103-02869

PHOENIX
TECHNOLOGY SERVICES

EQT Production - Marcellus

Wetzel County, WV
Wetzel County 514382
Well 514382

Main Wellbore

Survey: 514382 MWD

Standard Survey Report

16 December, 2013

EQT
Where energy meets innovation.

103-02869

PHOENIX TECHNOLOGY SERVICES

Phoenix Technology Services

Survey Report

EQT Where energy meets innovation.

Database:	EDM 5000.1 Single User Db	**Local Co-ordinate Reference:**	Site Wetzel County 514382
Company:	EQT Production - Marcellus	**TVD Reference:**	KB @ 1346.0usft (Original Well)
Project:	Wetzel County, WV	**MD Reference:**	KB @ 1346.0usft (Original Well)
Site:	Wetzel County 514382	**North Reference:**	Grid
Well:	Well 514382	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Main Wellbore		
Design:	As Drilled Surveys		

Project Wetzel 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		Using geodetic scale factor

Site Wetzel County 514382

Site Position:		**Northing:**	385,153.00 usft	**Latitude:**	39.55
From:	Map	**Easting:**	1,678,303.00 usft	**Longitude:**	-80.64
Position Uncertainty:	0.0 usft	**Slot Radius:**	13-3/16 "	**Grid Convergence:**	-0.73 °

Well Well 514382

Well Position	**+N/-S**	0.0 usft	**Northing:**	385,153.00 usft	**Latitude:**	39° 33' 6.703 N
	+E/-W	0.0 usft	**Easting:**	1,678,303.00 usft	**Longitude:**	80° 38' 27.220 W
Position Uncertainty		0.0 usft	**Wellhead Elevation:**	usft	**Ground Level:**	1,330.0 usft

Wellbore Main Wellbore

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010_14	12/10/2012	-8.57	67.14	52,595

Design As Drilled Surveys

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	171.68

Survey Program **Date** 12/16/2013

From ()	To (usft)	Survey (Wellbore)	Tool Name	Description
0.00	5,107.0	514382 Gyros (Main Wellbore)	GYD_DP_MS	Gyrodata gyro-compassing and drop
0.00	11,345.0	514382 MWD (Main Wellbore)	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)
5,107.0	0.84	59.02	5,106.8	3,760.8	-9.3	29.7	13.5	0.00	0.00	0.00
5,115.0	0.70	50.90	5,114.8	3,768.8	-9.3	29.8	13.5	2.21	-1.75	-101.50
5,147.0	0.60	22.80	5,146.8	3,800.8	-9.0	30.0	13.2	1.03	-0.31	-87.81
5,179.0	1.00	324.40	5,178.8	3,832.8	-8.6	29.9	12.8	2.67	1.25	-182.50
5,211.0	1.80	315.20	5,210.8	3,864.8	-8.0	29.4	12.2	2.59	2.50	-28.75
5,247.0	2.20	323.00	5,246.7	3,900.7	-7.1	28.6	11.1	1.34	1.11	21.67
5,278.0	3.30	307.70	5,277.7	3,931.7	-6.0	27.5	10.0	4.24	3.55	-49.35
5,310.0	5.60	287.40	5,309.6	3,963.6	-5.0	25.3	8.6	8.60	7.19	-63.44

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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)
5,342.0	8.30	281.70	5,341.4	3,995.4	-4.1	21.6	7.2	8.70	8.44	-17.81
5,373.0	11.30	285.50	5,371.9	4,025.9	-2.8	16.4	5.2	9.89	9.68	12.26
5,405.0	14.30	287.30	5,403.1	4,057.1	-0.8	9.6	2.2	9.46	9.38	5.63
5,437.0	16.90	287.60	5,433.9	4,087.9	1.8	1.4	-1.6	8.13	8.13	0.94
5,468.0	19.70	288.00	5,463.4	4,117.4	4.8	-7.8	-5.8	9.04	9.03	1.29
5,500.0	22.70	288.60	5,493.2	4,147.2	8.4	-18.8	-11.0	9.40	9.38	1.88
5,532.0	26.00	290.30	5,522.3	4,176.3	12.8	-31.3	-17.2	10.54	10.31	5.31
5,563.0	28.80	290.70	5,549.9	4,203.9	17.8	-44.6	-24.1	9.05	9.03	1.29
5,595.0	31.70	291.40	5,577.5	4,231.5	23.6	-59.7	-32.0	9.13	9.06	2.19
5,627.0	34.80	290.50	5,604.3	4,258.3	29.9	-76.0	-40.5	9.81	9.69	-2.81
5,658.0	37.50	290.10	5,629.3	4,283.3	36.2	-93.2	-49.3	8.74	8.71	-1.29
5,722.0	42.10	291.00	5,678.4	4,332.4	50.6	-131.5	-69.1	7.24	7.19	1.41
5,785.0	41.20	288.50	5,725.5	4,379.5	64.7	-170.9	-88.8	3.00	-1.43	-3.97
5,848.0	43.70	290.70	5,772.0	4,426.0	79.0	-211.0	-108.7	4.61	3.97	3.49
5,912.0	43.60	291.30	5,818.3	4,472.3	94.9	-252.2	-130.4	0.67	-0.16	0.94
5,975.0	43.40	294.20	5,864.0	4,518.0	111.6	-292.2	-152.7	3.18	-0.32	4.60
6,039.0	43.10	292.80	5,910.6	4,564.6	129.1	-332.4	-175.9	1.57	-0.47	-2.19
6,102.0	44.00	293.10	5,956.3	4,610.3	146.0	-372.4	-198.4	1.47	1.43	0.48
6,176.0	42.30	291.80	6,010.3	4,664.3	165.4	-419.1	-224.3	2.59	-2.30	-1.76
6,239.0	43.40	292.10	6,056.5	4,710.5	181.4	-458.9	-245.9	1.78	1.75	0.48
6,303.0	45.40	295.20	6,102.2	4,756.2	199.4	-499.9	-269.6	4.61	3.13	4.84
6,366.0	44.70	294.10	6,146.7	4,800.7	218.0	-540.4	-293.9	1.66	-1.11	-1.75
6,429.0	43.40	292.50	6,192.0	4,846.0	235.3	-580.6	-316.9	2.72	-2.06	-2.54
6,492.0	43.00	293.10	6,237.9	4,891.9	252.0	-620.4	-339.2	0.91	-0.63	0.95
6,556.0	41.60	294.50	6,285.3	4,939.3	269.4	-659.8	-362.0	2.64	-2.19	2.19
6,619.0	42.60	293.40	6,332.0	4,986.0	286.5	-698.4	-384.6	1.97	1.59	-1.75
6,683.0	44.30	292.80	6,378.5	5,032.5	303.8	-738.9	-407.5	2.73	2.66	-0.94
6,746.0	43.20	291.00	6,424.0	5,078.0	320.0	-779.3	-429.5	2.64	-1.75	-2.86
6,809.0	41.60	289.80	6,470.5	5,124.5	334.8	-819.1	-449.9	2.85	-2.54	-1.90
6,873.0	42.80	292.00	6,517.9	5,171.9	350.2	-859.3	-470.9	2.97	1.88	3.44
6,936.0	42.10	291.60	6,564.4	5,218.4	366.0	-898.7	-492.2	1.19	-1.11	-0.63
6,968.0	39.50	287.40	6,588.6	5,242.6	373.0	-918.4	-502.0	11.81	-8.13	-13.13
6,999.0	37.80	282.80	6,612.8	5,266.8	378.0	-937.1	-509.7	10.77	-5.48	-14.84
7,031.0	36.30	278.50	6,638.4	5,292.4	381.6	-956.0	-516.0	9.35	-4.69	-13.44
7,063.0	34.20	272.90	6,664.5	5,318.5	383.5	-974.4	-520.5	12.04	-6.56	-17.50
7,094.0	34.40	269.20	6,690.1	5,344.1	383.8	-991.9	-523.3	6.76	0.65	-11.94
7,126.0	32.80	263.30	6,716.8	5,370.8	382.6	-1,009.5	-524.8	11.36	-5.00	-18.44
7,158.0	31.70	258.00	6,743.9	5,397.9	379.9	-1,026.3	-524.5	9.48	-3.44	-16.56
7,189.0	30.40	252.80	6,770.4	5,424.4	375.9	-1,041.8	-522.7	9.61	-4.19	-16.77
7,221.0	29.10	246.70	6,798.2	5,452.2	370.4	-1,056.7	-519.5	10.29	-4.06	-19.06
7,253.0	29.80	243.30	6,826.1	5,480.1	363.7	-1,070.9	-514.9	5.66	2.19	-10.63
7,284.0	30.80	238.40	6,852.8	5,506.8	356.1	-1,084.6	-509.4	8.60	3.23	-15.81

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7,316.0	31.80	232.80	6,880.2	5,534.2	346.7	-1,098.3	-502.1	9.61	3.13	-17.50
7,348.0	32.10	225.00	6,907.4	5,561.4	335.6	-1,111.0	-492.9	12.93	0.94	-24.38
7,379.0	32.30	217.10	6,933.6	5,587.6	323.2	-1,121.8	-482.2	13.59	0.65	-25.48
7,411.0	32.90	210.90	6,960.6	5,614.6	308.9	-1,131.5	-469.4	10.60	1.88	-19.38
7,443.0	33.50	202.90	6,987.4	5,641.4	293.3	-1,139.4	-455.1	13.81	1.88	-25.00
7,474.0	35.50	196.20	7,012.9	5,666.9	276.8	-1,145.2	-439.6	13.83	6.45	-21.61
7,506.0	37.90	193.00	7,038.6	5,692.6	258.3	-1,150.0	-422.0	9.59	7.50	-10.00
7,538.0	40.60	189.00	7,063.3	5,717.3	238.4	-1,153.9	-402.9	11.56	8.44	-12.50
7,569.0	42.40	186.00	7,086.6	5,740.6	218.0	-1,156.5	-383.2	8.65	5.81	-9.68
7,601.0	45.90	181.70	7,109.5	5,763.5	195.8	-1,158.0	-361.4	14.39	10.94	-13.44
7,633.0	48.00	179.40	7,131.4	5,785.4	172.4	-1,158.2	-338.3	8.40	6.56	-7.19
7,665.0	50.70	177.10	7,152.2	5,806.2	148.2	-1,157.5	-314.2	10.05	8.44	-7.19
7,696.0	53.10	175.90	7,171.3	5,825.3	123.8	-1,156.0	-289.9	8.32	7.74	-3.87
7,728.0	56.60	174.40	7,189.8	5,843.8	97.8	-1,153.8	-263.7	11.59	10.94	-4.69
7,760.0	59.10	173.20	7,206.8	5,860.8	70.8	-1,150.8	-236.7	8.43	7.81	-3.75
7,791.0	60.80	171.40	7,222.3	5,876.3	44.2	-1,147.2	-209.8	7.44	5.48	-5.81
7,823.0	63.40	170.50	7,237.3	5,891.3	16.3	-1,142.8	-181.6	8.50	8.13	-2.81
7,855.0	65.80	169.10	7,251.0	5,905.0	-12.1	-1,137.7	-152.7	8.48	7.50	-4.38
7,886.0	67.70	168.00	7,263.3	5,917.3	-40.1	-1,132.0	-124.2	6.94	6.13	-3.55
7,918.0	67.90	167.00	7,275.3	5,929.3	-69.0	-1,125.6	-94.7	2.96	0.63	-3.13
7,950.0	70.90	164.80	7,286.6	5,940.6	-98.0	-1,118.3	-64.9	11.37	9.38	-6.88
7,981.0	73.40	163.20	7,296.1	5,950.1	-126.4	-1,110.1	-35.7	9.44	8.06	-5.16
8,013.0	76.20	161.40	7,304.5	5,958.5	-155.8	-1,100.8	-5.2	10.30	8.75	-5.63
8,045.0	78.70	159.20	7,311.4	5,965.4	-185.2	-1,090.2	25.4	10.30	7.81	-6.88
8,076.0	81.90	157.00	7,316.7	5,970.7	-213.5	-1,078.8	55.1	12.47	10.32	-7.10
8,108.0	84.30	154.10	7,320.5	5,974.5	-242.5	-1,065.7	85.6	11.71	7.50	-9.06
8,140.0	85.10	154.10	7,323.5	5,977.5	-271.1	-1,051.8	116.0	2.50	2.50	0.00
514382 LP 120' VS										
8,144.6	85.14	153.97	7,323.9	5,977.9	-275.2	-1,049.8	120.3	2.90	0.82	-2.79
8,201.0	85.60	152.40	7,328.4	5,982.4	-325.4	-1,024.4	173.7	2.90	0.82	-2.79
8,264.0	87.10	152.90	7,332.4	5,986.4	-381.3	-995.5	233.1	2.51	2.38	0.79
8,360.0	90.10	152.20	7,334.8	5,988.8	-466.4	-951.3	323.8	3.21	3.13	-0.73
514382 Plat LP										
8,394.9	90.85	152.31	7,334.5	5,988.5	-497.3	-935.0	356.7	2.17	2.14	0.32
8,486.0	92.80	152.60	7,331.6	5,985.6	-578.0	-892.9	442.7	2.17	2.14	0.32
8,613.0	92.50	152.20	7,325.7	5,979.7	-690.5	-834.2	562.4	0.39	-0.24	-0.31
8,740.0	89.90	152.00	7,323.1	5,977.1	-802.7	-774.7	682.0	2.05	-2.05	-0.16
8,866.0	88.50	153.80	7,324.8	5,978.8	-914.8	-717.4	801.3	1.81	-1.11	1.43
8,993.0	89.80	154.20	7,326.7	5,980.7	-1,028.9	-661.7	922.3	1.07	1.02	0.31
9,120.0	91.60	152.70	7,325.1	5,979.1	-1,142.5	-604.9	1,042.9	1.84	1.42	-1.18
9,183.0	92.30	152.70	7,323.0	5,977.0	-1,198.5	-576.1	1,102.5	1.11	1.11	0.00
9,246.0	91.60	152.50	7,320.9	5,974.9	-1,254.4	-547.1	1,162.0	1.16	-1.11	-0.32
9,310.0	90.80	151.70	7,319.5	5,973.5	-1,310.9	-517.1	1,222.2	1.77	-1.25	-1.25

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9,373.0	89.10	151.50	7,319.6	5,973.6	-1,366.3	-487.2	1,281.4	2.72	-2.70	-0.32
9,437.0	89.20	151.50	7,320.5	5,974.5	-1,422.6	-456.6	1,341.5	0.16	0.16	0.00
9,500.0	88.70	150.90	7,321.7	5,975.7	-1,477.8	-426.3	1,400.5	1.24	-0.79	-0.95
9,563.0	88.60	151.10	7,323.2	5,977.2	-1,532.9	-395.8	1,459.4	0.35	-0.16	0.32
9,627.0	88.70	151.90	7,324.7	5,978.7	-1,589.1	-365.2	1,519.5	1.26	0.16	1.25
9,690.0	89.00	151.90	7,325.9	5,979.9	-1,644.7	-335.6	1,578.7	0.48	0.48	0.00
9,753.0	88.90	151.70	7,327.1	5,981.1	-1,700.2	-305.8	1,638.0	0.35	-0.16	-0.32
9,817.0	89.00	151.60	7,328.3	5,982.3	-1,756.5	-275.4	1,698.1	0.22	0.16	-0.16
9,880.0	89.10	151.40	7,329.3	5,983.3	-1,811.8	-245.4	1,757.2	0.35	0.16	-0.32
9,944.0	88.40	148.30	7,330.7	5,984.7	-1,867.2	-213.2	1,816.6	4.96	-1.09	-4.84
10,007.0	89.60	148.30	7,331.8	5,985.8	-1,920.8	-180.1	1,874.4	1.90	1.90	0.00
10,070.0	91.30	149.40	7,331.3	5,985.3	-1,974.7	-147.5	1,932.5	3.21	2.70	1.75
10,134.0	91.50	149.00	7,329.7	5,983.7	-2,029.6	-114.8	1,991.6	0.70	0.31	-0.63
10,197.0	91.90	149.00	7,327.9	5,981.9	-2,083.6	-82.3	2,049.7	0.63	0.63	0.00
10,261.0	92.80	148.60	7,325.2	5,979.2	-2,138.3	-49.2	2,108.6	1.54	1.41	-0.63
10,324.0	91.60	149.60	7,322.8	5,976.8	-2,192.3	-16.9	2,166.8	2.48	-1.90	1.59
10,387.0	90.90	150.80	7,321.5	5,975.5	-2,247.0	14.4	2,225.4	2.20	-1.11	1.90
10,451.0	90.80	151.20	7,320.5	5,974.5	-2,302.9	45.4	2,285.3	0.64	-0.16	0.63
10,514.0	89.20	152.00	7,320.5	5,974.5	-2,358.3	75.4	2,344.4	2.84	-2.54	1.27
10,577.0	88.80	153.20	7,321.6	5,975.6	-2,414.3	104.4	2,404.0	2.01	-0.63	1.90
10,640.0	86.90	154.20	7,324.0	5,978.0	-2,470.7	132.3	2,463.8	3.41	-3.02	1.59
10,703.0	86.60	154.10	7,327.5	5,981.5	-2,527.3	159.7	2,523.8	0.50	-0.48	-0.16
10,767.0	86.50	154.10	7,331.4	5,985.4	-2,584.8	187.6	2,584.7	0.16	-0.16	0.00
10,830.0	86.90	154.10	7,335.0	5,989.0	-2,641.4	215.1	2,644.7	0.63	0.63	0.00
10,893.0	88.60	154.90	7,337.5	5,991.5	-2,698.2	242.2	2,704.8	2.98	2.70	1.27
10,957.0	89.10	155.40	7,338.8	5,992.8	-2,756.2	269.1	2,766.2	1.10	0.78	0.78
11,020.0	88.20	154.10	7,340.3	5,994.3	-2,813.2	295.9	2,826.4	2.51	-1.43	-2.06
11,083.0	87.90	153.40	7,342.4	5,996.4	-2,869.7	323.8	2,886.3	1.21	-0.48	-1.11
11,147.0	88.20	154.80	7,344.6	5,998.6	-2,927.2	351.7	2,947.3	2.24	0.47	2.19
11,210.0	88.30	154.90	7,346.5	6,000.5	-2,984.2	378.5	3,007.6	0.22	0.16	0.16
11,273.0	87.70	154.50	7,348.7	6,002.7	-3,041.1	405.4	3,067.8	1.14	-0.95	-0.63
Final Survey MD=11285'										
11,285.0	87.60	155.00	7,349.2	6,003.2	-3,052.0	410.5	3,079.3	4.25	-0.83	4.17
Projection to Bit MD=11345' - 514382 TD2										
11,345.0	87.60	155.00	7,351.7	6,005.7	-3,106.3	435.8	3,136.7	0.00	0.00	0.00

Survey Annotations

Measured Depth ()	Vertical Depth ()	Local Coordinates +N/-S ()	Local Coordinates +E/-W ()	Comment
5,107.0				Gyro Tie In MD=5107'
11,285.0	7,349.2	-3,052.0	410.5	Final Survey MD=11285'
11,345.0	7,351.7	-3,106.3	435.8	Projection to Bit MD=11345'

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103-02869

PHOENIX TECHNOLOGY SERVICES

Phoenix Technology Services

Survey Report

EQT Where energy meets innovation.

Database:	EDM 5000.1 Single User Db	**Local Co-ordinate Reference:**	Site Wetzel County 514382
Company:	EQT Production - Marcellus	**TVD Reference:**	KB @ 1346.0usft (Original Well)
Project:	Wetzel County, WV	**MD Reference:**	KB @ 1346.0usft (Original Well)
Site:	Wetzel County 514382	**North Reference:**	Grid
Well:	Well 514382	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Main Wellbore		
Design:	As Drilled Surveys		

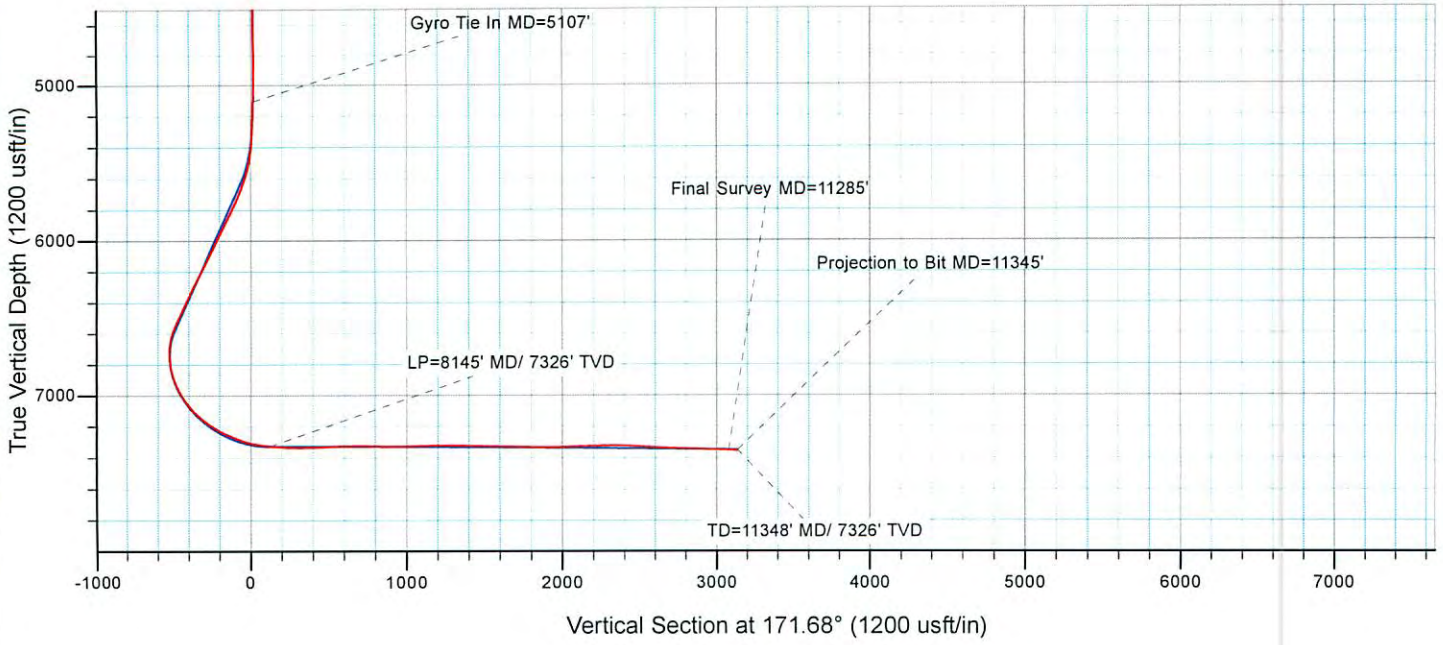
Checked By: _____ Approved By: _____ Date: _____

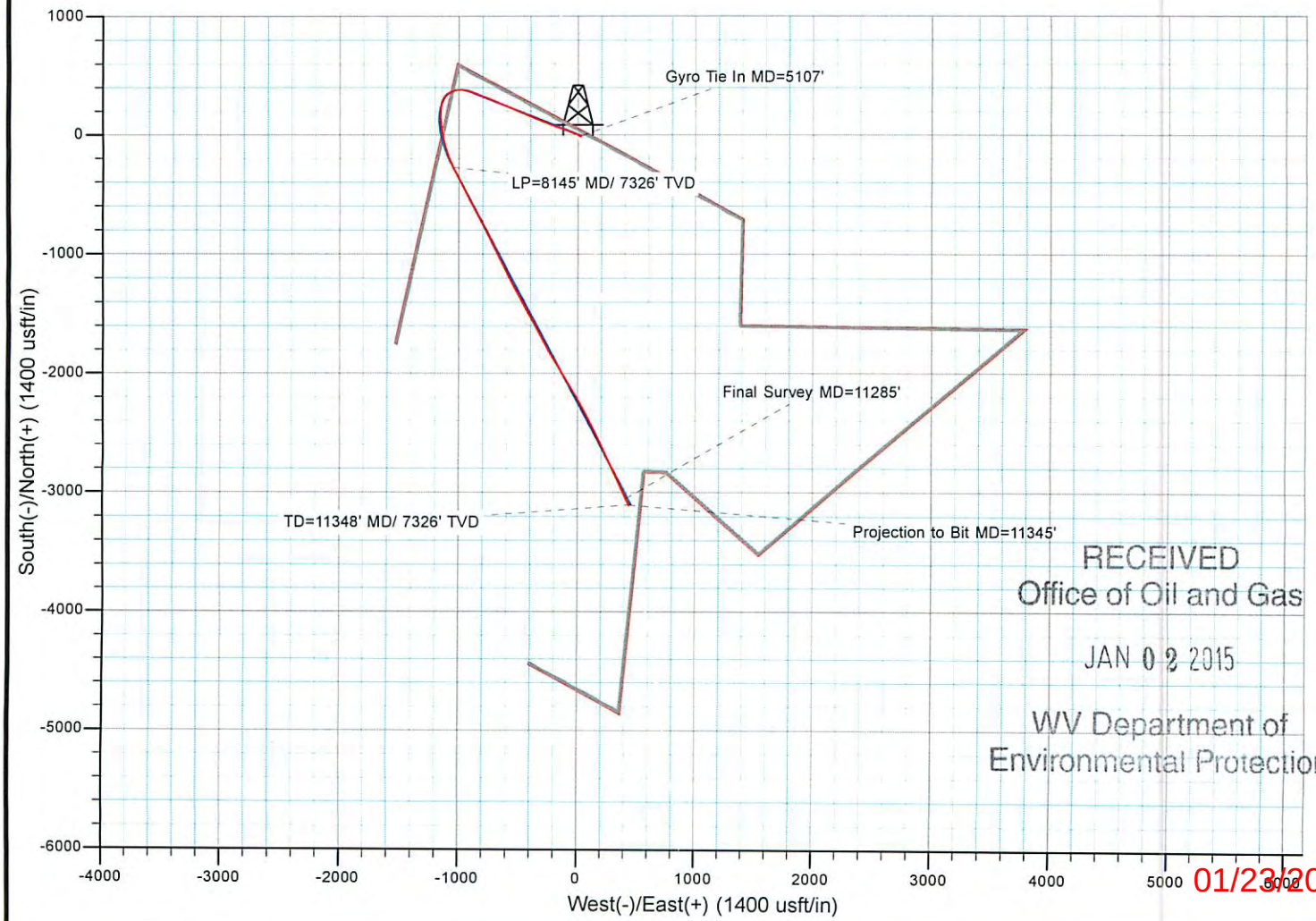
103-02869

PHOENIX
TECHNOLOGY SERVICES

EQT Production - Marcellus

Project: Wetzel County, WV
Site: Wetzel County 514382
Well: Well 514382
Wellbore: Main Wellbore
Design: As Drilled Surveys





01/23/2015