



EQT Production - Marcellus

Wetzel County, WV
Wetzel County 514566
Well #514566
API #47-103-02940
514566 ST01

Design: 514566 ST01 As Drilled Surveys

Standard Survey Report

06 July, 2014



Phoenix Technology Services
Survey Report



Table with 3 columns: Database/Company/Project/Site/Well/Wellbore/Design; Local Co-ordinate Reference; TVD Reference; MD Reference; North Reference; Survey Calculation Method.

Project: 514566 ST01
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: 514566 ST01
Site Position: Northing: 386,634.23 usft, Latitude: 39.56
From: Map, Easting: 1,695,481.66 usft, Longitude: -80.58
Position Uncertainty: 0.0 usft, Slot Radius: 13-3/16", Grid Convergence: -0.69°

Well: 514566 ST01
Well Position: +N-S 0.0 usft, Northing: 386,634.23 usft, Latitude: 39° 33' 23.440 N
+E-W 0.0 usft, Easting: 1,695,481.66 usft, Longitude: 80° 34' 48.143 W
Position Uncertainty: 0.0 usft, Wellhead Elevation: usft, Ground Level: 1,443.0 usft

Wellbore: 514566 ST01

Magnetics: Model Name: IGRF2010_14, Sample Date: 6/27/2014, Declination: -8.68, Dip Angle: 66.99, Field Strength: 52,401

Design: 514566 ST01

Audit Notes:

Version: 1.0, Phase: ACTUAL, Tie On Depth: 6,483.0
Vertical Section: Depth From (TVD) (usft), +N-S (usft), +E-W (usft), Direction (°)

Survey Program: Date: 7/5/2014
From (), To (usft), Survey (Wellbore), Tool Name, Description

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)

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Phoenix Technology Services
Survey Report



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Database:	COMPASS 5000.1 Build 56	Local Co-ordinate Reference:	North American Datum 83
Company:	EQT Production Services	TVD Reference:	True Vertical Depth
Project:	COMPASS 5000.1 Build 56	MD Reference:	Measured Depth
Site:	COMPASS 5000.1 Build 56	North Reference:	True North
Well:	COMPASS 5000.1 Build 56	Survey Calculation Method:	Minimum Curvature
Wellbore:	COMPASS 5000.1 Build 56		
Design:	COMPASS 5000.1 Build 56		

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	0.34	138.13	703.0	-756.0	-2.6	3.4	3.6	0.04	-0.03	4.52
803.0	0.38	132.03	803.0	-656.0	-3.1	3.8	4.2	0.06	0.04	-6.10
903.0	0.40	130.20	903.0	-556.0	-3.5	4.4	4.8	0.02	0.02	-1.83
1,003.0	0.31	135.65	1,003.0	-456.0	-3.9	4.8	5.3	0.10	-0.09	5.45
1,103.0	0.49	140.59	1,103.0	-356.0	-4.5	5.3	6.0	0.18	0.18	4.94
1,203.0	0.48	143.25	1,203.0	-256.0	-5.1	5.8	6.8	0.02	-0.01	2.66
1,303.0	0.47	132.02	1,303.0	-156.0	-5.7	6.4	7.6	0.09	-0.01	-11.23
1,403.0	0.45	123.17	1,403.0	-56.0	-6.2	7.0	8.2	0.07	-0.02	-8.85
1,503.0	0.47	119.72	1,503.0	44.0	-6.6	7.7	8.9	0.03	0.02	-3.45
1,603.0	0.36	114.97	1,603.0	144.0	-7.0	8.3	9.4	0.12	-0.11	-4.75
1,703.0	0.26	104.08	1,703.0	244.0	-7.2	8.8	9.7	0.12	-0.10	-10.89
1,803.0	0.29	107.71	1,803.0	344.0	-7.3	9.3	10.0	0.03	0.03	3.63
1,903.0	0.24	90.16	1,903.0	444.0	-7.4	9.7	10.2	0.09	-0.05	-17.55
2,003.0	0.41	85.80	2,003.0	544.0	-7.4	10.3	10.4	0.17	0.17	-4.36
2,103.0	0.41	72.13	2,103.0	644.0	-7.2	11.0	10.5	0.10	0.00	-13.67
2,203.0	0.34	75.84	2,203.0	744.0	-7.0	11.6	10.6	0.07	-0.07	3.71
2,303.0	0.44	70.50	2,302.9	843.9	-6.8	12.3	10.6	0.11	0.10	-5.34
2,403.0	0.41	69.99	2,402.9	943.9	-6.6	13.0	10.6	0.03	-0.03	-0.51
2,503.0	0.46	65.93	2,502.9	1,043.9	-6.3	13.7	10.6	0.06	0.05	-4.06
2,603.0	0.47	67.94	2,602.9	1,143.9	-6.0	14.4	10.5	0.02	0.01	2.01
2,703.0	0.47	68.56	2,702.9	1,243.9	-5.7	15.2	10.5	0.01	0.00	0.62
2,803.0	0.44	72.68	2,802.9	1,343.9	-5.4	15.9	10.5	0.04	-0.03	4.12
2,903.0	0.41	59.31	2,902.9	1,443.9	-5.1	16.6	10.4	0.10	-0.03	-13.37
3,003.0	0.38	38.07	3,002.9	1,543.9	-4.7	17.1	10.2	0.15	-0.03	-21.24
3,103.0	0.30	344.31	3,102.9	1,643.9	-4.2	17.2	9.8	0.32	-0.08	-53.76
3,203.0	0.46	340.41	3,202.9	1,743.9	-3.5	17.0	9.1	0.16	0.16	-3.90
3,303.0	0.43	326.82	3,302.9	1,843.9	-2.8	16.7	8.3	0.11	-0.03	-13.59
3,403.0	0.70	327.40	3,402.9	1,943.9	-2.0	16.2	7.4	0.27	0.27	0.58
3,503.0	0.75	324.24	3,502.9	2,043.9	-1.0	15.5	6.1	0.06	0.05	-3.16
3,603.0	0.79	327.07	3,602.9	2,143.9	0.1	14.7	4.8	0.06	0.04	2.83
3,703.0	0.72	330.85	3,702.9	2,243.9	1.3	14.0	3.6	0.09	-0.07	3.78
3,803.0	0.65	333.73	3,802.9	2,343.9	2.3	13.5	2.4	0.08	-0.07	2.88
3,903.0	0.68	328.75	3,902.9	2,443.9	3.3	12.9	1.2	0.07	0.03	-4.98
4,003.0	0.62	324.52	4,002.9	2,543.9	4.3	12.3	0.1	0.08	-0.06	-4.23
4,103.0	0.71	317.96	4,102.9	2,643.9	5.2	11.6	-1.0	0.12	0.09	-6.56
4,203.0	0.65	313.66	4,202.9	2,743.9	6.0	10.7	-2.1	0.08	0.06	3.30
4,303.0	0.66	310.03	4,302.8	2,843.9	6.8	9.9	-3.1	0.04	0.01	3.63
4,403.0	0.72	305.60	4,402.8	2,943.8	7.5	8.9	-4.1	0.08	0.06	4.48
4,503.0	0.75	308.80	4,502.8	3,043.8	8.3	7.9	-5.1	0.05	0.03	3.20
4,603.0	0.72	308.33	4,602.8	3,143.8	9.1	6.9	-6.2	0.03	-0.03	16.87
4,703.0	0.63	319.15	4,702.8	3,243.8	9.9	6.0	-7.3	0.16	-0.09	10.82
4,803.0	0.61	327.13	4,802.8	3,343.8	10.8	5.4	-8.3	0.09	0.02	7.98
4,903.0	0.25	335.42	4,902.8	3,443.8	11.4	5.0	-9.4	0.26	0.36	6.29

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Phoenix Technology Services

Survey Report



Database:	COMPASS 5000.1 Build 56	Local Co-ordinate Reference:	North American Datum 83
Company:	EQT Production Services	TVD Reference:	NA 83 Mean Sea Level
Project:	WV Dept of Environmental Protection	MD Reference:	NA 83 Mean Sea Level
Site:	WV Dept of Environmental Protection	North Reference:	NA 83 Mean Sea Level
Well:	WV Dept of Environmental Protection	Survey Calculation Method:	Minimum Curvature
Wellbore:	WV Dept of Environmental Protection		
Design:	WV Dept of Environmental Protection		

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	0.19	320.89	5,002.8	3,543.8	11.8	4.8	-9.4	0.08	-0.06	-14.53
5,103.0	0.32	314.54	5,102.8	3,643.8	12.1	4.5	-9.8	0.13	0.13	-6.35
5,203.0	0.48	315.97	5,202.8	3,743.8	12.6	4.0	-10.5	0.16	0.16	1.43
5,303.0	0.57	316.35	5,302.8	3,843.8	13.2	3.4	-11.3	0.09	0.09	0.38
5,403.0	0.40	313.65	5,402.8	3,943.8	13.8	2.8	-12.1	0.17	-0.17	-2.70
5,503.0	0.26	316.16	5,502.8	4,043.8	14.2	2.4	-12.6	0.14	-0.14	2.51
5,603.0	0.65	315.81	5,602.8	4,143.8	14.8	1.8	-13.3	0.39	0.39	-0.35
5,703.0	0.67	319.79	5,702.8	4,243.8	15.7	1.1	-14.4	0.05	0.02	3.98
5,803.0	0.73	318.46	5,802.8	4,343.8	16.6	0.3	-15.5	0.06	0.06	-1.33
5,903.0	1.27	319.66	5,902.8	4,443.8	17.9	-0.9	-17.2	0.54	0.54	1.20
5,971.0	1.52	320.84	5,970.7	4,511.7	19.2	-1.9	-18.7	0.37	0.37	1.74
6,009.0	1.40	312.10	6,008.7	4,549.7	19.9	-2.6	-19.6	0.66	-0.32	-23.00
6,040.0	1.50	308.00	6,039.7	4,580.7	20.4	-3.2	-20.3	0.46	0.32	-13.23
6,072.0	1.60	306.50	6,071.7	4,612.7	20.9	-3.9	-21.0	0.34	0.31	-4.69
6,103.0	1.60	312.20	6,102.7	4,643.7	21.5	-4.6	-21.7	0.51	0.00	18.39
6,135.0	2.20	319.50	6,134.7	4,675.7	22.2	-5.3	-22.7	2.02	1.88	22.81
6,167.0	5.30	339.50	6,166.6	4,707.6	24.1	-6.2	-24.8	10.37	9.69	62.50
6,199.0	7.40	350.70	6,198.4	4,739.4	27.5	-7.1	-28.3	7.59	6.56	35.00
6,230.0	8.20	354.00	6,229.1	4,770.1	31.7	-7.6	-32.4	2.96	2.58	10.65
6,262.0	11.20	358.50	6,260.7	4,801.7	37.1	-7.9	-37.5	9.66	9.38	14.06
6,294.0	15.00	359.90	6,291.8	4,832.8	44.3	-8.0	-44.4	11.92	11.88	4.38
6,325.0	18.90	0.50	6,321.5	4,862.5	53.3	-8.0	-52.9	12.59	12.58	1.94
6,357.0	22.70	0.40	6,351.4	4,892.4	64.7	-7.9	-63.5	11.88	11.88	-0.31
6,389.0	24.80	0.60	6,380.7	4,921.7	77.6	-7.8	-75.6	6.57	6.56	0.63
6,420.0	25.50	0.20	6,408.7	4,949.7	90.8	-7.7	-88.0	2.32	2.26	-1.29
6,452.0	26.10	357.40	6,437.5	4,978.5	104.7	-8.0	-101.2	4.24	1.88	-8.75
6,483.0	28.60	354.90	6,465.1	5,006.1	118.9	-8.9	-114.9	8.87	8.06	-8.06
6,511.0	29.70	355.60	6,489.5	5,030.5	132.5	-10.1	-128.0	4.11	3.93	2.50
6,543.0	25.60	356.00	6,517.9	5,058.9	147.3	-11.2	-142.3	12.83	-12.81	1.25
6,575.0	23.60	354.80	6,547.0	5,088.0	160.6	-12.2	-155.2	6.44	-6.25	-3.75
6,606.0	22.30	353.00	6,575.5	5,116.5	172.6	-13.5	-166.9	4.77	-4.19	-5.81
6,638.0	20.70	352.20	6,605.3	5,146.3	184.2	-15.0	-178.4	5.08	-5.00	-2.50
6,669.0	20.10	352.20	6,634.3	5,175.3	194.9	-16.5	-189.0	1.94	-1.94	0.00
6,701.0	21.40	355.40	6,664.3	5,205.3	206.2	-17.7	-200.0	5.39	4.06	10.00
6,733.0	22.20	356.10	6,694.0	5,235.0	218.0	-18.6	-211.4	2.63	2.50	2.19
6,764.0	21.30	354.60	6,722.8	5,263.8	229.5	-19.5	-222.5	3.41	-2.90	-4.84
6,796.0	19.90	351.40	6,752.7	5,293.7	240.7	-20.9	-233.5	5.61	-4.38	-10.00
6,828.0	18.50	349.20	6,782.9	5,323.9	251.0	-22.6	-243.8	4.92	-4.38	-8.56
6,859.0	16.30	348.90	6,812.5	5,353.5	260.1	-24.4	-253.0	7.00	0.97	0.97
6,891.0	13.60	351.90	6,843.4	5,384.4	268.3	-25.8	-261.1	8.77	-8.44	-8.44
6,923.0	12.40	349.80	6,874.6	5,415.6	275.4	-26.9	-268.2	4.03	-3.75	-3.75

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Database:	COMPASS 5000.1	Local Co-ordinate Reference:	North American Datum 1983
Company:	EQT Production Services	TVD Reference:	KB to LMS datum
Project:	Wells 2014.07	MD Reference:	FT @ 1983 (usft)
Site:	Watten County 410000	North Reference:	NAD 83
Well:	WEL 410000	Survey Calculation Method:	Minimum Curvature
Wellbore:	11498 3101		
Design:	34500 0117 AA 0000 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)
6,954.0	12.40	344.80	6,904.9	5,445.9	281.9	-28.4	-274.8	3.46	0.00	-16.13
6,986.0	11.00	348.80	6,936.2	5,477.2	286.2	-29.9	-281.2	5.05	-4.38	12.50
7,017.0	8.60	358.10	6,966.8	5,507.8	293.4	-30.5	-286.4	9.25	-7.74	30.00
7,049.0	6.70	10.40	6,998.5	5,539.5	297.6	-30.3	-290.3	7.81	-5.94	38.44
7,081.0	6.00	27.50	7,030.3	5,571.3	300.9	-29.2	-293.0	6.27	-2.19	53.44
7,112.0	6.40	47.40	7,061.1	5,602.1	303.5	-27.1	-294.8	7.01	1.29	64.19
7,144.0	7.90	69.60	7,092.9	5,633.9	305.5	-23.8	-295.5	9.74	4.69	69.38
7,175.0	9.80	84.00	7,123.5	5,664.5	306.5	-19.1	-294.9	9.37	6.13	46.45
7,207.0	11.70	95.80	7,154.9	5,695.9	306.5	-13.2	-292.8	9.06	5.94	36.88
7,238.0	13.10	105.40	7,185.2	5,726.2	305.2	-6.7	-289.4	8.02	4.52	30.97
7,270.0	16.00	115.00	7,216.2	5,757.2	302.4	0.8	-284.2	11.76	9.06	30.00
7,302.0	19.80	122.30	7,246.7	5,787.7	297.6	9.4	-276.8	13.77	11.88	22.81
7,333.0	23.70	128.90	7,275.4	5,816.4	290.9	18.7	-267.4	14.83	12.58	21.29
7,365.0	27.30	135.40	7,304.3	5,845.3	281.7	28.8	-255.2	14.23	11.25	20.31
7,396.0	30.60	143.10	7,331.5	5,872.5	270.3	38.6	-241.2	16.04	10.65	24.84
7,428.0	34.50	149.50	7,358.4	5,899.4	255.9	48.1	-224.5	16.24	12.19	20.00
7,460.0	38.90	154.40	7,384.1	5,925.1	239.1	57.0	-205.6	16.51	13.75	15.31
7,491.0	43.50	158.40	7,407.4	5,948.4	220.4	65.2	-185.2	17.09	14.84	12.90
7,523.0	48.00	160.90	7,429.7	5,970.7	198.9	73.1	-162.3	15.13	14.06	7.81
7,554.0	53.70	162.40	7,449.3	5,990.3	176.1	80.7	-138.3	18.77	18.39	4.84
7,591.0	57.90	164.70	7,470.1	6,011.1	146.7	89.3	-107.8	12.46	11.35	6.22
7,622.0	62.30	164.80	7,485.5	6,026.5	120.8	96.4	-81.0	14.20	14.19	0.32
7,654.0	66.20	163.80	7,499.4	6,040.4	93.0	104.2	-52.2	12.51	12.19	-3.13
7,685.0	70.10	163.70	7,511.0	6,052.0	65.4	112.2	-23.5	12.58	12.58	-0.32
7,717.0	71.10	163.10	7,521.6	6,062.6	36.5	120.8	6.6	3.59	3.13	-1.88
7,748.0	72.00	162.90	7,531.4	6,072.4	8.4	129.4	36.0	2.97	2.90	-0.65
7,780.0	73.60	162.30	7,540.9	6,081.9	-20.8	138.6	66.5	5.31	5.00	-1.88
7,811.0	75.30	162.40	7,549.2	6,090.2	-49.2	147.6	96.4	5.49	5.48	0.32
7,843.0	76.80	162.50	7,556.9	6,097.9	-78.9	157.0	127.4	4.70	4.69	0.31
7,875.0	77.60	162.00	7,564.0	6,105.0	-108.6	166.5	158.6	2.93	2.50	-1.56
7,906.0	77.40	163.00	7,570.7	6,111.7	-137.4	175.6	188.8	3.21	-0.65	3.23
7,925.6	77.34	162.57	7,575.0	6,116.0	-155.7	181.3	208.0	2.16	-0.31	-2.19
7,938.0	77.30	162.30	7,577.7	6,118.7	-167.2	184.9	220.0	2.16	-0.31	-2.19
7,969.0	78.20	162.70	7,584.3	6,125.3	-196.1	194.0	250.3	3.17	2.90	1.29
8,001.0	80.50	163.10	7,590.2	6,131.2	-226.2	203.3	281.7	7.29	7.19	1.25
8,032.0	81.80	163.20	7,595.0	6,136.0	-255.5	212.2	312.3	4.21	4.19	0.32
8,063.0	82.60	163.20	7,599.2	6,140.2	-284.9	221.0	343.0	2.58	2.58	0.00
8,095.0	84.30	163.40	7,602.8	6,143.8	-315.4	230.2	374.7	5.35	5.31	0.63
8,126.0	87.00	163.80	7,605.2	6,146.2	-345.0	238.9	405.6	8.80	8.71	1.29
8,189.0	87.70	164.40	7,608.1	6,149.1	-405.5	256.1	468.3	1.46	1.11	0.95
8,251.0	86.80	164.00	7,611.1	6,152.1	-465.1	273.0	530.1	1.59	-1.45	-0.65

Database:	COMPASS 5000.1 Build 56	Local Co-ordinate Reference:	North American Datum 1983
Company:	OT Production, Missouri	TVD Reference:	1983 datum
Project:	WYOMING, WY	MD Reference:	1983 datum
Site:	WYOMING COUNTY, WY	North Reference:	1983 datum
Well:	WYOMING 2014	Survey Calculation Method:	Minimum Curvature
Wellbore:	WYOMING 2014		
Design:	WYOMING 2014		

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)
8,314.0	87.70	162.40	7,614.1	6,155.1	-525.4	281.2	593.0	2.91	1.43	-2.54
8,377.0	89.80	162.90	7,615.5	6,156.5	-585.5	310.0	655.9	3.43	3.33	0.79
8,439.0	89.60	161.40	7,615.8	6,156.8	-644.5	329.0	717.8	2.44	-0.32	-2.42
8,502.0	89.30	161.60	7,616.4	6,157.4	-704.2	349.0	780.8	0.57	-0.48	0.32
8,565.0	89.10	160.20	7,617.3	6,158.3	-763.7	369.6	843.8	2.24	-0.32	-2.22
8,627.0	88.90	160.10	7,618.4	6,159.4	-822.1	390.6	905.8	0.36	-0.32	-0.16
8,690.0	89.30	160.10	7,619.4	6,160.4	-881.3	412.1	968.8	0.63	0.63	0.00
8,752.0	89.40	161.20	7,620.1	6,161.1	-939.8	432.6	1,030.8	1.78	0.16	1.77
8,815.0	88.90	161.60	7,621.0	6,162.0	-999.5	452.7	1,093.8	1.02	-0.79	0.63
8,877.0	89.20	161.50	7,622.0	6,163.0	-1,058.3	472.3	1,155.7	0.51	0.48	-0.16
8,940.0	89.20	160.90	7,622.9	6,163.9	-1,117.9	492.6	1,218.7	0.95	0.00	-0.95
9,002.0	89.10	164.40	7,623.8	6,164.8	-1,177.1	511.1	1,280.6	5.65	-0.16	5.65
9,065.0	89.40	165.20	7,624.6	6,165.6	-1,237.9	527.6	1,343.4	1.36	0.48	1.27
9,128.0	89.30	163.80	7,625.4	6,166.4	-1,298.6	544.5	1,406.3	2.23	-0.16	-2.22
9,190.0	89.40	162.80	7,626.1	6,167.1	-1,358.0	562.3	1,468.2	1.62	0.16	-1.61
9,253.0	89.40	160.30	7,626.7	6,167.7	-1,417.7	582.2	1,531.1	3.97	0.00	-3.97
9,316.0	88.40	160.90	7,627.9	6,168.9	-1,477.1	603.1	1,594.1	1.85	-1.59	0.95
9,378.0	87.40	160.00	7,630.2	6,171.2	-1,535.5	623.9	1,656.1	2.17	-1.61	-1.45
9,395.9	87.49	160.09	7,631.0	6,172.0	-1,552.3	630.0	1,674.0	0.67	0.48	0.48
9,441.0	87.70	160.30	7,632.9	6,173.9	-1,594.7	645.2	1,719.0	0.67	0.48	0.48
9,502.0	89.40	161.30	7,634.4	6,175.4	-1,652.3	665.3	1,780.0	3.23	2.79	1.64
9,568.0	89.90	162.30	7,634.8	6,175.8	-1,715.0	685.9	1,846.0	1.69	0.76	1.52
9,631.0	90.10	163.50	7,634.8	6,175.8	-1,775.2	704.4	1,908.9	1.93	0.32	1.90
9,694.0	89.60	163.10	7,635.0	6,176.0	-1,835.5	722.5	1,971.8	1.02	-0.79	-0.63
9,757.0	89.40	159.00	7,635.6	6,176.6	-1,895.1	743.0	2,034.8	6.52	-0.32	-6.51
9,821.0	89.40	158.60	7,636.2	6,177.2	-1,954.8	766.1	2,098.7	0.62	0.00	-0.63
9,884.0	89.60	159.70	7,636.8	6,177.8	-2,013.7	788.5	2,161.7	1.77	0.32	1.75
9,947.0	89.90	160.20	7,637.1	6,178.1	-2,072.8	810.1	2,224.7	0.93	0.48	0.79
10,010.0	89.80	163.00	7,637.2	6,178.2	-2,132.6	830.0	2,287.7	4.45	-0.16	4.44
10,073.0	89.60	159.40	7,637.5	6,178.5	-2,192.2	850.3	2,350.7	5.72	-0.32	-5.71
10,137.0	89.40	155.90	7,638.1	6,179.1	-2,251.4	874.7	2,414.6	5.48	-0.31	-5.47
10,200.0	89.30	156.10	7,638.8	6,179.8	-2,309.0	900.3	2,477.4	0.35	-0.16	0.32
10,263.0	89.20	156.80	7,639.6	6,180.6	-2,366.7	925.5	2,540.3	1.12	-0.16	1.11
10,326.0	89.10	156.70	7,640.6	6,181.6	-2,424.6	950.3	2,603.2	0.22	-0.16	-0.16
10,390.0	88.80	157.20	7,641.8	6,182.8	-2,483.5	975.4	2,667.1	0.91	-0.47	0.78
10,453.0	89.60	158.00	7,642.6	6,183.6	-2,541.7	999.4	2,730.0	1.80	1.27	1.27
10,516.0	90.20	160.10	7,642.7	6,183.7	-2,600.5	1,021.9	2,793.0	3.47	0.95	3.33
10,579.0	88.30	158.10	7,643.6	6,184.6	-2,659.4	1,044.4	2,856.0	4.38	-3.02	-3.17
10,643.0	88.40	158.90	7,645.4	6,186.4	-2,718.9	1,067.8	2,919.9	1.28	0.16	1.25
10,706.0	90.70	161.70	7,645.9	6,186.9	-2,778.2	1,089.1	2,982.9	5.75	3.65	4.44
10,769.0	90.10	161.00	7,645.5	6,186.5	-2,837.9	1,109.2	3,045.9	1.46	-0.95	-1.11
10,832.0	90.20	160.50	7,645.3	6,186.3	-2,897.4	1,130.0	3,108.9	0.81	0.16	-0.79



Phoenix Technology Services

Survey Report



PHOENIX TECHNOLOGY SERVICES

Database:	21700001 - Survey Data	Local Co-ordinate Reference:	21700001 - Survey Data
Company:	EQT Energy Services - Houston	TVD Reference:	21700001 - Survey Data
Project:	21700001 - Survey Data	MD Reference:	21700001 - Survey Data
Site:	21700001 - Survey Data	North Reference:	21700001 - Survey Data
Well:	21700001 - Survey Data	Survey Calculation Method:	21700001 - Survey Data
Wellbore:	21700001 - Survey Data		
Design:	21700001 - Survey Data		

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)
10,896.0	90.00	161.50	7,645.2	6,186.2	-2,957.9	1,150.8	3,172.9	1.59	-0.31	1.56
10,959.0	89.90	161.60	7,645.2	6,186.2	-3,017.7	1,170.7	3,235.8	0.22	-0.16	0.16
11,022.0	90.60	162.40	7,645.0	6,186.0	-3,077.6	1,190.2	3,298.8	1.69	1.11	1.27
11,085.0	90.10	163.80	7,644.6	6,185.6	-3,137.8	1,208.5	3,361.7	2.36	-0.79	2.22
11,149.0	90.10	164.50	7,644.5	6,185.5	-3,199.4	1,226.0	3,425.6	1.09	0.00	1.09
11,212.0	88.70	161.40	7,645.1	6,186.1	-3,259.6	1,244.5	3,488.5	5.40	-2.22	-4.92
11,275.0	88.00	159.60	7,646.9	6,187.9	-3,319.0	1,265.5	3,551.5	3.06	-1.11	-2.86
11,339.0	87.80	159.20	7,649.3	6,190.3	-3,378.9	1,288.0	3,615.4	0.70	-0.31	-0.63
11,402.0	87.30	158.60	7,652.0	6,193.0	-3,437.6	1,310.7	3,678.3	1.24	-0.79	-0.95
11,465.0	87.70	158.80	7,654.7	6,195.7	-3,496.2	1,333.5	3,741.3	0.71	0.63	0.32
11,529.0	89.50	161.20	7,656.3	6,197.3	-3,556.3	1,355.4	3,805.2	4.69	2.81	3.75
11,592.0	89.60	162.50	7,658.8	6,197.8	-3,616.2	1,375.0	3,868.2	2.07	0.16	2.06
11,655.0	89.60	162.50	7,657.2	6,198.2	-3,676.3	1,394.0	3,931.1	0.00	0.00	0.00
11,719.0	89.20	162.30	7,657.9	6,198.9	-3,737.3	1,413.3	3,995.1	0.70	-0.63	-0.31
11,782.0	88.80	162.30	7,659.0	6,200.0	-3,797.3	1,432.5	4,058.0	0.63	-0.63	0.00
11,845.0	88.90	162.20	7,660.3	6,201.3	-3,857.3	1,451.7	4,121.0	0.22	0.16	-0.16
11,909.0	89.40	164.80	7,661.2	6,202.2	-3,918.6	1,469.8	4,184.9	4.14	0.78	4.06
11,972.0	89.90	164.30	7,661.6	6,202.6	-3,979.3	1,486.6	4,247.7	1.12	0.79	-0.79
12,035.0	91.40	161.80	7,660.9	6,201.9	-4,039.6	1,505.0	4,310.6	4.63	2.38	-3.97
12,098.0	91.30	162.20	7,659.4	6,200.4	-4,099.5	1,524.4	4,373.5	0.65	-0.16	0.63
12,161.0	91.20	162.70	7,658.0	6,199.0	-4,159.6	1,543.4	4,436.5	0.81	-0.16	0.79
12,225.0	90.30	162.30	7,657.2	6,198.2	-4,220.6	1,562.7	4,500.4	1.54	-1.41	-0.63
12,288.0	89.00	162.40	7,657.6	6,198.6	-4,280.6	1,581.8	4,563.4	2.07	-2.06	0.16
12,351.0	88.80	163.90	7,658.8	6,199.8	-4,340.9	1,600.0	4,626.3	2.40	-0.32	2.38
12,415.0	90.00	164.80	7,659.5	6,200.5	-4,402.5	1,617.3	4,690.1	2.34	1.88	1.41
12,478.0	90.40	165.20	7,659.2	6,200.2	-4,463.4	1,633.6	4,752.9	0.90	0.63	0.63
12,541.0	89.60	159.80	7,659.2	6,200.2	-4,523.4	1,652.5	4,815.8	8.66	-1.27	-8.57
12,605.0	88.90	153.90	7,660.1	6,201.1	-4,582.3	1,677.7	4,879.7	9.28	-1.09	-9.22
12,668.0	89.30	154.50	7,661.1	6,202.1	-4,639.0	1,705.1	4,942.3	1.14	0.63	0.95
12,731.0	89.60	158.80	7,661.7	6,202.7	-4,696.8	1,730.1	5,005.2	6.84	0.48	6.83
12,794.0	88.90	159.80	7,662.5	6,203.5	-4,755.7	1,752.3	5,068.2	1.94	-1.11	1.59
12,857.0	88.40	162.00	7,664.0	6,205.0	-4,815.2	1,773.0	5,131.1	3.58	-0.79	3.49
12,921.0	88.10	162.00	7,665.9	6,206.9	-4,876.1	1,792.7	5,195.1	0.47	-0.47	0.00
12,984.0	88.00	161.60	7,668.1	6,209.1	-4,935.9	1,812.4	5,258.0	0.65	-0.16	-0.63
13,047.0	87.70	161.00	7,670.4	6,211.4	-4,995.5	1,832.6	5,321.0	1.06	-0.48	-0.95
13,110.0	88.40	161.20	7,672.6	6,213.6	-5,055.1	1,853.0	5,383.9	1.16	1.11	0.32
13,174.0	89.50	162.20	7,673.8	6,214.8	-5,115.8	1,873.1	5,447.9	2.32	1.72	1.56
13,237.0	89.50	163.10	7,674.3	6,215.3	-5,176.0	1,891.8	5,510.8	1.43	0.00	1.43
13,300.0	90.00	163.70	7,674.6	6,215.6	-5,236.3	1,909.8	5,573.7	1.24	0.79	0.95
13,363.0	91.10	161.90	7,674.0	6,215.0	-5,296.5	1,928.5	5,636.6	3.35	1.75	-2.86
13,427.0	91.00	163.70	7,672.8	6,213.8	-5,357.6	1,947.4	5,700.6	2.82	-0.16	2.81
13,489.0	90.40	162.80	7,672.0	6,213.0	-5,417.0	1,965.3	5,762.5	1.74	-0.97	-1.45



Phoenix Technology Services
Survey Report



Where energy meets innovation

Database: Company: Project: Site: Well: Wellbore: Design:	3544 - 5075 - 5075 - 5075 - 5075 EQT Production - Marcellus Wellbore - 5075 Wellbore - 5075 Wellbore - 5075 Wellbore - 5075	Local Co-ordinate Reference: TVD Reference: MD Reference: North Reference: Survey Calculation Method:	North American Datum 1983 11499.1400 (usft) 11499.1400 (usft) NAD 83 Gauss-Krüger
-----------------------------------------------------------------------------	--------------------------------------------------------------------------------------------------------------------------------------------	-------------------------------------------------------------------------------------------------------------------	-----------------------------------------------------------------------------------------------

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)
13,553.0	90.30	159.40	7,671.6	6,212.6	-5,477.5	1,986.0	5,826.4	5.31	-0.16	-5.31
13,616.0	89.70	158.30	7,671.6	6,212.6	-5,536.3	2,008.7	5,889.4	1.99	-0.95	-1.75
13,679.0	90.10	158.40	7,671.8	6,212.8	-5,594.9	2,032.0	5,952.4	0.65	0.63	0.16
13,742.0	90.10	159.00	7,671.6	6,212.6	-5,653.5	2,054.8	6,015.4	0.95	0.00	0.95
13,805.0	89.60	157.60	7,671.8	6,212.8	-5,712.1	2,078.1	6,078.3	2.36	-0.79	-2.22
13,868.0	88.70	158.00	7,672.7	6,213.7	-5,770.4	2,101.9	6,141.3	1.56	-1.43	0.63
13,931.0	89.30	157.40	7,673.8	6,214.8	-5,828.7	2,125.8	6,204.2	1.35	0.95	-0.95
13,995.0	90.90	158.50	7,673.7	6,214.7	-5,888.0	2,149.9	6,268.2	3.03	2.50	1.72
14,058.0	90.80	159.80	7,672.8	6,213.8	-5,946.9	2,172.3	6,331.1	2.07	-0.16	2.06
14,121.0	90.20	159.60	7,672.3	6,213.3	-6,006.0	2,194.1	6,394.1	1.00	-0.95	-0.32
14,184.0	89.50	158.70	7,672.4	6,213.4	-6,064.8	2,216.6	6,457.1	1.81	-1.11	-1.43
14,248.0	88.90	158.40	7,673.3	6,214.3	-6,124.4	2,240.0	6,521.1	1.05	-0.94	-0.47
14,311.0	89.80	160.10	7,674.1	6,215.1	-6,183.3	2,262.3	6,584.1	2.92	1.11	2.70
14,374.0	91.30	162.40	7,673.6	6,214.6	-6,242.9	2,282.5	6,647.0	4.54	2.70	3.65
14,438.0	91.30	162.60	7,672.2	6,213.2	-6,304.0	2,301.8	6,711.0	0.31	0.00	0.31
14,500.0	91.30	163.30	7,670.8	6,211.8	-6,363.2	2,319.9	6,772.9	1.13	0.00	1.13
14,563.0	90.80	164.40	7,669.6	6,210.6	-6,423.7	2,337.5	6,835.8	1.92	-0.79	1.75
14,626.0	89.50	163.00	7,669.5	6,210.5	-6,484.2	2,355.1	6,898.6	3.03	-2.06	-2.22
14,689.0	89.20	164.60	7,670.2	6,211.2	-6,544.7	2,372.7	6,961.5	2.58	-0.48	2.54
14,753.0	88.90	165.20	7,671.2	6,212.2	-6,606.5	2,389.4	7,025.3	1.05	-0.47	0.94
14,816.0	88.20	162.60	7,672.8	6,213.8	-6,667.0	2,406.9	7,088.1	4.27	-1.11	-4.13
14,879.0	88.00	162.60	7,674.9	6,215.9	-6,727.1	2,425.7	7,151.0	0.32	-0.32	0.00
14,943.0	87.80	162.30	7,677.3	6,218.3	-6,788.0	2,445.0	7,214.9	0.56	-0.31	-0.47
15,006.0	88.70	162.20	7,679.2	6,220.2	-6,848.0	2,464.2	7,277.9	1.44	1.43	-0.16
15,069.0	89.20	161.70	7,680.3	6,221.3	-6,907.9	2,483.7	7,340.8	1.12	0.79	-0.79
15,133.0	89.50	163.80	7,681.1	6,222.1	-6,969.0	2,502.7	7,404.7	3.31	0.47	3.28
15,196.0	89.00	163.40	7,681.9	6,222.9	-7,029.4	2,520.4	7,467.6	1.02	-0.79	-0.63
15,259.0	88.50	162.30	7,683.3	6,224.3	-7,089.6	2,539.0	7,530.5	1.92	-0.79	-1.75
15,286.0	88.00	163.00	7,684.1	6,225.1	-7,115.4	2,547.1	7,557.5	3.19	-1.85	2.59
15,345.0	88.00	163.00	7,686.2	6,227.2	-7,171.8	2,564.3	7,616.4	0.00	0.00	0.00

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
7,925.6	7,575.0	Top of Marcellus@7575' TVD		0.00	
9,395.9	7,631.0	Top of Onondaga@7631' MD		0.00	



Phoenix Technology Services Survey Report



Database:	2016-0001 Single Well US	Local Co-ordinate Reference:	1983 NAD83 County 742884
Company:	CDT Petroleum Services	TVD Reference:	CD 81126' MD
Project:	Alaska County, AK	MD Reference:	15286' MD
Site:	Wellbore Survey 81126'	North Reference:	CD 81126' MD
Well:	15345	Survey Calculation Method:	Minimum Distances
Wellbore:	15345		
Design:	CD 81126' MD / 15345' MD / 7686' TVD		

Design Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
6,483.0	6,465.1	118.9	-8.9	ST01 Tie In=6483' MD
8,126.0	7,605.2	-345.0	238.9	LP=8126' MD/ 7605' TVD
15,286.0	7,684.1	-7,115.4	2,547.1	Last Survey=15286' MD/7684' TVD
15,345.0	7,686.2	-7,171.8	2,584.3	Projection to TD/Deepest Point of Well=15345' MD/ 7686' TVD

Checked By: _____ Approved By: _____ Date: _____



EQT Production - Marcellus

KB Elevation=1303 ft
Ground Elevation=1280 ft

Project: Wetzel County, WV
Site: Wetzel County 514566
Well: Well #514566
Wellbore: 514566 ST01
Design: 514566 ST01 As Drilled Surveys

Please note that all measurements are taken from KB Elevation

