PHX  
Survey Report



<b>Database:</b>	EDM 5000.1 Engine User DB	<b>Local Co-ordinate Reference:</b>	Site: Wetzell County 513916
<b>Company:</b>	EQT Production - Marcellus	<b>TVD Reference:</b>	NAD 1927 @ 1485 USFT
<b>Project:</b>	Wetzell County - WV	<b>MD Reference:</b>	KBG 16 @ 1485 USFT
<b>Site:</b>	Wetzell County 513916	<b>North Reference:</b>	Grid
<b>Well:</b>	Well #513916	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Main Wellbore		
<b>Design:</b>	513916 Air Drilled Surveys		

**Project** Wetzell County, WV

<b>Map System:</b>	US State Plane 1927 (Exact solution)	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	NAD 1927 (NADCON CONUS)		
<b>Map Zone:</b>	West Virginia North 4701		Using geodetic scale factor

**Site** Wetzell County 513916

<b>Site Position:</b>		<b>Northing:</b>	376,084.20 usft	<b>Latitude:</b>	39.53
<b>From:</b>	Map	<b>Easting:</b>	1,694,724.30 usft	<b>Longitude:</b>	-80.58
<b>Position Uncertainty:</b>	0.0 usft	<b>Slot Radius:</b>	13-3/16 "	<b>Grid Convergence:</b>	-0.69 "

**Well** Well #513916

<b>Well Position</b>	<b>+N/-S</b>	0.0 usft	<b>Northing:</b>	376,084.20 usft	<b>Latitude:</b>	39° 31' 39.083 N
	<b>+E/-W</b>	0.0 usft	<b>Easting:</b>	1,694,724.30 usft	<b>Longitude:</b>	80° 34' 56.189 W
<b>Position Uncertainty</b>		0.0 usft	<b>Wellhead Elevation:</b>	usft	<b>Ground Level:</b>	1,452.0 usft

**Wellbore** Main Wellbore

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	5/18/2015	-8.32	67.05	52,531

**Design** 513916 Air Drilled Surveys

<b>Audit Notes:</b>					
<b>Version:</b>	1.0	<b>Phase:</b>	ACTUAL	<b>Tie On Depth:</b>	0.0

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Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.0	0.0	0.0	333.37

**Survey Program** Date 5/26/2015

From (')	To (usft)	Survey (Wellbore)	Tool Name	Description
0.00	6,509.0	513916 Gyrodatta Gyros (Main Wellbore)	GYD_DP_MS	Gyrodatta gyro-compassing and drop
0.00	7,490.0	513916 PHX MWD Air Curve (Main Wellbo	PHX+MWD+HDGM	PHX+OWSG MWD + HDGM
0.00	11,940.0	513916 PHX MWD Curve and Lat (Main W	PHX+MWD+HDGM	PHX+OWSG MWD + HDGM

**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	-1,468.0	0.0	0.0	0.0	0.00	0.00	0.00
103.0	0.03	300.78	103.0	-1,365.0	0.0	0.0	0.0	0.03	0.03	0.00
203.0	0.09	81.75	203.0	-1,265.0	0.0	0.0	0.0	0.11	0.06	140.97
303.0	0.06	122.43	303.0	-1,165.0	0.0	0.2	0.0	0.06	-0.03	40.68
403.0	0.04	264.19	403.0	-1,065.0	0.0	0.2	-0.1	0.09	-0.02	141.76
503.0	0.07	280.33	503.0	-965.0	0.0	0.1	0.0	0.03	0.03	16.14
603.0	0.07	155.13	603.0	-865.0	0.0	0.0	-0.1	0.12	0.00	-125.20

<b>Database:</b>	E-M 5000.1 Single Well (to	<b>Local Co-ordinate Reference:</b>	Energy East County & Parish
<b>Company:</b>	EQT Production Services	<b>TVD Reference:</b>	KBG 10.0 (ADT) (usft)
<b>Project:</b>	Wetzel County, WV	<b>MD Reference:</b>	KBG 10.0 (ADT) (usft)
<b>Site:</b>	Wetzel County, 335816	<b>North Reference:</b>	Q101
<b>Well:</b>	Well# C143416	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Main Wellbore		
<b>Design:</b>	3 1/2" ID x 10 1/2" OD x 10 1/2" OD		

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)
703.0	0.07	208.76	703.0	-765.0	-0.2	0.0	-0.2	0.06	0.00	53.63
803.0	0.02	219.20	803.0	-665.0	-0.2	0.0	-0.2	0.05	-0.05	10.44
903.0	0.06	161.04	903.0	-565.0	-0.3	0.0	-0.3	0.05	0.04	-58.16
1,003.0	0.14	169.17	1,003.0	-465.0	-0.5	0.0	-0.4	0.08	0.08	8.13
1,103.0	0.18	173.59	1,103.0	-365.0	-0.7	0.1	-0.7	0.04	0.04	4.42
1,203.0	0.24	165.03	1,203.0	-265.0	-1.1	0.1	-1.0	0.07	0.06	-8.56
1,303.0	0.21	165.06	1,303.0	-165.0	-1.5	0.2	-1.4	0.03	-0.03	0.03
1,403.0	0.23	150.77	1,403.0	-65.0	-1.8	0.4	-1.8	0.06	0.02	-14.29
1,503.0	0.22	169.82	1,503.0	35.0	-2.2	0.5	-2.2	0.08	-0.01	19.05
1,603.0	0.15	193.16	1,603.0	135.0	-2.5	0.5	-2.5	0.10	-0.07	23.34
1,703.0	0.10	184.98	1,703.0	235.0	-2.7	0.5	-2.6	0.05	-0.05	-8.18
1,803.0	0.13	181.29	1,803.0	335.0	-2.9	0.5	-2.8	0.03	0.03	-3.69
1,903.0	0.18	184.81	1,903.0	435.0	-3.2	0.5	-3.1	0.05	0.05	3.52
2,003.0	0.31	171.76	2,003.0	535.0	-3.6	0.5	-3.4	0.14	0.13	-13.05
2,103.0	0.59	174.04	2,103.0	635.0	-4.4	0.6	-4.2	0.28	0.28	2.28
2,203.0	0.77	165.78	2,203.0	735.0	-5.6	0.8	-5.3	0.20	0.18	-8.26
2,303.0	1.19	167.13	2,303.0	835.0	-7.2	1.2	-7.0	0.42	0.42	1.35
2,403.0	1.49	172.19	2,402.9	934.9	-9.5	1.6	-9.2	0.32	0.30	5.06
2,503.0	1.59	176.13	2,502.9	1,034.9	-12.2	1.9	-11.7	0.15	0.10	3.94
2,603.0	1.49	180.33	2,602.9	1,134.9	-14.9	2.0	-14.2	0.15	-0.10	4.20
2,703.0	1.27	182.09	2,702.8	1,234.8	-17.3	1.9	-16.3	0.22	-0.22	1.76
2,803.0	1.13	183.80	2,802.8	1,334.8	-19.4	1.8	-18.1	0.14	-0.14	1.71
2,903.0	0.85	188.99	2,902.8	1,434.8	-21.1	1.6	-19.6	0.29	-0.28	5.19
3,003.0	0.63	206.38	3,002.8	1,534.8	-22.3	1.3	-20.5	0.31	-0.22	17.39
3,103.0	0.58	219.98	3,102.8	1,634.8	-23.2	0.7	-21.0	0.15	-0.05	13.60
3,203.0	0.65	227.53	3,202.8	1,734.8	-24.0	0.0	-21.4	0.11	0.07	7.55
3,303.0	0.60	226.27	3,302.8	1,834.8	-24.7	-0.8	-21.7	0.05	-0.05	-1.26
3,403.0	0.15	261.68	3,402.8	1,934.8	-25.1	-1.3	-21.8	0.49	-0.45	35.41
3,503.0	0.09	114.44	3,502.8	2,034.8	-25.1	-1.4	-21.8	0.23	-0.06	-147.24
3,603.0	0.35	297.29	3,602.8	2,134.8	-25.0	-1.6	-21.7	0.44	0.26	-177.15
3,703.0	0.46	297.84	3,702.8	2,234.8	-24.7	-2.2	-21.1	0.11	0.11	0.55
3,803.0	0.52	298.69	3,802.8	2,334.8	-24.3	-3.0	-20.4	0.06	0.06	0.85
3,903.0	0.42	289.39	3,902.8	2,434.8	-24.0	-3.7	-19.8	0.13	-0.10	-9.30
4,003.0	0.49	290.45	4,002.8	2,534.8	-23.7	-4.5	-19.2	0.07	0.07	1.06
4,103.0	0.61	289.36	4,102.8	2,634.8	-23.4	-5.4	-18.5	0.12	0.12	-1.09
4,203.0	0.43	283.20	4,202.8	2,734.8	-23.1	-6.2	-17.9	0.19	-0.18	-6.16
4,303.0	0.50	287.39	4,302.7	2,834.7	-22.9	-7.0	-17.3	0.08	0.07	4.19
4,403.0	0.49	283.47	4,402.7	2,934.7	-22.7	-7.9	-16.7	0.04	-0.01	-3.92
4,503.0	0.48	280.80	4,502.7	3,034.7	-22.5	-8.7	-16.2	0.02	-0.01	-2.67
4,603.0	0.52	280.97	4,602.7	3,134.7	-22.3	-9.5	-15.7	0.04	0.04	0.17
4,703.0	0.52	277.42	4,702.7	3,234.7	-22.2	-10.4	-15.1	0.03	0.00	-3.55
4,803.0	0.57	281.79	4,802.7	3,334.7	-22.0	-11.4	-14.6	0.06	0.05	4.37
4,903.0	0.57	286.68	4,902.7	3,434.7	-21.8	-12.3	-13.9	0.05	0.00	4.89

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OCT 08 2015

103-03040

<b>Database:</b>	50M-5000-1-1 Single Shot 05	<b>Local Co-ordinate Reference:</b>	Direct Vertical Gravity (VGR) 114
<b>Company:</b>	EQT Production - Meritex	<b>TVD Reference:</b>	KED 15.00 (usft) East
<b>Project:</b>	Wetzel County, WV	<b>MD Reference:</b>	KED 15.00 (usft) East
<b>Site:</b>	Wetzel County, 513910	<b>North Reference:</b>	Grid
<b>Well:</b>	WV-1010918	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Main Wellbore		
<b>Design:</b>	513910 as Drilled Survey		

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)	
5,003.0	0.59	285.76	5,002.7	3,534.7	-21.5	-13.3	-13.2	0.02	0.02	-0.92	
5,103.0	0.53	285.45	5,102.7	3,634.7	-21.2	-14.3	-12.6	0.06	-0.06	-0.31	
5,203.0	0.56	284.64	5,202.7	3,734.7	-21.0	-15.2	-11.9	0.03	0.03	-0.81	
5,303.0	0.64	283.24	5,302.7	3,834.7	-20.7	-16.2	-11.3	0.08	0.08	-1.40	
5,403.0	0.66	285.10	5,402.7	3,934.7	-20.4	-17.3	-10.5	0.03	0.02	1.86	
5,503.0	0.57	301.81	5,502.7	4,034.7	-20.0	-18.3	-9.7	0.20	-0.09	16.71	
5,603.0	0.64	298.63	5,602.7	4,134.7	-19.5	-19.2	-8.8	0.08	0.07	-3.18	
5,703.0	0.69	297.12	5,702.7	4,234.7	-19.0	-20.2	-7.9	0.05	0.05	-1.51	
5,803.0	0.75	294.83	5,802.7	4,334.7	-18.4	-21.3	-6.9	0.07	0.06	-2.29	
5,903.0	0.79	295.69	5,902.7	4,434.7	-17.8	-22.6	-5.8	0.04	0.04	0.86	
6,003.0	0.93	294.84	6,002.7	4,534.7	-17.2	-23.9	-4.7	0.14	0.14	-0.85	
6,103.0	0.95	297.56	6,102.6	4,634.6	-16.5	-25.4	-3.3	0.05	0.02	2.72	
6,203.0	0.64	313.56	6,202.6	4,734.6	-15.7	-26.5	-2.2	0.38	-0.31	16.00	
6,303.0	0.63	338.60	6,302.6	4,834.6	-14.8	-27.1	-1.1	0.28	-0.01	25.04	
6,403.0	0.60	342.33	6,402.6	4,934.6	-13.8	-27.5	0.0	0.05	-0.03	3.73	
6,503.0	0.53	339.53	6,502.6	5,034.6	-12.9	-27.8	1.0	0.08	-0.07	-2.80	
Gyro Tie In=5593 MD											
6,509.0	0.55	341.42	6,508.6	5,040.6	-12.8	-27.8	1.0	0.45	0.33	31.50	
KDP=6E41 MD											
6,541.0	0.79	282.82	6,540.6	5,072.6	-12.6	-28.1	1.3	2.15	0.76	-183.12	
6,584.0	1.60	259.60	6,583.6	5,115.6	-12.7	-29.0	1.7	2.15	1.88	-54.00	
6,628.0	2.20	265.30	6,627.6	5,159.6	-12.8	-30.4	2.2	1.43	1.36	12.95	
6,671.0	4.20	253.30	6,670.5	5,202.5	-13.4	-32.7	2.7	4.88	4.65	-27.91	
6,714.0	9.50	240.30	6,713.2	5,245.2	-15.6	-37.3	2.8	12.76	12.33	-30.28	
6,757.0	15.30	237.70	6,755.2	5,287.2	-20.4	-45.2	2.1	13.55	13.49	-6.05	
6,800.0	19.10	236.60	6,796.2	5,328.2	-27.1	-56.0	0.9	8.86	8.84	2.09	
6,843.0	22.50	240.40	6,836.4	5,368.4	-34.8	-69.2	-0.1	8.04	7.91	4.19	
6,886.0	25.90	241.40	6,875.6	5,407.6	-43.4	-84.6	-0.8	7.96	7.91	2.33	
6,929.0	29.40	243.20	6,913.7	5,445.7	-52.6	-102.3	-1.2	8.37	8.14	4.19	
6,972.0	31.90	247.70	6,950.7	5,482.7	-61.7	-122.2	-0.4	7.89	5.81	10.47	
7,015.0	33.80	252.00	6,986.9	5,518.9	-69.7	-144.1	2.3	6.99	4.42	10.00	
7,058.0	36.40	250.80	7,022.0	5,554.0	-77.6	-167.5	5.7	6.26	6.05	-2.79	
7,101.0	36.40	248.50	7,056.6	5,588.6	-86.5	-191.4	8.5	3.17	0.00	-5.35	
7,144.0	35.20	246.50	7,091.5	5,623.5	-96.1	-214.7	10.3	3.90	-2.79	-4.65	
7,187.0	33.30	244.80	7,127.1	5,659.1	-106.1	-236.7	11.3	4.95	-4.42	-3.95	
7,230.0	33.60	246.10	7,162.9	5,694.9	-115.9	-258.3	12.2	1.81	0.70	3.02	
7,275.0	35.20	250.00	7,200.1	5,732.1	-125.4	-281.9	14.3	6.05	3.56	8.67	
7,318.0	38.20	253.50	7,234.5	5,766.5	-133.4	-306.3	18.0	8.50	6.98	8.14	
7,361.0	40.30	256.30	7,267.8	5,799.8	-140.5	-332.5	23.5	6.39	4.88	6.51	
513912 Top of Part											
7,374.0	40.82	257.75	7,277.7	5,809.7	-142.4	-340.8	25.5	8.33	4.03	11.20	
7,404.0	42.10	261.00	7,300.2	5,832.2	-146.0	-360.3	31.0	8.33	4.25	10.81	
7,447.0	44.80	263.60	7,331.4	5,863.4	-150.0	-389.6	40.6	7.53	6.28	6.05	

Received  
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OCT 08 2015

<b>Database:</b>	EDM 5000.1 Single Beam LP	<b>Local Co-ordinate Reference:</b>	Site: Wayne County, 313818
<b>Company:</b>	EQT Production Services - Marlowe	<b>TVD Reference:</b>	430118 61488 Duct1
<b>Project:</b>	Wayne County, WY	<b>MD Reference:</b>	430118 61488 Duct1
<b>Site:</b>	Wayne County, 313818	<b>North Reference:</b>	Geo
<b>Well:</b>	well #511910	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Main Wellbore		
<b>Design:</b>	313818 24 Drilled Survey		

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)
<b>Plan Tie Line 7480 MD</b>										
7,490.0	47.50	266.80	7,361.2	5,893.2	-152.5	-420.5	52.1	8.26	6.28	7.44
7,536.0	51.10	273.20	7,391.2	5,923.2	-152.5	-455.3	67.8	13.13	7.83	13.91
7,567.0	52.60	277.60	7,410.4	5,942.4	-150.2	-479.6	80.7	12.16	4.84	14.19
<b>413507 Top of Part</b>										
7,592.3	53.53	282.28	7,425.6	5,957.6	-146.7	-499.5	92.8	15.23	3.66	18.50
7,599.0	53.80	283.50	7,429.6	5,961.6	-145.5	-504.7	96.2	15.23	4.11	18.21
7,630.0	54.40	289.80	7,447.7	5,979.7	-138.3	-528.8	113.4	16.57	1.94	20.32
7,662.0	55.10	295.40	7,466.2	5,998.2	-128.2	-552.9	133.2	14.46	2.19	17.50
7,694.0	56.10	299.70	7,484.3	6,016.3	-116.0	-576.3	154.6	11.52	3.13	13.44
7,725.0	56.70	303.20	7,501.5	6,033.5	-102.6	-598.3	176.5	9.60	1.94	11.29
7,757.0	58.20	305.90	7,518.7	6,050.7	-87.3	-620.5	200.1	8.52	4.69	8.44
7,788.0	60.40	307.80	7,534.5	6,066.5	-71.3	-641.8	224.0	8.84	7.10	6.13
7,820.0	63.20	310.10	7,549.6	6,081.6	-53.5	-663.8	249.7	10.80	8.75	7.19
<b>413818 Top of Part</b>										
7,837.8	64.68	311.66	7,557.4	6,089.4	-43.1	-675.8	264.4	11.49	8.35	8.79
7,851.0	65.80	312.80	7,563.0	6,095.0	-35.0	-684.7	275.6	11.49	8.43	8.60
7,883.0	66.70	313.20	7,575.9	6,107.9	-15.0	-706.1	303.1	3.04	2.81	1.25
7,914.0	68.20	315.00	7,587.8	6,119.8	4.9	-726.7	330.1	7.22	4.84	5.81
7,946.0	70.50	318.80	7,599.0	6,131.0	26.7	-747.1	358.8	13.23	7.19	11.88
7,977.0	73.30	322.30	7,608.7	6,140.7	49.5	-765.9	387.5	14.03	9.03	11.29
8,009.0	75.30	324.60	7,617.3	6,149.3	74.2	-784.2	417.9	9.32	6.25	7.19
8,040.0	77.60	326.80	7,624.6	6,156.6	99.1	-801.2	447.7	10.13	7.42	7.10
8,072.0	79.50	330.00	7,631.0	6,163.0	125.8	-817.6	479.0	11.46	5.94	10.00
8,103.0	80.70	333.30	7,636.3	6,168.3	152.7	-832.1	509.5	11.18	3.87	10.65
8,135.0	81.80	335.10	7,641.2	6,173.2	181.2	-845.9	541.1	6.54	3.44	5.63
<b>413818 Flat LP 1</b>										
8,162.9	83.60	337.44	7,644.7	6,176.7	206.6	-857.0	568.8	10.53	6.45	8.39
8,166.0	83.80	337.70	7,645.0	6,177.0	209.4	-858.2	571.8	10.53	6.47	8.36
8,198.0	86.40	340.70	7,647.8	6,179.8	239.2	-869.5	603.5	12.38	8.13	9.38
<b>413818 LP Point 1</b>										
8,202.0	86.63	341.01	7,648.0	6,180.0	242.9	-870.8	607.5	9.67	5.80	7.75
8,229.0	88.20	343.10	7,649.2	6,181.2	268.6	-879.1	634.2	9.67	5.81	7.74
8,261.0	88.90	344.00	7,650.0	6,182.0	299.3	-888.2	665.6	3.56	2.19	2.81
<b>LP Depth: Point of Vert=8292 MD, FE51 TVD</b>										
8,292.0	89.20	343.90	7,650.6	6,182.6	329.1	-896.7	696.1	1.02	0.97	-0.32
8,355.0	91.10	345.60	7,650.4	6,182.4	389.8	-913.3	757.9	4.05	3.02	2.70
8,418.0	91.70	346.30	7,648.9	6,180.9	450.9	-928.6	819.3	1.46	0.95	1.11
8,481.0	90.50	345.80	7,647.6	6,179.6	512.1	-943.8	880.8	2.06	-1.90	-0.79
8,545.0	90.60	345.20	7,647.0	6,179.0	574.0	-959.8	943.4	0.95	0.16	-0.94
8,608.0	91.30	345.30	7,646.0	6,178.0	634.9	-975.9	1,005.0	1.12	1.11	0.16
8,671.0	91.70	345.10	7,644.3	6,176.3	695.8	-991.9	1,066.6	0.71	0.63	-0.32
8,734.0	91.50	344.50	7,642.6	6,174.6	756.6	-1,008.4	1,128.4	1.00	-0.32	-0.95

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<b>Database:</b>	COMPASS 5000 1 Build 73	<b>Local Co-ordinate Reference:</b>	Surveying Gravity 1984NAD
<b>Company:</b>	EQT Production Services	<b>TVD Reference:</b>	North to 2014 Build 73
<b>Project:</b>	Wichita County - N/A	<b>MD Reference:</b>	Wichita County - N/A
<b>Site:</b>	Wichita County - 103040	<b>North Reference:</b>	0921
<b>Well:</b>	Well 103040	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Well 103040		
<b>Design:</b>	103040 - 103040		

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)
8,797.0	90.60	343.90	7,641.4	6,173.4	817.2	-1,025.6	1,190.2	1.72	-1.43	-0.95
8,860.0	91.30	343.80	7,640.4	6,172.4	877.7	-1,043.1	1,252.2	1.12	1.11	-0.16
8,923.0	89.50	343.20	7,639.9	6,171.9	938.1	-1,061.0	1,314.2	3.01	-2.86	-0.95
8,986.0	89.60	342.90	7,640.4	6,172.4	998.4	-1,079.4	1,376.3	0.50	0.16	-0.48
9,049.0	90.00	343.10	7,640.7	6,172.7	1,058.6	-1,097.8	1,438.4	0.71	0.63	0.32
9,112.0	90.60	342.90	7,640.3	6,172.3	1,118.9	-1,116.2	1,500.5	1.00	0.95	-0.32
9,175.0	89.20	343.50	7,640.4	6,172.4	1,179.2	-1,134.4	1,562.6	2.42	-2.22	0.95
9,238.0	89.40	343.80	7,641.2	6,173.2	1,239.6	-1,152.2	1,624.6	0.57	0.32	0.48
9,301.0	90.00	343.50	7,641.5	6,173.5	1,300.1	-1,169.9	1,686.5	1.06	0.95	-0.48
9,365.0	90.80	343.60	7,641.1	6,173.1	1,361.5	-1,188.0	1,749.5	1.26	1.25	0.16
9,428.0	90.10	344.50	7,640.6	6,172.6	1,422.0	-1,205.3	1,811.4	1.81	-1.11	1.43
9,491.0	90.50	344.40	7,640.3	6,172.3	1,482.7	-1,222.2	1,873.3	0.65	0.63	-0.16
9,554.0	88.70	344.60	7,640.7	6,172.7	1,543.4	-1,239.1	1,935.1	2.87	-2.86	0.32
9,617.0	88.50	344.20	7,642.2	6,174.2	1,604.1	-1,256.0	1,996.9	0.71	-0.32	-0.63
9,680.0	89.20	343.80	7,643.5	6,175.5	1,664.6	-1,273.3	2,058.8	1.28	1.11	-0.63
9,744.0	89.90	343.40	7,644.0	6,176.0	1,726.0	-1,291.4	2,121.8	1.26	1.09	-0.63
9,806.0	90.70	342.80	7,643.7	6,175.7	1,785.3	-1,309.4	2,182.9	1.61	1.29	-0.97
9,870.0	91.60	342.40	7,642.4	6,174.4	1,846.4	-1,328.6	2,246.0	1.54	1.41	-0.63
9,932.0	89.80	342.60	7,641.6	6,173.6	1,905.5	-1,347.2	2,307.3	2.92	-2.90	0.32
9,995.0	89.50	341.60	7,642.0	6,174.0	1,965.5	-1,366.6	2,369.5	1.66	-0.48	-1.59
10,059.0	88.80	343.70	7,643.0	6,175.0	2,026.6	-1,385.7	2,432.7	3.46	-1.09	3.28
10,122.0	88.90	343.90	7,644.2	6,176.2	2,087.0	-1,403.2	2,494.6	0.35	0.16	0.32
10,185.0	89.30	343.80	7,645.2	6,177.2	2,147.5	-1,420.8	2,556.6	0.65	0.63	-0.16
10,248.0	90.90	344.40	7,645.1	6,177.1	2,208.1	-1,438.0	2,618.5	2.71	2.54	0.95
10,312.0	93.30	344.20	7,642.8	6,174.8	2,269.7	-1,455.3	2,681.2	3.76	3.75	-0.31
10,375.0	91.90	343.80	7,639.9	6,171.9	2,330.2	-1,472.7	2,743.1	2.31	-2.22	-0.63
10,438.0	92.10	343.10	7,637.7	6,169.7	2,390.5	-1,490.6	2,805.1	1.15	0.32	-1.11
10,501.0	89.80	342.70	7,636.7	6,168.7	2,450.8	-1,509.1	2,867.2	3.71	-3.65	-0.63
10,564.0	89.10	342.10	7,637.3	6,169.3	2,510.8	-1,528.2	2,929.4	1.46	-1.11	-0.95
10,627.0	89.80	341.50	7,637.9	6,169.9	2,570.6	-1,547.8	2,991.7	1.46	1.11	-0.95
10,690.0	90.90	341.50	7,637.5	6,169.5	2,630.4	-1,567.8	3,054.1	1.75	1.75	2.38
10,753.0	90.20	343.00	7,636.9	6,168.9	2,690.4	-1,587.0	3,116.3	2.63	-1.11	2.38
10,816.0	89.90	342.80	7,636.8	6,168.8	2,750.6	-1,605.6	3,178.5	0.57	-0.48	-0.32
10,879.0	90.60	342.90	7,636.6	6,168.6	2,810.8	-1,624.1	3,240.6	1.12	1.11	0.16
10,942.0	90.50	344.80	7,636.0	6,168.0	2,871.3	-1,641.7	3,302.6	3.02	-0.16	3.02
11,006.0	91.10	346.00	7,635.1	6,167.1	2,932.2	-1,657.8	3,365.1	2.10	0.94	1.88
11,069.0	89.10	345.50	7,635.0	6,167.0	2,994.3	-1,673.3	3,426.7	3.27	-3.17	-0.79
11,132.0	89.50	345.30	7,635.7	6,167.7	3,055.2	-1,689.2	3,488.3	0.71	0.63	-0.32
11,195.0	89.50	344.20	7,636.3	6,168.3	3,116.0	-1,705.8	3,550.0	1.75	0.00	-1.75
11,258.0	90.00	344.10	7,636.6	6,168.6	3,176.6	-1,723.0	3,611.9	0.81	0.79	-0.16
11,321.0	90.60	343.60	7,636.2	6,168.2	3,237.1	-1,740.5	3,673.9	1.24	0.95	-0.79
11,384.0	90.80	343.20	7,635.5	6,167.5	3,297.5	-1,758.5	3,735.9	0.71	0.32	-0.63
11,447.0	89.80	343.10	7,635.1	6,167.1	3,357.8	-1,776.7	3,798.0	1.60	-1.59	-0.16

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<b>Database:</b>	EDM 5000.1 Single User Op.	<b>Local Co-ordinate Reference:</b>	Site Wirtzen County 512916
<b>Company:</b>	EQT Production - Marcellus	<b>TVD Reference:</b>	KB3018 @ 7469' Dwell
<b>Project:</b>	Wetzel County, WV	<b>MD Reference:</b>	KB3018 @ 1462' Dwell
<b>Site:</b>	Wirtzen County 512916	<b>North Reference:</b>	One
<b>Well:</b>	Well #013918	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Main Wellbore		
<b>Design:</b>	513918 As Diligent 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)
11,510.0	90.20	343.60	7,635.1	6,167.1	3,418.2	-1,794.8	3,860.0	1.02	0.63	0.79
11,573.0	91.00	343.40	7,634.5	6,166.5	3,478.6	-1,812.7	3,922.1	1.31	1.27	-0.32
11,637.0	91.90	343.50	7,632.8	6,164.8	3,539.9	-1,830.9	3,985.0	1.41	1.41	0.16
11,700.0	89.40	343.30	7,632.1	6,164.1	3,600.3	-1,848.9	4,047.1	3.98	-3.97	-0.32
11,763.0	88.40	342.90	7,633.3	6,165.3	3,660.5	-1,867.2	4,109.2	1.71	-1.59	-0.63
11,826.0	89.20	343.00	7,634.7	6,166.7	3,720.7	-1,885.7	4,171.3	1.28	1.27	0.16
Final Survey=11888' MD/ 7635' TVD										
11,888.0	89.80	343.30	7,635.2	6,167.2	3,780.1	-1,903.7	4,232.4	1.08	0.97	0.48
013918 Plat TD 2										
11,939.1	89.80	343.30	7,635.4	6,167.4	3,829.1	-1,918.3	4,282.7	0.00	0.00	0.00
Projection to TD=11940' MD/ 7635' TVD										
11,940.0	89.80	343.30	7,635.4	6,167.4	3,829.9	-1,918.6	4,283.6	0.00	0.00	0.00

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N-S (usft)	+E-W (usft)	
6,509.0	6,508.6	-12.8	-27.8	Gyro Tie In=6509' MD
6,541.0	6,540.6	-12.6	-28.1	KOP=6541' MD
7,490.0	7,361.2	-152.5	-420.5	Plan Tie In=7490' MD
8,292.0	7,650.6	329.1	-896.7	LP/Deepest Point of Well=8292' MD/ 7651' TVD
11,888.0	7,635.2	3,780.1	-1,903.7	Final Survey=11888' MD/ 7635' TVD
11,940.0	7,635.4	3,829.9	-1,918.6	Projection to TD=11940' MD/ 7635' TVD

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

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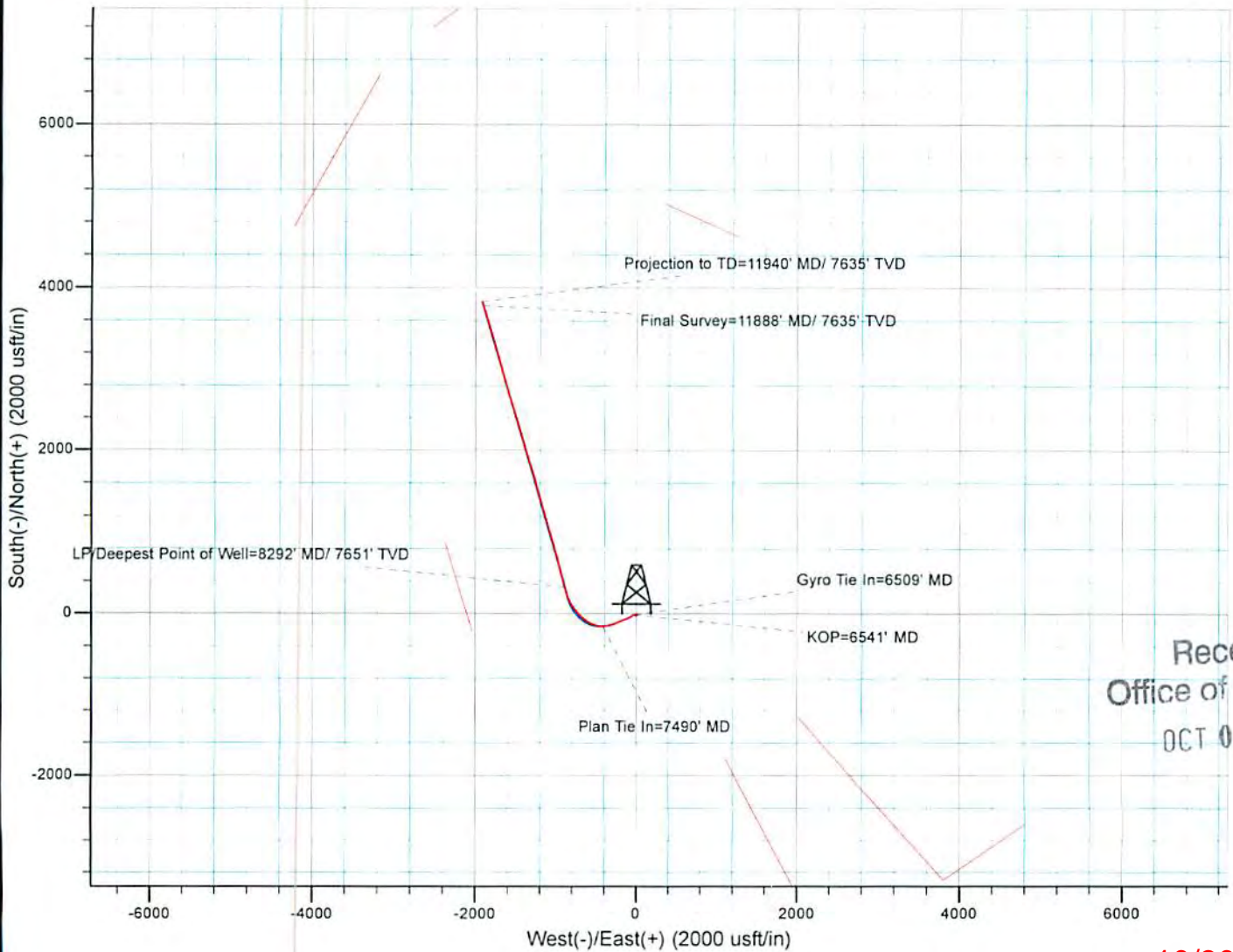
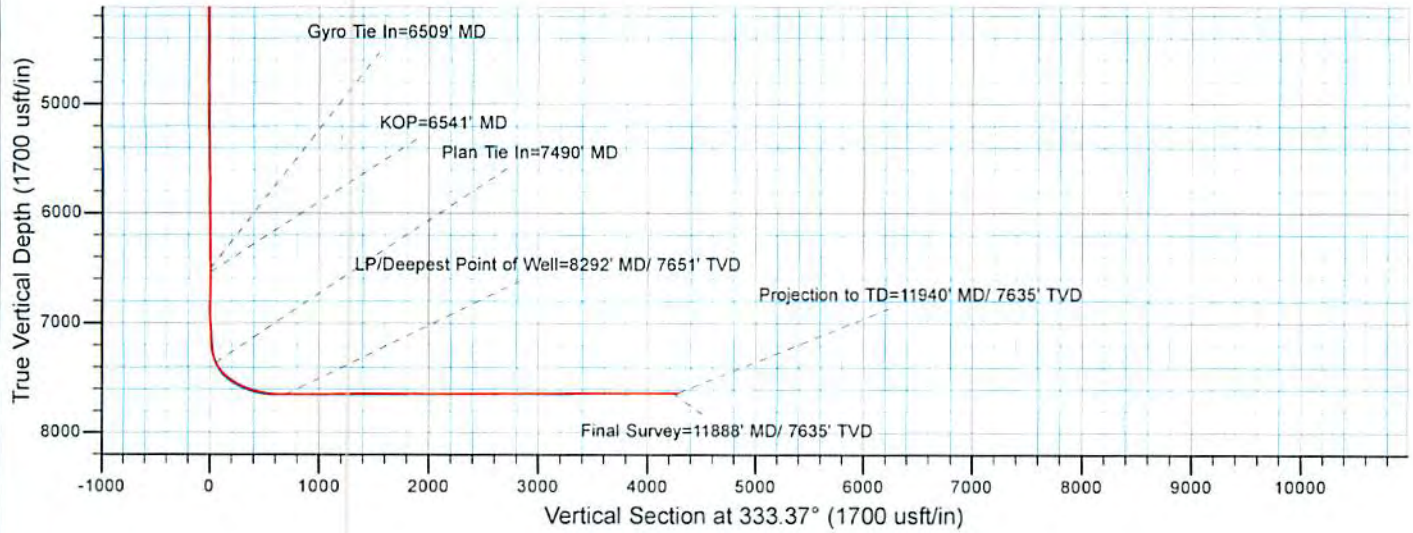
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**PHOENIX**  
TECHNOLOGY SERVICES



# EQT Production - Marcellus

Project: Wetzel County, WV  
Site: Wetzel County 513916  
Well: Well #513916  
Wellbore: Main Wellbore  
Design: 513916 As Drilled Surveys



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