API 47- 103 - 02938

PHOENIX
TECHNOLOGY SERVICES

EQT Production - Geneseo Shale

Wetzel County, WV
Wetzel County 514564
Well #514564

Main Wellbore

Design: As Drilled Surveys

Standard Survey Report

29 October, 2014

EQT
Where energy meets innovation.

PHOENIX TECHNOLOGY SERVICES

Phoenix Technology Services

Survey Report

EQT

Database:		Local Co-ordinate Reference:	
Company:		TVD Reference:	
Project:		MD Reference:	
Site:		North Reference:	
Well:		Survey Calculation Method:	
Wellbore:			
Design:			

Project

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

Site Position:		**Northing:**	386,655.69 usft	**Latitude:**	39.56
From:	Map	**Easting:**	1,695,460.70 usft	**Longitude:**	-80.58
Position Uncertainty:	0.0 usft	**Slot Radius:**	13-3/16 "	**Grid Convergence:**	-0.69 °

Well

Well Position	**+N/-S**	0.0 usft	**Northing:**	386,655.69	usft	**Latitude:**	39° 33' 23.650 N
	+E/-W	0.0 usft	**Easting:**	1,695,460.70	usft	**Longitude:**	80° 34' 48.414 W
Position Uncertainty		0.0 usft	**Wellhead Elevation:**		usft	**Ground Level:**	1,443.0 usft

Wellbore

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010_14	10/13/2014	-8.69	66.96	52,365

Design

Audit Notes:

Version:	1.0	**Phase:**	ACTUAL	**Tie On Depth:**	0.0

Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.0	0.0	0.0	157.53

Survey Program Date 10/29/2014

From ()	To (usft)	Survey (Wellbore)	Tool Name	Description
0.00	5,957.0	514564 Gyrodata Gyros (Main Wellbore)	GYD_DP_MS	Gyrodata gyro-compassing and drop
0.00	15,349.0	514564 PHX MWD (Main Wellbore)	MWD+IGRF	MWD+IGRF v3.standard declination

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	-1,459.0	0.0	0.0	0.0	0.00	0.00	0.00
100.0	0.62	102.12	100.0	-1,359.0	-0.1	0.5	0.3	0.62	0.62	0.00
200.0	0.66	100.72	200.0	-1,259.0	-0.3	1.6	0.9	0.04	0.04	-1.40
300.0	0.49	109.61	300.0	-1,159.0	-0.6	2.6	1.5	0.17	0.17	8.89
400.0	0.41	126.31	400.0	-1,059.0	-0.9	3.3	2.1	0.15	-0.08	16.70
500.0	0.40	126.23	500.0	-959.0	-1.4	3.9	2.7	0.01	-0.01	-0.08
600.0	0.35	127.38	600.0	-859.0	-1.8	4.4	3.3	0.05	-0.05	1.15
700.0	0.33	125.27	700.0	-759.0	-2.1	4.9	3.8	0.02	-0.02	-2.11

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Site:		North Reference:	
Well:		Survey Calculation Method:	
Wellbore:			
Design:			

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)
800.0	0.35	128.07	800.0	-659.0	-2.5	5.3	4.3	0.03	0.02	2.80
900.0	0.32	127.26	900.0	-559.0	-2.8	5.8	4.8	0.03	-0.03	-0.81
1,000.0	0.36	132.92	1,000.0	-459.0	-3.2	6.2	5.3	0.05	0.04	5.66
1,100.0	0.42	132.42	1,100.0	-359.0	-3.7	6.7	6.0	0.06	0.06	-0.50
1,200.0	0.48	139.18	1,200.0	-259.0	-4.2	7.3	6.7	0.08	0.06	6.76
1,300.0	0.48	143.58	1,300.0	-159.0	-4.9	7.8	7.5	0.04	0.00	4.40
1,400.0	0.50	143.70	1,400.0	-59.0	-5.6	8.3	8.3	0.02	0.02	0.12
1,500.0	0.41	155.58	1,500.0	41.0	-6.2	8.7	9.1	0.13	-0.09	11.88
1,600.0	0.28	159.88	1,600.0	141.0	-6.8	9.0	9.7	0.13	-0.13	4.30
1,700.0	0.11	184.15	1,700.0	241.0	-7.1	9.0	10.0	0.19	-0.17	24.27
1,800.0	0.08	285.43	1,800.0	341.0	-7.2	9.0	10.1	0.15	-0.03	101.28
1,900.0	0.22	344.01	1,900.0	441.0	-7.0	8.8	9.8	0.19	0.14	58.58
2,000.0	0.42	8.70	2,000.0	541.0	-6.5	8.8	9.3	0.24	0.20	24.69
2,100.0	0.50	8.37	2,099.9	640.9	-5.7	9.0	8.7	0.08	0.08	-0.33
2,200.0	0.57	9.80	2,199.9	740.9	-4.7	9.1	7.9	0.07	0.07	1.43
2,300.0	0.81	7.21	2,299.9	840.9	-3.5	9.3	6.8	0.24	0.24	-2.59
2,400.0	0.89	7.82	2,399.9	940.9	-2.1	9.5	5.5	0.08	0.08	0.61
2,500.0	0.92	7.93	2,499.9	1,040.9	-0.5	9.7	4.2	0.03	0.03	0.11
2,600.0	0.86	11.66	2,599.9	1,140.9	1.0	10.0	2.9	0.08	-0.06	3.73
2,700.0	0.88	13.19	2,699.9	1,240.9	2.5	10.3	1.6	0.03	0.02	1.53
2,800.0	0.91	6.41	2,799.9	1,340.9	4.0	10.5	0.3	0.11	0.03	-6.78
2,900.0	0.83	5.55	2,899.9	1,440.9	5.6	10.7	-1.0	0.08	-0.08	-0.86
3,000.0	0.69	345.77	2,999.9	1,540.9	6.9	10.6	-2.3	0.30	-0.14	-19.78
3,100.0	0.65	335.05	3,099.9	1,640.9	8.0	10.2	-3.4	0.13	-0.04	-10.72
3,200.0	0.70	333.24	3,199.8	1,740.8	9.0	9.7	-4.6	0.05	0.05	-1.81
3,300.0	0.81	328.20	3,299.8	1,840.8	10.2	9.1	-5.9	0.13	0.11	-5.04
3,400.0	0.70	348.33	3,399.8	1,940.8	11.4	8.6	-7.2	0.29	-0.11	20.13
3,500.0	0.74	346.47	3,499.8	2,040.8	12.6	8.3	-8.5	0.05	0.04	-1.86
3,600.0	0.73	343.54	3,599.8	2,140.8	13.8	8.0	-9.7	0.04	-0.01	-2.93
3,700.0	0.75	340.71	3,699.8	2,240.8	15.1	7.6	-11.0	0.04	0.02	-2.83
3,800.0	0.74	338.60	3,799.8	2,340.8	16.3	7.1	-12.3	0.03	-0.01	-2.11
3,900.0	0.62	335.05	3,899.8	2,440.8	17.4	6.7	-13.5	0.13	-0.12	-3.55
4,000.0	0.69	336.74	3,999.8	2,540.8	18.4	6.2	-14.6	0.07	0.07	1.69
4,100.0	0.71	329.72	4,099.8	2,640.8	19.5	5.6	-15.9	0.09	0.02	-7.02
4,200.0	0.79	323.37	4,199.8	2,740.8	20.6	4.9	-17.1	0.12	0.08	-6.35
4,300.0	0.72	321.88	4,299.8	2,840.8	21.6	4.1	-18.4	0.07	-0.07	-1.49
4,400.0	0.74	319.47	4,399.7	2,940.7	22.6	3.3	-19.6	0.04	0.02	-2.41
4,500.0	0.68	318.20	4,499.7	3,040.7	23.5	2.5	-20.8	0.06	-0.06	-1.27
4,600.0	0.69	321.25	4,599.7	3,140.7	24.5	1.7	-21.9	0.04	0.01	3.05
4,700.0	0.64	331.17	4,699.7	3,240.7	25.4	1.1	-23.1	0.13	-0.05	9.92
4,800.0	0.57	345.85	4,799.7	3,340.7	26.4	0.7	-24.1	0.17	-0.07	14.68
4,900.0	0.47	355.55	4,899.7	3,440.7	27.3	0.5	-25.1	0.12	-0.10	9.70

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Well:		Survey Calculation Method:	
Wellbore:			
Design:			

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)
5,000.0	0.41	344.51	4,999.7	3,540.7	28.0	0.4	-25.8	0.10	-0.06	-11.04
5,100.0	0.36	321.07	5,099.7	3,640.7	28.6	0.1	-26.4	0.16	-0.05	-23.44
5,200.0	0.39	318.72	5,199.7	3,740.7	29.1	-0.3	-27.0	0.03	0.03	-2.35
5,300.0	0.38	317.60	5,299.7	3,840.7	29.6	-0.7	-27.7	0.01	-0.01	-1.12
5,400.0	0.39	309.48	5,399.7	3,940.7	30.1	-1.2	-28.3	0.06	0.01	-8.12
5,500.0	0.37	313.55	5,499.7	4,040.7	30.5	-1.7	-28.9	0.03	-0.02	4.07
5,600.0	0.35	316.99	5,599.7	4,140.7	31.0	-2.2	-29.5	0.03	-0.02	3.44
5,700.0	0.38	316.94	5,699.7	4,240.7	31.4	-2.6	-30.0	0.03	0.03	-0.05
5,800.0	0.39	336.93	5,799.7	4,340.7	32.0	-3.0	-30.7	0.13	0.01	19.99
5,900.0	0.56	338.53	5,899.7	4,440.7	32.8	-3.3	-31.5	0.17	0.17	1.60
5,957.0	0.64	339.75	5,956.7	4,497.7	33.3	-3.5	-32.1	0.14	0.14	2.14
6,067.0	0.70	320.50	6,066.7	4,607.7	34.4	-4.1	-33.4	0.21	0.05	-17.50
6,099.0	0.70	323.60	6,098.7	4,639.7	34.7	-4.4	-33.8	0.12	0.00	9.69
6,130.0	0.70	321.20	6,129.7	4,670.7	35.0	-4.6	-34.1	0.09	0.00	-7.74
6,162.0	0.70	320.20	6,161.7	4,702.7	35.3	-4.9	-34.5	0.04	0.00	-3.13
6,193.0	0.80	328.20	6,192.7	4,733.7	35.7	-5.1	-34.9	0.47	0.32	25.81
6,225.0	2.00	340.10	6,224.7	4,765.7	36.4	-5.4	-35.7	3.84	3.75	37.19
6,256.0	4.30	343.80	6,255.6	4,796.6	38.0	-5.9	-37.4	7.44	7.42	11.94
6,288.0	6.00	348.20	6,287.5	4,828.5	40.8	-6.6	-40.2	5.45	5.31	13.75
6,319.0	7.90	354.40	6,318.3	4,859.3	44.5	-7.1	-43.8	6.58	6.13	20.00
6,350.0	9.60	0.30	6,348.9	4,889.9	49.2	-7.3	-48.3	6.19	5.48	19.03
6,381.0	11.60	6.70	6,379.4	4,920.4	54.9	-6.9	-53.4	7.48	6.45	20.65
6,413.0	13.30	9.20	6,410.6	4,951.6	61.7	-6.0	-59.3	5.57	5.31	7.81
6,445.0	14.90	11.80	6,441.6	4,982.6	69.4	-4.5	-65.8	5.38	5.00	8.13
6,476.0	16.70	14.70	6,471.5	5,012.5	77.6	-2.6	-72.7	6.34	5.81	9.35
6,508.0	18.60	18.20	6,502.0	5,043.0	86.9	0.2	-80.2	6.80	5.94	10.94
6,540.0	20.70	20.80	6,532.1	5,073.1	97.0	3.8	-88.2	7.11	6.56	8.13
6,571.0	23.10	22.30	6,560.9	5,101.9	107.8	8.0	-96.5	7.95	7.74	4.84
6,603.0	25.50	24.30	6,590.0	5,131.0	119.8	13.2	-105.7	7.93	7.50	6.25
6,635.0	28.10	26.30	6,618.6	5,159.6	132.9	19.4	-115.4	8.60	8.13	6.25
6,666.0	30.90	28.30	6,645.6	5,186.6	146.4	26.4	-125.2	9.57	9.03	6.45
6,698.0	33.90	29.70	6,672.6	5,213.6	161.4	34.7	-135.9	9.66	9.38	4.38
6,729.0	37.20	31.40	6,697.8	5,238.8	176.9	43.9	-146.7	11.11	10.65	5.48
6,761.0	40.20	33.00	6,722.8	5,263.8	193.9	54.6	-158.3	9.88	9.38	5.00
6,793.0	42.30	35.50	6,746.8	5,287.8	211.3	66.5	-169.9	8.34	6.56	7.81
6,824.0	42.10	39.80	6,769.8	5,310.8	227.8	79.2	-180.2	9.84	-0.65	13.87
6,856.0	40.10	44.70	6,793.9	5,334.9	243.3	93.3	-189.2	11.84	-6.25	15.31
6,887.0	37.80	49.90	6,818.0	5,359.0	256.6	107.6	-196.6	12.03	-7.42	16.77
6,919.0	36.30	55.60	6,843.6	5,384.6	268.2	122.9	-200.9	11.71	-4.69	17.81
6,950.0	34.80	60.10	6,868.8	5,409.8	277.8	138.2	-203.9	9.78	-4.84	14.52
6,982.0	34.00	64.60	6,895.2	5,436.2	286.2	154.2	-205.6	8.33	-2.50	14.06

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Wellbore:			
Design:			

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)
7,013.0	33.60	68.70	6,921.0	5,462.0	293.1	170.0	-205.9	7.47	-1.29	13.23
7,045.0	32.70	72.20	6,947.8	5,488.8	298.9	186.5	-205.0	6.61	-2.81	10.94
7,076.0	31.80	75.20	6,974.0	5,515.0	303.6	202.3	-203.2	5.92	-2.90	9.68
7,108.0	31.90	80.00	7,001.2	5,542.2	307.2	218.8	-200.2	7.92	0.31	15.00
7,139.0	32.70	86.10	7,027.4	5,568.4	309.2	235.2	-195.8	10.82	2.58	19.68
7,171.0	34.00	91.80	7,054.1	5,595.1	309.5	252.8	-189.4	10.60	4.06	17.81
7,202.0	35.50	97.80	7,079.6	5,620.6	308.0	270.4	-181.3	12.04	4.84	19.35
7,233.0	37.30	102.50	7,104.6	5,645.6	304.7	288.5	-171.3	10.70	5.81	15.16
7,265.0	39.40	107.10	7,129.7	5,670.7	299.7	307.7	-159.3	11.07	6.56	14.38
7,297.0	41.20	111.40	7,154.1	5,695.1	292.8	327.2	-145.5	10.35	5.63	13.44
7,328.0	43.00	115.70	7,177.1	5,718.1	284.5	346.2	-130.6	10.96	5.81	13.87
7,360.0	45.10	119.10	7,200.1	5,741.1	274.3	366.0	-113.6	9.88	6.56	10.63
7,391.0	47.00	122.30	7,221.6	5,762.6	262.9	385.1	-95.7	9.63	6.13	10.32
7,423.0	48.70	125.50	7,243.1	5,784.1	249.6	404.8	-76.0	9.12	5.31	10.00
7,454.0	50.10	128.30	7,263.2	5,804.2	235.5	423.6	-55.7	8.21	4.52	9.03
7,486.0	52.20	130.80	7,283.3	5,824.3	219.6	442.8	-33.7	8.95	6.56	7.81
7,517.0	54.00	133.10	7,301.9	5,842.9	203.0	461.3	-11.3	8.30	5.81	7.42
7,549.0	56.40	134.60	7,320.2	5,861.2	184.8	480.2	12.7	8.43	7.50	4.69
7,581.0	58.90	136.40	7,337.3	5,878.3	165.6	499.2	37.8	9.14	7.81	5.63
7,596.1	59.97	137.34	7,345.0	5,886.0	156.1	508.1	50.0	8.86	7.07	6.20
7,612.0	61.10	138.30	7,352.8	5,893.8	145.8	517.3	63.0	8.86	7.12	6.06
7,644.0	63.50	140.60	7,367.7	5,908.7	124.3	535.8	89.9	9.84	7.50	7.19
7,675.0	66.20	142.60	7,380.9	5,921.9	102.3	553.2	116.9	10.49	8.71	6.45
7,707.0	69.20	145.00	7,393.0	5,934.0	78.4	570.7	145.7	11.66	9.38	7.50
7,739.0	71.70	147.70	7,403.7	5,944.7	53.3	587.4	175.2	11.15	7.81	8.44
7,770.0	74.00	150.10	7,412.9	5,953.9	27.9	602.7	204.5	10.48	7.42	7.74
7,802.0	75.90	152.30	7,421.2	5,962.2	0.9	617.5	235.2	8.91	5.94	6.88
7,833.0	78.50	154.60	7,428.0	5,969.0	-26.2	631.0	265.4	11.08	8.39	7.42
7,865.0	80.60	155.70	7,433.8	5,974.8	-54.7	644.3	296.8	7.38	6.56	3.44
7,896.0	83.60	157.00	7,438.1	5,979.1	-82.9	656.6	327.5	10.53	9.68	4.19
7,928.0	85.10	158.20	7,441.2	5,982.3	-112.3	668.7	359.4	5.99	4.69	3.75
7,959.0	87.40	159.60	7,443.3	5,984.3	-141.2	679.9	390.3	8.68	7.42	4.52
7,991.0	88.90	160.80	7,444.3	5,985.3	-171.2	690.7	422.2	6.00	4.69	3.75
8,054.0	89.90	161.60	7,445.0	5,986.0	-230.9	711.0	485.1	2.03	1.59	1.27
8,117.0	88.90	161.30	7,445.6	5,986.6	-290.6	731.0	547.9	1.66	-1.59	-0.48
8,181.0	88.80	161.30	7,446.9	5,987.9	-351.2	751.5	611.8	0.16	-0.16	0.00
8,244.0	89.10	161.60	7,448.1	5,989.1	-410.9	771.6	674.6	0.67	0.48	0.48
8,307.0	88.60	161.30	7,449.3	5,990.3	-470.6	791.6	737.5	0.93	-0.79	-0.48
8,370.0	88.80	161.50	7,450.8	5,991.8	-530.3	811.7	800.3	0.45	0.32	0.32
8,433.0	89.40	161.90	7,451.8	5,992.8	-590.1	831.5	863.1	1.14	0.95	0.63
8,496.0	89.80	161.90	7,452.2	5,993.2	-650.0	851.1	925.9	0.63	0.63	0.00

Database:		Local Co-ordinate Reference:	
Company:		TVD Reference:	
Project:		MD Reference:	
Site:		North Reference:	
Well:		Survey Calculation Method:	
Wellbore:			
Design:			

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)
8,559.0	90.20	162.20	7,452.2	5,993.2	-710.0	870.5	988.8	0.79	0.63	0.48
8,622.0	90.80	162.50	7,451.6	5,992.6	-770.0	889.6	1,051.5	1.06	0.95	0.48
8,686.0	89.10	162.60	7,451.7	5,992.7	-831.0	908.8	1,115.3	2.66	-2.66	0.16
8,749.0	89.10	162.20	7,452.7	5,993.7	-891.1	927.8	1,178.0	0.63	0.00	-0.63
8,812.0	89.50	162.20	7,453.5	5,994.5	-951.1	947.1	1,240.8	0.63	0.63	0.00
8,875.0	90.20	162.70	7,453.6	5,994.6	-1,011.1	966.1	1,303.6	1.37	1.11	0.79
8,938.0	89.40	162.90	7,453.8	5,994.8	-1,071.3	984.7	1,366.3	1.31	-1.27	0.32
9,001.0	89.40	163.30	7,454.5	5,995.5	-1,131.6	1,003.0	1,429.0	0.63	0.00	0.63
9,064.0	89.50	162.50	7,455.1	5,996.1	-1,191.8	1,021.5	1,491.7	1.28	0.16	-1.27
9,128.0	87.70	160.80	7,456.7	5,997.7	-1,252.5	1,041.7	1,555.6	3.87	-2.81	-2.66
9,184.9	87.61	160.89	7,459.0	6,000.0	-1,306.3	1,060.3	1,612.3	0.22	-0.16	0.16
9,191.0	87.60	160.90	7,459.3	6,000.3	-1,312.0	1,062.3	1,618.4	0.22	-0.16	0.16
9,254.0	88.00	161.00	7,461.7	6,002.7	-1,371.5	1,082.9	1,681.2	0.65	0.63	0.16
9,317.0	88.20	160.90	7,463.8	6,004.8	-1,431.0	1,103.4	1,744.1	0.35	0.32	-0.16
9,380.0	89.80	162.00	7,464.9	6,005.9	-1,490.7	1,123.5	1,806.9	3.08	2.54	1.75
9,443.0	90.60	161.90	7,464.6	6,005.6	-1,550.6	1,143.0	1,869.7	1.28	1.27	-0.16
9,506.0	89.40	162.10	7,464.6	6,005.6	-1,610.5	1,162.4	1,932.6	1.93	-1.90	0.32
9,569.0	89.40	162.00	7,465.3	6,006.3	-1,670.5	1,181.9	1,995.4	0.16	0.00	-0.16
9,633.0	89.80	161.50	7,465.7	6,006.7	-1,731.2	1,201.9	2,059.2	1.00	0.63	-0.78
9,695.0	90.20	161.40	7,465.7	6,006.7	-1,790.0	1,221.6	2,121.0	0.67	0.65	-0.16
9,758.0	89.10	161.40	7,466.1	6,007.1	-1,849.7	1,241.7	2,183.9	1.75	-1.75	0.00
9,822.0	89.30	161.50	7,467.0	6,008.0	-1,910.4	1,262.1	2,247.7	0.35	0.31	0.16
9,885.0	90.40	162.10	7,467.2	6,008.2	-1,970.2	1,281.8	2,310.6	1.99	1.75	0.95
9,948.0	89.00	162.00	7,467.5	6,008.5	-2,030.2	1,301.2	2,373.4	2.23	-2.22	-0.16
10,011.0	88.50	161.80	7,468.9	6,009.9	-2,090.0	1,320.7	2,436.2	0.85	-0.79	-0.32
10,074.0	89.10	161.50	7,470.2	6,011.2	-2,149.8	1,340.6	2,499.0	1.06	0.95	-0.48
10,137.0	89.80	161.60	7,470.8	6,011.8	-2,209.6	1,360.5	2,561.8	1.12	1.11	0.16
10,200.0	90.50	162.30	7,470.7	6,011.7	-2,269.5	1,380.0	2,624.6	1.57	1.11	1.11
10,263.0	91.30	162.40	7,469.7	6,010.7	-2,329.5	1,399.1	2,687.4	1.28	1.27	0.16
10,326.0	90.10	162.30	7,468.9	6,009.9	-2,389.5	1,418.2	2,750.2	1.91	-1.90	-0.16
10,389.0	89.70	162.70	7,469.0	6,010.0	-2,449.6	1,437.2	2,812.9	0.90	-0.63	0.63
10,452.0	90.00	162.50	7,469.2	6,010.2	-2,509.7	1,456.0	2,875.7	0.57	0.48	-0.32
10,515.0	90.70	162.90	7,468.8	6,009.8	-2,569.9	1,474.7	2,938.4	1.28	1.11	0.63
10,579.0	91.30	162.90	7,467.7	6,008.7	-2,631.1	1,493.6	3,002.1	0.94	0.94	0.00
10,642.0	90.30	162.80	7,466.8	6,007.8	-2,691.2	1,512.1	3,064.9	1.60	-1.59	-0.16
10,705.0	90.10	162.80	7,466.6	6,007.6	-2,751.4	1,530.8	3,127.6	0.32	-0.32	0.00
10,768.0	89.10	161.80	7,467.0	6,008.0	-2,811.4	1,549.9	3,190.4	2.24	-1.59	-1.59
10,831.0	89.30	161.20	7,467.9	6,008.9	-2,871.2	1,569.9	3,253.2	1.00	0.32	-0.95
10,895.0	88.40	161.50	7,469.2	6,010.2	-2,931.8	1,590.4	3,317.1	1.48	-1.41	0.47
10,958.0	88.20	161.50	7,471.0	6,012.0	-2,991.5	1,610.3	3,379.9	0.32	-0.32	0.00
11,021.0	88.20	160.80	7,473.0	6,014.0	-3,051.1	1,630.7	3,442.7	1.11	0.00	-1.11
11,084.0	88.50	161.10	7,474.8	6,015.8	-3,110.6	1,651.2	3,505.6	0.67	0.48	0.48

Database:		Local Co-ordinate Reference:	
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Site:		North Reference:	
Well:		Survey Calculation Method:	
Wellbore:			
Design:			

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)
11,147.0	87.40	162.20	7,477.1	6,018.1	-3,170.4	1,671.1	3,568.4	2.47	-1.75	1.75
11,210.0	87.80	162.60	7,479.7	6,020.7	-3,230.4	1,690.1	3,631.1	0.90	0.63	0.63
11,274.0	88.20	162.70	7,482.0	6,023.0	-3,291.4	1,709.2	3,694.8	0.64	0.63	0.16
11,337.0	88.60	162.50	7,483.7	6,024.7	-3,351.5	1,728.0	3,757.5	0.71	0.63	-0.32
11,400.0	89.30	162.90	7,484.9	6,025.9	-3,411.7	1,746.7	3,820.3	1.28	1.11	0.63
11,464.0	89.90	162.90	7,485.3	6,026.3	-3,472.8	1,765.6	3,884.0	0.94	0.94	0.00
11,527.0	90.20	162.60	7,485.3	6,026.3	-3,533.0	1,784.2	3,946.7	0.67	0.48	-0.48
11,590.0	90.60	163.10	7,484.8	6,025.8	-3,593.2	1,802.8	4,009.4	1.02	0.63	0.79
11,654.0	91.00	163.30	7,483.9	6,024.9	-3,654.5	1,821.3	4,073.1	0.70	0.63	0.31
11,717.0	89.60	162.40	7,483.6	6,024.6	-3,714.7	1,839.9	4,135.9	2.64	-2.22	-1.43
11,780.0	89.50	162.20	7,484.1	6,025.1	-3,774.7	1,859.0	4,198.6	0.35	-0.16	-0.32
11,843.0	89.60	161.50	7,484.6	6,025.6	-3,834.5	1,878.7	4,261.5	1.12	0.16	-1.11
11,906.0	90.20	162.00	7,484.7	6,025.7	-3,894.4	1,898.4	4,324.3	1.24	0.95	0.79
11,969.0	89.50	161.50	7,484.9	6,025.9	-3,954.2	1,918.1	4,387.1	1.37	-1.11	-0.79
12,032.0	89.60	161.70	7,485.4	6,026.4	-4,014.0	1,938.0	4,449.9	0.35	0.16	0.32
12,095.0	89.90	161.60	7,485.6	6,026.6	-4,073.8	1,957.8	4,512.8	0.50	0.48	-0.16
12,159.0	88.80	162.70	7,486.4	6,027.4	-4,134.7	1,977.5	4,576.6	2.43	-1.72	1.72
12,222.0	88.30	162.10	7,488.0	6,029.0	-4,194.7	1,996.5	4,639.3	1.24	-0.79	-0.95
12,285.0	88.30	161.20	7,489.8	6,030.8	-4,254.5	2,016.3	4,702.1	1.43	0.00	-1.43
12,348.0	89.10	161.50	7,491.3	6,032.3	-4,314.2	2,036.5	4,765.0	1.36	1.27	0.48
12,411.0	89.50	160.90	7,492.0	6,033.0	-4,373.8	2,056.8	4,827.8	1.14	0.63	-0.95
12,475.0	89.70	160.50	7,492.5	6,033.5	-4,434.2	2,077.9	4,891.7	0.70	0.31	-0.63
12,538.0	90.20	160.80	7,492.5	6,033.5	-4,493.6	2,098.8	4,954.6	0.93	0.79	0.48
12,601.0	90.80	161.30	7,492.0	6,033.0	-4,553.2	2,119.3	5,017.5	1.24	0.95	0.79
12,664.0	89.20	161.80	7,492.0	6,033.0	-4,613.0	2,139.2	5,080.4	2.66	-2.54	0.79
12,728.0	89.00	162.40	7,493.0	6,034.0	-4,673.9	2,158.9	5,144.2	0.99	-0.31	0.94
12,791.0	89.00	162.50	7,494.1	6,035.1	-4,733.9	2,177.9	5,206.9	0.16	0.00	0.16
12,854.0	88.90	161.80	7,495.2	6,036.2	-4,793.9	2,197.2	5,269.7	1.12	-0.16	-1.11
12,918.0	89.90	162.60	7,495.9	6,036.9	-4,854.8	2,216.7	5,333.5	2.00	1.56	1.25
12,981.0	90.20	162.20	7,495.9	6,036.9	-4,914.9	2,235.8	5,396.3	0.79	0.48	-0.63
13,044.0	90.70	161.90	7,495.4	6,036.4	-4,974.8	2,255.2	5,459.1	0.93	0.79	-0.48
13,107.0	90.50	161.50	7,494.7	6,035.7	-5,034.6	2,275.0	5,521.9	0.71	-0.32	-0.63
13,170.0	91.20	162.50	7,493.8	6,034.8	-5,094.5	2,294.4	5,584.7	1.94	1.11	1.59
13,234.0	91.30	162.20	7,492.4	6,033.4	-5,155.5	2,313.8	5,648.4	0.49	0.16	-0.47
13,297.0	91.30	162.60	7,490.9	6,031.9	-5,215.5	2,332.9	5,711.2	0.63	0.00	0.63
13,360.0	91.30	162.30	7,489.5	6,030.5	-5,275.6	2,351.9	5,774.0	0.48	0.00	-0.48
13,423.0	88.30	162.20	7,489.7	6,030.7	-5,335.6	2,371.1	5,836.7	4.76	-4.76	-0.16
13,487.0	88.40	161.90	7,491.6	6,032.6	-5,396.4	2,390.8	5,900.[illegible]	[illegible]	[illegible]	-0.47
13,550.0	87.00	161.50	7,494.1	6,035.1	-5,456.2	2,410.6	5,963.3	2.31	-2.22	-0.63
13,613.0	86.90	161.50	7,497.4	6,038.4	-5,515.9	2,430.5	6,026.0	0.16	-0.16	0.00
13,676.0	87.10	161.30	7,500.7	6,041.7	-5,575.5	2,450.6	6,088.8	0.45	0.32	-0.32
13,739.0	88.60	161.70	7,503.1	6,044.1	-5,635.2	2,470.6	6,151.6	2.46	2.38	0.63

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Wellbore:			
Design:			

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)
13,802.0	89.10	161.90	7,504.4	6,045.4	-5,695.0	2,490.2	6,214.4	0.85	0.79	0.32
13,866.0	89.30	162.30	7,505.3	6,046.3	-5,755.9	2,509.9	6,278.2	0.70	0.31	0.63
13,929.0	89.10	161.90	7,506.1	6,047.1	-5,815.9	2,529.3	6,341.0	0.71	-0.32	-0.63
13,992.0	89.20	161.60	7,507.1	6,048.1	-5,875.7	2,549.0	6,403.8	0.50	0.16	-0.48
14,055.0	89.10	161.10	7,508.0	6,049.0	-5,935.4	2,569.1	6,466.7	0.81	-0.16	-0.79
14,118.0	90.30	162.20	7,508.3	6,049.3	-5,995.2	2,589.0	6,529.5	2.58	1.90	1.75
14,182.0	90.60	162.10	7,507.8	6,048.8	-6,056.1	2,608.6	6,593.3	0.49	0.47	-0.16
14,245.0	90.40	162.00	7,507.3	6,048.3	-6,116.0	2,628.0	6,656.1	0.35	-0.32	-0.16
14,308.0	90.20	161.50	7,507.0	6,048.0	-6,175.9	2,647.7	6,718.9	0.85	-0.32	-0.79
14,371.0	89.80	160.80	7,507.0	6,048.0	-6,235.5	2,668.1	6,781.8	1.28	-0.63	-1.11
14,434.0	89.60	160.80	7,507.3	6,048.3	-6,295.0	2,688.8	6,844.7	0.32	-0.32	0.00
14,497.0	89.10	160.10	7,508.0	6,049.0	-6,354.3	2,709.9	6,907.6	1.37	-0.79	-1.11
14,561.0	88.90	160.00	7,509.1	6,050.1	-6,414.5	2,731.7	6,971.6	0.35	-0.31	-0.16
14,624.0	89.20	161.40	7,510.2	6,051.2	-6,473.9	2,752.5	7,034.4	2.27	0.48	2.22
14,687.0	89.20	161.40	7,511.0	6,052.0	-6,533.6	2,772.6	7,097.3	0.00	0.00	0.00
14,751.0	89.00	160.70	7,512.1	6,053.1	-6,594.2	2,793.4	7,161.2	1.14	-0.31	-1.09
14,814.0	89.00	162.40	7,513.2	6,054.2	-6,653.9	2,813.3	7,224.0	2.70	0.00	2.70
14,878.0	89.20	163.00	7,514.2	6,055.2	-6,715.0	2,832.4	7,287.7	0.99	0.31	0.94
14,941.0	89.00	162.10	7,515.1	6,056.1	-6,775.1	2,851.3	7,350.5	1.46	-0.32	-1.43
15,004.0	90.20	162.30	7,515.6	6,056.6	-6,835.1	2,870.5	7,413.3	1.93	1.90	0.32
15,067.0	90.80	162.10	7,515.0	6,056.0	-6,895.1	2,889.8	7,476.1	1.00	0.95	-0.32
15,130.0	91.10	161.40	7,514.0	6,055.0	-6,954.9	2,909.5	7,538.9	1.21	0.48	-1.11
15,193.0	90.50	160.20	7,513.1	6,054.1	-7,014.4	2,930.2	7,601.8	2.13	-0.95	-1.90
15,257.0	90.00	158.90	7,512.8	6,053.8	-7,074.3	2,952.6	7,665.7	2.18	-0.78	-2.03
15,296.0	89.80	158.20	7,512.9	6,053.9	-7,110.6	2,966.8	7,704.7	1.87	-0.51	-1.79
15,349.0	89.80	158.20	7,513.1	6,054.1	-7,159.8	2,986.5	7,757.7	0.00	0.00	0.00

Formations

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
7,596.1	7,345.0	Top of Genesee@7345' TVD		0.00	
9,184.9	7,459.0	Top of Tully@7459' TVD		0.00	

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Wellbore:			
Design:			

Design Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates +N/-S (usft)	Local Coordinates +E/-W (usft)	Comment
5,957.0	5,956.7	33.3	-3.5	Gyro Tie In=5957' MD
6,193.0	6,192.7	35.7	-5.1	KOP=6193' MD
7,991.0	7,444.3	-171.2	690.7	LP=7991' MD/ 7444' TVD
15,004.0	7,515.6	-6,835.1	2,870.5	Deepest Point of Well=15004' MD/ 7516' TVD
15,296.0	7,512.9	-7,110.6	2,966.8	Final Survey=15296' MD/ 7513' TVD
15,349.0	7,513.1	-7,159.8	2,986.5	Projection to TD=15349' MD/ 7513' TVD

Checked By: _____ Approved By: _____ Date: _____

PHOENIX
TECHNOLOGY SERVICES

EQT Production - Geneseo Shale

Project: Wetzel County, WV
Site: Wetzel County 514564
Well: Well #514564
Wellbore: Main Wellbore
Design: As Drilled Surveys