

103-02968

**PHOENIX**  
TECHNOLOGY SERVICES



## **EQT Production - Marcellus**

Wetzel County, WV

Wetzel County 514376

Well #514376

Wellbore #514376

Design: As Drilled Surveys

## **Standard Survey Report**

05 March, 2014

Received  
Office of Oil & Gas

DEC 18 2014



Where energy meets innovation.

01/16/2015

<b>Database:</b>	EDM 5000.1 Single User Db	<b>Local Co-ordinate Reference:</b>	Site Wetzel County 514376
<b>Company:</b>	EQT Production - Marcellus	<b>TVD Reference:</b>	KB @ 1346.0usft
<b>Project:</b>	Wetzel County, WV	<b>MD Reference:</b>	KB @ 1346.0usft
<b>Site:</b>	Wetzel County 514376	<b>North Reference:</b>	Grid
<b>Well:</b>	Well #514376	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #514376		
<b>Design:</b>	As Drilled Surveys		

**Project** Wetzel 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** Wetzel County 514376

<b>Site Position:</b>		<b>Northing:</b>	385,258.00 usft	<b>Latitude:</b>	39.55
<b>From:</b>	Map	<b>Easting:</b>	1,678,297.00 usft	<b>Longitude:</b>	-80.64
<b>Position Uncertainty:</b>	0.0 usft	<b>Slot Radius:</b>	13-3/16 "	<b>Grid Convergence:</b>	-0.73 °

**Well** Well #514376

<b>Well Position</b>	<b>+N/-S</b>	0.0 usft	<b>Northing:</b>	385,258.00 usft	<b>Latitude:</b>	39° 33' 7.739 N
	<b>+E/-W</b>	0.0 usft	<b>Easting:</b>	1,678,297.00 usft	<b>Longitude:</b>	80° 38' 27.313 W
<b>Position Uncertainty</b>		0.0 usft	<b>Wellhead Elevation:</b>	usft	<b>Ground Level:</b>	1,330.0 usft

**Wellbore** Wellbore #514376

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010_14	2/17/2014	-8.62	67.03	52,450

**Design** As Drilled Surveys

<b>Audit Notes:</b>					
<b>Version:</b>	1.0	<b>Phase:</b>	ACTUAL	<b>Tie On Depth:</b>	0.0
<b>Vertical Section:</b>	<b>Depth From (TVD) (usft)</b>	<b>+N/-S (usft)</b>	<b>+E/-W (usft)</b>	<b>Direction (°)</b>	
	0.0	0.0	0.0	2.09	

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**Survey Program** Date 3/5/2014

From (')	To (usft)	Survey (Wellbore)	Tool Name	Description
0.00	4,100.0	514376 Gyrodata Gyro (Wellbore #514376)	GYD_DP_MS	Gyrodata gyro-compassing and drop
0.00	11,120.0	514376 PHX MWD (Wellbore #514376)	MWD	MWD - Standard

**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	-1,346.0	0.0	0.0	0.0	0.00	0.00	0.00
120.0	0.47	205.99	120.0	-1,226.0	-0.4	-0.2	-0.4	0.39	0.39	0.00
220.0	0.44	203.38	220.0	-1,126.0	-1.2	-0.5	-1.2	0.04	-0.03	-2.61
320.0	0.44	203.71	320.0	-1,026.0	-1.9	-0.9	-1.9	0.00	0.00	0.33
420.0	0.46	208.47	420.0	-926.0	-2.6	-1.2	-2.6	0.04	0.02	4.76
520.0	0.46	203.12	520.0	-826.0	-3.3	-1.5	-3.3	0.04	0.00	-5.35
620.0	0.48	205.98	620.0	-726.0	-4.0	-1.9	-4.1	0.03	0.02	2.86
720.0	0.49	210.26	720.0	-626.0	-4.8	-2.3	-4.9	0.04	0.01	4.28

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<b>Project:</b>	Wetzel County, WV	<b>MD Reference:</b>	KB @ 1346.0usft
<b>Site:</b>	Wetzel County 514376	<b>North Reference:</b>	Grid
<b>Well:</b>	Well #514376	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #514376		
<b>Design:</b>	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)	
820.0	0.50	226.47	820.0	-526.0	-5.5	-2.8	-5.6	0.14	0.01	16.21	
920.0	0.39	220.63	920.0	-426.0	-6.0	-3.4	-6.1	0.12	-0.11	-5.84	
1,020.0	0.38	223.06	1,020.0	-326.0	-6.5	-3.8	-6.6	0.02	-0.01	2.43	
1,120.0	0.40	219.39	1,120.0	-226.0	-7.0	-4.3	-7.2	0.03	0.02	-3.67	
1,220.0	0.39	201.55	1,220.0	-126.0	-7.6	-4.6	-7.8	0.12	-0.01	-17.84	
1,320.0	0.39	201.08	1,320.0	-26.0	-8.2	-4.8	-8.4	0.00	0.00	-0.47	
1,420.0	0.45	185.63	1,420.0	74.0	-9.0	-5.0	-9.1	0.13	0.06	-15.45	
1,520.0	0.44	151.16	1,520.0	174.0	-9.7	-4.9	-9.9	0.26	-0.01	-34.47	
1,620.0	0.44	148.78	1,620.0	274.0	-10.3	-4.5	-10.5	0.02	0.00	-2.38	
1,720.0	0.48	151.66	1,720.0	374.0	-11.0	-4.1	-11.2	0.05	0.04	2.88	
1,820.0	0.48	153.48	1,819.9	473.9	-11.8	-3.7	-11.9	0.02	0.00	1.82	
1,920.0	0.51	142.35	1,919.9	573.9	-12.5	-3.2	-12.6	0.10	0.03	-11.13	
2,020.0	0.56	145.44	2,019.9	673.9	-13.3	-2.7	-13.4	0.06	0.05	3.09	
2,120.0	0.58	134.85	2,119.9	773.9	-14.0	-2.1	-14.1	0.11	0.02	-10.59	
2,220.0	0.46	133.41	2,219.9	873.9	-14.7	-1.4	-14.7	0.12	-0.12	-1.44	
2,320.0	0.40	131.85	2,319.9	973.9	-15.2	-0.8	-15.2	0.06	-0.06	-1.56	
2,420.0	0.42	130.67	2,419.9	1,073.9	-15.6	-0.3	-15.6	0.02	0.02	-1.18	
2,520.0	0.39	137.30	2,519.9	1,173.9	-16.1	0.2	-16.1	0.06	-0.03	6.63	
2,620.0	0.23	132.88	2,619.9	1,273.9	-16.5	0.6	-16.5	0.16	-0.16	-4.42	
2,720.0	0.17	157.90	2,719.9	1,373.9	-16.8	0.8	-16.8	0.10	-0.06	25.02	
2,820.0	0.11	158.82	2,819.9	1,473.9	-17.0	0.9	-17.0	0.06	-0.06	0.92	
2,920.0	0.09	152.70	2,919.9	1,573.9	-17.2	0.9	-17.1	0.02	-0.02	-6.12	
3,020.0	0.10	153.45	3,019.9	1,673.9	-17.3	1.0	-17.3	0.01	0.01	0.75	
3,120.0	0.17	148.06	3,119.9	1,773.9	-17.5	1.1	-17.5	0.07	0.07	-5.39	
3,220.0	0.06	150.43	3,219.9	1,873.9	-17.7	1.2	-17.6	0.11	-0.11	2.37	
3,320.0	0.06	124.14	3,319.9	1,973.9	-17.8	1.3	-17.7	0.03	0.00	-26.29	
3,420.0	0.09	146.39	3,419.9	2,073.9	-17.9	1.4	-17.8	0.04	0.03	22.25	
3,520.0	0.18	128.84	3,519.9	2,173.9	-18.0	1.6	-18.0	0.10	0.09	-17.55	
3,620.0	0.24	112.59	3,619.9	2,273.9	-18.2	1.9	-18.1	0.08	0.06	-16.25	
3,720.0	0.29	106.05	3,719.9	2,373.9	-18.4	2.3	-18.3	0.06	0.05	-6.54	
3,820.0	0.19	101.35	3,819.9	2,473.9	-18.5	2.7	-18.4	0.10	-0.10	-4.70	
3,920.0	0.10	85.62	3,919.9	2,573.9	-18.5	3.0	-18.4	0.10	-0.09	-15.73	
4,020.0	0.07	105.84	4,019.9	2,673.9	-18.5	3.1	-18.4	0.04	-0.03	20.22	
<b>Gyro Tie In MD=4100'</b>											
4,100.0	0.16	51.41	4,099.9	2,753.9	-18.4	3.2	-18.3	0.17	0.11	-68.04	
4,134.0	0.30	39.20	4,133.9	2,787.9	-18.3	3.3	-18.2	0.43	0.41	-35.91	
4,166.0	2.70	96.40	4,165.9	2,819.9	-18.4	4.1	-18.2	7.97	7.50	178.75	
4,197.0	7.30	97.50	4,196.8	2,850.8	-18.7	6.8	-18.4	14.84	14.84	3.55	
4,229.0	11.30	95.60	4,228.4	2,882.4	-19.3	12.0	-18.8	12.54	12.50	-5.94	
4,261.0	12.40	82.70	4,259.7	2,913.7	-19.1	18.5	-18.5	8.94	3.44	-40.31	
4,293.0	14.10	70.60	4,290.8	2,944.8	-17.4	25.6	-16.5	10.14	5.31	-37.81	
4,324.0	16.10	62.60	4,320.8	2,974.8	-14.2	33.0	-13.0	9.30	6.45	-25.81	
4,356.0	17.50	60.00	4,351.4	3,005.4	-9.7	41.1	-8.2	4.96	4.38	-8.13	

*Original Received*



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# Phoenix Technology Services

Survey Report



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<b>Wellbore:</b>	Wellbore #514376		
<b>Design:</b>	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)
4,388.0	18.00	56.70	4,381.9	3,035.9	-4.6	49.4	-2.8	3.51	1.56	-10.31
4,419.0	19.10	51.30	4,411.3	3,065.3	1.2	57.3	3.3	6.58	3.55	-17.42
4,451.0	20.90	45.00	4,441.3	3,095.3	8.5	65.4	10.9	8.77	5.63	-19.69
4,482.0	23.30	40.60	4,470.1	3,124.1	17.1	73.3	19.7	9.40	7.74	-14.19
4,513.0	26.20	39.80	4,498.2	3,152.2	27.0	81.7	29.9	9.42	9.35	-2.58
4,545.0	29.70	38.40	4,526.5	3,180.5	38.6	91.2	41.9	11.13	10.94	-4.38
4,576.0	33.40	36.60	4,552.9	3,206.9	51.5	101.0	55.2	12.31	11.94	-5.81
4,608.0	37.20	36.30	4,579.0	3,233.0	66.4	112.0	70.4	11.89	11.88	-0.94
4,640.0	40.60	36.70	4,603.9	3,257.9	82.5	124.0	87.0	10.65	10.63	1.25
4,703.0	41.70	36.10	4,651.3	3,305.3	115.9	148.6	121.2	1.86	1.75	-0.95
4,766.0	42.50	36.30	4,698.1	3,352.1	150.0	173.5	156.2	1.29	1.27	0.32
4,830.0	43.30	37.50	4,745.0	3,399.0	184.8	199.7	192.0	1.79	1.25	1.88
4,893.0	41.90	36.50	4,791.3	3,445.3	218.9	225.3	226.9	2.47	-2.22	-1.59
4,956.0	41.80	36.80	4,838.3	3,492.3	252.6	250.4	261.6	0.36	-0.16	0.48
5,020.0	43.10	37.60	4,885.5	3,539.5	287.0	276.5	296.9	2.20	2.03	1.25
5,083.0	42.30	36.10	4,931.8	3,585.8	321.2	302.2	332.0	2.05	-1.27	-2.38
5,147.0	41.50	34.90	4,979.4	3,633.4	356.0	327.0	367.7	1.77	-1.25	-1.88
5,210.0	42.00	35.90	5,026.4	3,680.4	390.2	351.3	402.7	1.32	0.79	1.59
5,273.0	44.40	39.70	5,072.4	3,726.4	424.2	377.7	437.7	5.62	3.81	6.03
5,336.0	43.70	38.60	5,117.6	3,771.6	458.2	405.4	472.7	1.65	-1.11	-1.75
5,400.0	42.50	37.40	5,164.4	3,818.4	492.6	432.3	508.1	2.27	-1.88	-1.88
5,463.0	41.10	36.40	5,211.3	3,865.3	526.2	457.5	542.6	2.46	-2.22	-1.59
5,526.0	41.70	37.30	5,258.6	3,912.6	559.5	482.5	576.8	1.34	0.95	1.43
5,590.0	42.40	39.80	5,306.1	3,960.1	593.0	509.2	611.2	2.84	1.09	3.91
5,653.0	41.00	37.80	5,353.1	4,007.1	625.7	535.5	644.8	3.07	-2.22	-3.17
5,716.0	39.20	35.10	5,401.3	4,055.3	658.3	559.6	678.3	3.97	-2.86	-4.29
5,779.0	38.80	37.50	5,450.3	4,104.3	690.3	583.1	711.1	2.48	-0.63	3.81
5,842.0	39.70	38.80	5,499.1	4,153.1	721.6	607.7	743.3	1.94	1.43	2.06
5,905.0	40.30	38.30	5,547.4	4,201.4	753.3	632.9	775.9	1.08	0.95	-0.79
5,969.0	40.90	39.10	5,595.9	4,249.9	785.8	659.0	809.3	1.24	0.94	1.25
6,032.0	39.10	37.10	5,644.2	4,298.2	817.6	684.0	842.1	3.51	-2.86	-3.17
6,095.0	39.50	37.60	5,693.0	4,347.0	849.4	708.2	874.7	0.81	0.63	0.79
6,158.0	41.20	38.50	5,741.0	4,395.0	881.5	733.3	907.7	2.85	2.70	1.43
6,221.0	39.70	36.80	5,788.9	4,442.9	913.8	758.3	940.9	2.96	-2.38	-2.70
6,285.0	40.10	35.90	5,838.0	4,492.0	946.9	782.6	974.8	1.10	0.63	-1.41
6,348.0	43.50	37.00	5,885.0	4,539.0	980.6	807.6	1,009.5	5.52	5.40	1.75
6,412.0	42.20	34.60	5,931.9	4,585.9	1,015.9	833.1	1,045.7	3.26	-2.03	-3.75
6,475.0	42.10	36.10	5,978.6	4,632.6	1,050.4	857.5	1,081.0	1.61	-0.16	2.38
6,538.0	44.50	40.50	6,024.5	4,678.5	1,084.3	884.3	1,115.9	6.12	3.81	6.98
6,602.0	43.40	38.80	6,070.5	4,724.5	1,118.5	912.6	1,151.1	2.52	-1.72	-2.66
6,665.0	41.60	37.20	6,117.0	4,771.0	1,152.0	938.9	1,185.5	3.33	-2.86	-2.54
6,728.0	39.60	35.90	6,164.8	4,818.8	1,184.9	963.3	1,219.3	3.45	-3.17	-2.06

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Survey

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6,791.0	39.40	34.80	6,213.4	4,867.4	1,217.6	986.5	1,252.8	1.16	-0.32	-1.75
6,855.0	41.60	38.00	6,262.1	4,916.1	1,251.0	1,011.1	1,287.1	4.73	3.44	5.00
6,918.0	39.80	34.80	6,309.9	4,963.9	1,284.1	1,035.5	1,321.1	4.37	-2.86	-5.08
6,981.0	39.30	35.00	6,358.4	5,012.4	1,317.0	1,058.5	1,354.8	0.82	-0.79	0.32
7,045.0	41.10	39.00	6,407.3	5,061.3	1,349.9	1,083.4	1,388.6	4.92	2.81	6.25
7,108.0	41.40	36.60	6,454.7	5,108.7	1,382.8	1,108.8	1,422.4	2.56	0.48	-3.81
7,171.0	42.60	36.10	6,501.5	5,155.5	1,416.7	1,133.8	1,457.2	1.98	1.90	-0.79
7,234.0	40.80	34.70	6,548.6	5,202.6	1,450.9	1,158.1	1,492.2	3.22	-2.86	-2.22
7,297.0	41.10	36.10	6,596.1	5,250.1	1,484.5	1,182.0	1,526.7	1.53	0.48	2.22
7,361.0	41.20	37.20	6,644.3	5,298.3	1,518.3	1,207.1	1,561.4	1.14	0.16	1.72
7,424.0	41.80	37.30	6,691.5	5,345.5	1,551.5	1,232.4	1,595.5	0.96	0.95	0.16
7,487.0	42.30	37.20	6,738.3	5,392.3	1,585.1	1,257.9	1,630.0	0.80	0.79	-0.16
7,550.0	40.90	35.30	6,785.4	5,439.4	1,618.9	1,282.7	1,664.6	2.99	-2.22	-3.02
7,614.0	40.90	36.70	6,833.8	5,487.8	1,652.8	1,307.3	1,699.4	1.43	0.00	2.19
7,677.0	40.50	38.30	6,881.5	5,535.5	1,685.3	1,332.3	1,732.9	1.77	-0.63	2.54
7,740.0	40.10	37.30	6,929.6	5,583.6	1,717.5	1,357.3	1,766.0	1.21	-0.63	-1.59
7,772.0	39.70	37.40	6,954.1	5,608.1	1,733.9	1,369.7	1,782.7	1.27	-1.25	0.31
7,803.0	40.20	34.30	6,977.9	5,631.9	1,750.0	1,381.4	1,799.3	6.62	1.61	-10.00
7,835.0	41.80	31.10	7,002.1	5,656.1	1,767.7	1,392.7	1,817.4	8.25	5.00	-10.00
7,867.0	41.90	28.70	7,025.9	5,679.9	1,786.2	1,403.4	1,836.2	5.01	0.31	-7.50
7,898.0	43.40	24.10	7,048.7	5,702.7	1,805.0	1,412.7	1,855.4	11.15	4.84	-14.84
7,930.0	45.00	20.00	7,071.7	5,725.7	1,825.6	1,421.0	1,876.3	10.23	5.00	-12.81
7,961.0	47.60	17.30	7,093.1	5,747.1	1,846.9	1,428.2	1,897.8	10.49	8.39	-8.71
7,993.0	49.50	15.50	7,114.3	5,768.3	1,869.9	1,435.0	1,921.1	7.28	5.94	-5.63
8,025.0	51.60	11.50	7,134.6	5,788.6	1,893.9	1,440.7	1,945.3	11.67	6.56	-12.50
8,056.0	53.70	8.50	7,153.4	5,807.4	1,918.2	1,445.0	1,969.7	10.25	6.77	-9.68
8,088.0	55.70	5.10	7,171.9	5,825.9	1,944.1	1,448.1	1,995.7	10.69	6.25	-10.63
8,119.0	57.60	3.30	7,188.9	5,842.9	1,969.9	1,450.0	2,021.6	7.82	6.13	-5.81
8,151.0	59.60	1.40	7,205.6	5,859.6	1,997.2	1,451.1	2,048.9	8.05	6.25	-5.94
8,183.0	61.20	359.80	7,221.4	5,875.4	2,025.0	1,451.4	2,076.7	6.63	5.00	-5.00
8,214.0	63.10	357.70	7,235.9	5,889.9	2,052.4	1,450.8	2,104.0	8.57	6.13	-6.77
8,246.0	65.00	354.80	7,249.9	5,903.9	2,081.1	1,448.9	2,132.7	10.08	5.94	-9.06
8,278.0	66.90	351.30	7,262.9	5,916.9	2,110.1	1,445.3	2,161.5	11.62	5.94	-10.94
8,309.0	69.20	349.00	7,274.5	5,928.5	2,138.4	1,440.4	2,189.6	10.12	7.42	-7.42
8,341.0	71.70	348.60	7,285.2	5,939.2	2,168.0	1,434.6	2,219.0	7.90	7.81	-1.25
8,372.0	74.00	347.50	7,294.4	5,948.4	2,197.0	1,428.4	2,247.7	8.16	7.42	-3.55
8,404.0	76.40	345.20	7,302.6	5,956.6	2,227.1	1,421.1	2,277.5	10.22	7.50	-7.19
8,436.0	78.80	344.40	7,309.4	5,963.4	2,257.2	1,412.9	2,307.3	7.89	7.50	-2.50
<b>514376 Plat LP</b>										
8,447.9	79.38	343.67	7,311.7	5,965.7	2,268.5	1,409.7	2,318.5	7.73	4.83	-6.15
8,467.0	80.30	342.50	7,315.0	5,969.0	2,286.4	1,404.2	2,336.2	7.73	4.85	-6.12
8,499.0	81.90	340.20	7,320.0	5,974.0	2,316.4	1,394.1	2,365.8	8.68	5.00	-7.19
8,530.0	83.30	336.30	7,324.0	5,978.0	2,344.9	1,382.7	2,393.9	13.27	4.52	-12.58



103-02 968

Phoenix Technology Services  
Survey Report



<b>Database:</b>	EDM 5000.1 Single User Db	<b>Local Co-ordinate Reference:</b>	Site Wetzel County 514376
<b>Company:</b>	EQT Production - Marcellus	<b>TVD Reference:</b>	KB @ 1346.0usft
<b>Project:</b>	Wetzel County, WV	<b>MD Reference:</b>	KB @ 1346.0usft
<b>Site:</b>	Wetzel County 514376	<b>North Reference:</b>	Grid
<b>Well:</b>	Well #514376	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #514376		
<b>Design:</b>	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)
8,562.0	84.70	333.20	7,327.3	5,981.3	2,373.7	1,369.2	2,422.2	10.58	4.38	-9.69
<b>514376 LP 2425' VS</b>										
8,568.0	85.20	332.88	7,327.9	5,981.9	2,379.0	1,366.5	2,427.4	9.83	8.27	-5.34
8,626.0	90.00	329.80	7,330.3	5,984.3	2,429.9	1,338.7	2,477.2	9.83	8.28	-5.31
8,689.0	92.20	330.50	7,329.1	5,983.1	2,484.5	1,307.3	2,530.6	3.66	3.49	1.11
8,752.0	91.30	331.00	7,327.2	5,981.2	2,539.4	1,276.5	2,584.4	1.63	-1.43	0.79
8,816.0	90.90	331.40	7,325.9	5,979.9	2,595.5	1,245.7	2,639.3	0.88	-0.63	0.63
8,879.0	88.90	330.90	7,326.0	5,980.0	2,650.7	1,215.3	2,693.3	3.27	-3.17	-0.79
8,942.0	88.50	331.30	7,327.5	5,981.5	2,705.8	1,184.9	2,747.3	0.90	-0.63	0.63
9,006.0	88.80	331.50	7,329.0	5,983.0	2,762.0	1,154.3	2,802.3	0.56	0.47	0.31
9,069.0	89.10	331.30	7,330.1	5,984.1	2,817.3	1,124.1	2,856.5	0.57	0.48	-0.32
9,132.0	89.40	331.80	7,331.0	5,985.0	2,872.7	1,094.1	2,910.7	0.93	0.48	0.79
9,196.0	89.70	331.70	7,331.5	5,985.5	2,929.1	1,063.8	2,966.0	0.49	0.47	-0.16
9,259.0	89.60	331.20	7,331.9	5,985.9	2,984.4	1,033.7	3,020.2	0.81	-0.16	-0.79
9,322.0	91.50	330.90	7,331.2	5,985.2	3,039.5	1,003.2	3,074.2	3.05	3.02	-0.48
9,386.0	92.30	331.70	7,329.1	5,983.1	3,095.6	972.5	3,129.1	1.77	1.25	1.25
9,449.0	93.00	331.40	7,326.2	5,980.2	3,151.0	942.5	3,183.3	1.21	1.11	-0.48
9,512.0	92.00	331.40	7,323.5	5,977.5	3,206.2	912.4	3,237.4	1.59	-1.59	0.00
9,575.0	89.90	332.30	7,322.4	5,976.4	3,261.8	882.7	3,291.8	3.63	-3.33	1.43
9,638.0	89.60	332.50	7,322.7	5,976.7	3,317.6	853.5	3,346.6	0.57	-0.48	0.32
9,702.0	89.50	331.50	7,323.2	5,977.2	3,374.1	823.4	3,401.9	1.57	-0.16	-1.56
9,765.0	89.80	331.40	7,323.6	5,977.6	3,429.4	793.3	3,456.1	0.50	0.48	-0.16
9,828.0	90.30	331.40	7,323.5	5,977.5	3,484.8	763.2	3,510.3	0.79	0.79	0.00
9,891.0	89.80	333.00	7,323.5	5,977.5	3,540.5	733.8	3,564.9	2.66	-0.79	2.54
9,954.0	89.70	333.20	7,323.7	5,977.7	3,596.7	705.3	3,620.0	0.35	-0.16	0.32
10,018.0	90.10	333.10	7,323.9	5,977.9	3,653.8	676.4	3,676.0	0.64	0.63	-0.16
10,081.0	90.90	332.30	7,323.3	5,977.3	3,709.7	647.5	3,730.9	1.80	1.27	-1.27
10,144.0	90.40	331.50	7,322.6	5,976.6	3,765.3	617.8	3,785.4	1.50	-0.79	-1.27
10,208.0	90.50	331.60	7,322.1	5,976.1	3,821.6	587.3	3,840.5	0.22	0.16	0.16
10,271.0	91.30	331.50	7,321.1	5,975.1	3,877.0	557.3	3,894.7	1.28	1.27	-0.16
10,335.0	90.60	331.50	7,320.0	5,974.0	3,933.2	526.8	3,949.8	1.09	-1.09	0.00
10,398.0	90.10	331.40	7,319.7	5,973.7	3,988.5	496.7	4,004.0	0.81	-0.79	-0.16
10,461.0	89.50	332.00	7,319.9	5,973.9	4,044.0	466.8	4,058.4	1.35	-0.95	0.95
10,525.0	89.10	332.10	7,320.7	5,974.7	4,100.5	436.8	4,113.8	0.64	-0.63	0.16
10,588.0	89.40	332.10	7,321.5	5,975.5	4,156.2	407.3	4,168.3	0.48	0.48	0.00
10,652.0	90.10	332.50	7,321.8	5,975.8	4,212.9	377.6	4,223.9	1.26	1.09	0.63
10,715.0	90.30	331.50	7,321.5	5,975.5	4,268.5	348.0	4,278.4	1.62	0.32	-1.59
10,779.0	90.20	331.30	7,321.3	5,975.3	4,324.7	317.4	4,333.4	0.35	-0.16	-0.31
10,842.0	90.60	330.60	7,320.8	5,974.8	4,379.8	286.8	4,387.3	1.28	0.63	-0.16
10,905.0	90.90	331.50	7,320.0	5,974.0	4,434.9	256.3	4,441.3	1.51	0.48	1.43
10,968.0	90.90	331.50	7,319.0	5,973.0	4,490.2	226.2	4,495.5	0.00	0.00	0.00
11,031.0	91.30	331.50	7,317.8	5,971.8	4,545.6	196.2	4,549.7	0.63	0.63	0.00

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DEC 18 2014



103-02968

# Phoenix Technology Services

Survey Report



<b>Database:</b>	EDM 5000.1 Single User Db	<b>Local Co-ordinate Reference:</b>	Site Wetzel County 514376
<b>Company:</b>	EQT Production - Marcellus	<b>TVD Reference:</b>	KB @ 1346.0usft
<b>Project:</b>	Wetzel County, WV	<b>MD Reference:</b>	KB @ 1346.0usft
<b>Site:</b>	Wetzel County 514376	<b>North Reference:</b>	Grid
<b>Well:</b>	Well #514376	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #514376		
<b>Design:</b>	As Drilled 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)
<b>Last Survey MD=11064'</b>										
11,064.0	91.50	331.20	7,317.0	5,971.0	4,574.6	180.4	4,578.1	1.09	0.61	-0.91
<b>514376 Plat TD</b>										
11,112.3	91.50	331.20	7,315.7	5,969.7	4,616.8	157.1	4,619.5	0.00	0.00	0.00
<b>Projection to TD MD=11120'</b>										
11,120.0	91.50	331.20	7,315.5	5,969.5	4,623.6	153.4	4,626.1	0.00	0.00	0.00

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
4,100.0	4,099.9	-18.4	3.2	Gyro Tie In MD=4100'
11,064.0	7,317.0	4,574.6	180.4	Last Survey MD=11064'
11,120.0	7,315.5	4,623.6	153.4	Projection to TD MD=11120'

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

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Office of Oil & Gas  
DEC 18 2014



# EQT Production - Marcellus

Project: Wetzel County, WV  
Site: Wetzel County 514376  
Well: Well #514376  
Wellbore: Wellbore #514376  
Design: As Drilled Surveys

