



Where energy meets innovation.

EQT PRODUCTION

Marion County, WV

GLO76 Pad

Well #514744- Marcellus - Slot 514744

Main Wellbore

Design: 514744 As Drilled Surveys

Standard Survey Report

24 November, 2015



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Environmental Protection

09/15/2017



Professional Directional Survey Report



Company:	EQT PRODUCTION	Local Co-ordinate Reference:	Well Well #514744- Marcellus - Slot 514744
Project:	Marion County, WV	TVD Reference:	GL 1424 + 23' KB @ 1447.00usft
Site:	GLO76 Pad	MD Reference:	GL 1424 + 23' KB @ 1447.00usft
Well:	Well #514744- Marcellus	North Reference:	Grid
Wellbore:	Main Wellbore	Survey Calculation Method:	Minimum Curvature
Design:	514744 As Drilled Surveys	Database:	Well_Planner1

Project	Marion 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		

Site	GLO76 Pad		
Site Position:	Northing:	389,060.60 usft	Latitude: 39° 33' 50.33 N
From: Map	Easting:	1,721,015.30 usft	Longitude: 80° 29' 22.49 W
Position Uncertainty:	0.00 usft	Slot Radius: 13-3/16 "	Grid Convergence: -0.63 °

Well	Well #514744- Marcellus - Slot 514744		
Well Position	+N/-S	0.00 usft	Northing: 389,060.60 usft
	+E/-W	0.00 usft	Easting: 1,721,015.30 usft
Position Uncertainty	0.00 usft	Wellhead Elevation:	1,447.00 usft
		Ground Level:	1,424.00 usft

Wellbore	Main Wellbore		
Magnetics	Model Name	Sample Date	Declination (°)
	HDGM	11/12/2015	-8.65
			Dip Angle (°) 67.03
			Field Strength (nT) 52,523

Design	514744 As Drilled Surveys		
Audit Notes:			
Version:	1.0	Phase:	ACTUAL
			Tie On Depth: 0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)
	0.00	0.00	0.00
			Direction (°) 178.09

Survey Program	Date	11/24/2015		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
110.00	4,735.00	514744 Gyrodata Gyros (Main Wellbore)	GYD_DP_MS	Gyrodata gyro-compassing and drop
4,764.00	7,440.00	514744 PHX MWD-Air Curve (Main Wellbo	MWD+IGRF	MWD+IGRF v3:standard declination
7,480.00	13,610.00	ProDirectional (Main Wellbore)	MWD+IGRF	MWD+IGRF v3:standard declination

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
110.00	0.15	214.01	110.00	-0.12	-0.08	0.12	0.14	0.14	0.00
210.00	0.10	212.85	210.00	-0.30	-0.20	0.29	0.05	-0.05	-1.15
310.00	0.04	174.94	310.00	-0.41	-0.25	0.40	0.07	-0.05	-37.99
410.00	0.08	332.70	410.00	-0.38	-0.27	0.37	0.12	0.04	157.76
510.00	0.06	15.00	510.00	-0.27	-0.29	0.26	0.05	-0.02	42.30
610.00	0.08	328.61	610.00	-0.16	-0.32	0.15	0.06	0.02	-46.39
710.00	0.08	299.64	710.00	-0.07	-0.41	0.05	0.04	0.00	-28.97
810.00	0.08	328.20	810.00	0.03	-0.51	-0.05	0.04	0.00	26.56

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Site:	GLO76 Pad	MD Reference:	GL 1424 + 23' KB @ 1447.00usft
Well:	Well #514744- Marcellus	North Reference:	Grid
Wellbore:	Main Wellbore	Survey Calculation Method:	Minimum Curvature
Design:	514744 As Drilled Surveys	Database:	Well_Planner1

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
910.00	0.15	302.14	910.00	0.16	-0.66	-0.18	0.09	0.07	-26.06
1,010.00	0.57	287.99	1,010.00	0.38	-1.24	-0.42	0.43	0.42	-14.15
1,110.00	0.65	287.67	1,109.99	0.71	-2.26	-0.78	0.08	0.08	-0.32
1,210.00	0.82	283.32	1,209.98	1.04	-3.49	-1.16	0.18	0.17	-4.35
1,310.00	0.88	288.66	1,309.97	1.45	-4.92	-1.62	0.10	0.06	5.24
1,410.00	1.00	295.33	1,409.96	2.07	-6.43	-2.28	0.16	0.12	6.77
1,510.00	1.29	305.18	1,509.94	3.09	-8.14	-3.36	0.35	0.29	9.85
1,610.00	1.46	309.70	1,609.91	4.56	-10.04	-4.89	0.20	0.17	4.62
1,710.00	1.47	313.78	1,709.88	6.26	-11.95	-3.65	0.10	0.01	4.08
1,810.00	1.44	318.92	1,809.84	8.09	-13.70	-3.54	0.13	-0.03	5.14
1,910.00	1.29	319.86	1,909.82	9.90	-15.25	-10.40	0.15	-0.15	0.94
2,010.00	1.27	315.74	2,009.79	11.55	-16.75	-12.10	0.09	-0.02	-4.12
2,110.00	1.43	303.31	2,109.76	13.03	-18.57	-13.64	0.33	0.16	-12.43
2,210.00	1.48	303.50	2,209.73	14.43	-20.69	-15.11	0.05	0.05	0.19
2,310.00	1.50	305.11	2,309.70	15.90	-22.83	-15.65	0.05	0.02	1.61
2,410.00	1.37	311.81	2,409.67	17.44	-24.80	-13.26	0.21	-0.13	6.70
2,510.00	1.22	313.02	2,509.64	18.97	-26.46	-19.84	0.15	-0.15	1.21
2,610.00	1.16	312.57	2,609.62	20.38	-27.99	-21.30	0.06	-0.06	-0.45
2,710.00	1.20	311.64	2,709.60	21.76	-29.52	-22.73	0.04	0.04	-0.93
2,810.00	1.07	311.49	2,809.58	23.07	-31.00	-24.09	0.13	-0.13	-0.15
2,910.00	0.98	311.39	2,909.56	24.26	-32.34	-25.32	0.09	-0.09	-0.10
3,010.00	0.82	313.55	3,009.55	25.32	-33.50	-26.42	0.16	-0.16	2.16
3,110.00	0.74	321.12	3,109.54	26.31	-34.42	-27.44	0.13	-0.08	7.57
3,210.00	0.68	324.80	3,209.53	27.30	-35.17	-28.46	0.08	-0.06	3.68
3,310.00	0.71	324.22	3,309.53	28.29	-35.88	-29.47	0.03	0.03	-0.58
3,410.00	0.80	320.79	3,409.52	29.33	-36.68	-30.54	0.10	0.09	-3.43
3,510.00	0.98	305.86	3,509.51	30.37	-37.81	-31.62	0.29	0.18	-14.93
3,610.00	1.11	298.29	3,609.49	31.33	-39.36	-32.63	0.19	0.13	-7.57
3,710.00	0.99	299.34	3,709.47	32.22	-40.97	-33.56	0.12	-0.12	1.05
3,810.00	0.83	299.25	3,809.46	32.99	-42.35	-34.39	0.16	-0.16	-0.09
3,910.00	0.71	296.82	3,909.45	33.63	-43.54	-35.06	0.12	-0.12	-2.43
4,010.00	0.72	294.84	4,009.44	34.17	-44.66	-35.64	0.03	0.01	-1.98
4,110.00	0.82	291.82	4,109.43	34.70	-45.89	-36.21	0.11	0.10	-3.22
4,210.00	0.83	297.11	4,209.42	35.29	-47.20	-36.84	0.08	0.01	5.49
4,310.00	0.94	294.57	4,309.41	35.96	-48.59	-37.56	0.12	0.11	-2.54
4,410.00	0.96	299.26	4,409.40	36.71	-50.07	-38.36	0.08	0.02	4.69
4,510.00	0.80	300.76	4,509.39	37.48	-51.40	-39.17	0.16	-0.16	11.50
4,610.00	0.84	307.61	4,609.38	38.28	-52.68	-40.01	0.11	0.04	6.85
4,710.00	0.79	326.63	4,709.37	39.31	-53.54	-41.07	0.27	-0.05	9.02
4,735.00	0.77	334.24	4,734.36	39.60	-53.71	-41.37	0.42	0.08	30.44
4,764.00	1.70	349.60	4,763.36	40.20	-53.87	-41.97	3.38	3.21	52.97
4,807.00	6.00	347.90	4,806.25	43.03	-54.46	-44.82	10.00	10.00	-3.95
4,851.00	10.40	347.70	4,849.79	49.16	-55.79	-50.99	10.00	10.00	-0.45

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Wellbore:	Main Wellbore	Survey Calculation Method:	Minimum Curvature
Design:	514744 As Drilled Surveys	Database:	Well_Planner1

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
4,893.00	14.30	342.30	4,890.81	57.81	-58.17	-59.71	9.67	9.29	-12.86
4,936.00	14.00	327.80	4,932.52	67.27	-62.56	-89.32	8.25	-0.70	-33.72
4,979.00	14.20	311.90	4,974.24	75.20	-69.26	-77.46	8.99	0.47	-36.98
5,022.00	15.80	297.40	5,015.79	81.42	-78.39	-83.98	9.46	3.72	-33.72
5,065.00	18.30	290.20	5,056.90	86.44	-89.92	-89.39	7.60	5.81	-16.74
5,108.00	19.90	286.00	5,097.53	90.79	-103.30	-94.18	4.90	3.72	-9.77
5,151.00	20.30	277.10	5,137.92	93.73	-117.74	-97.60	7.17	0.93	-20.70
5,194.00	20.10	267.10	5,178.29	94.28	-132.52	-98.64	8.03	-0.47	-23.26
5,237.00	20.60	259.60	5,218.61	92.54	-147.34	-97.40	6.17	1.16	-17.44
5,280.00	24.10	260.20	5,258.38	89.68	-163.44	-95.08	8.16	8.14	1.40
5,323.00	26.78	255.88	5,297.21	85.82	-181.49	-91.82	7.58	6.23	-10.05
5,367.00	30.18	253.06	5,335.88	80.18	-201.69	-86.85	8.31	7.73	-6.41
5,410.00	33.89	252.44	5,372.32	73.41	-223.47	-80.82	8.66	8.63	-1.44
5,453.00	37.61	252.35	5,407.22	65.81	-247.41	-74.02	8.65	8.65	-0.21
5,496.00	41.71	251.47	5,440.31	57.28	-273.49	-66.36	9.62	9.53	-2.05
5,539.00	42.29	250.94	5,472.27	48.01	-300.72	-58.01	1.58	1.35	-1.23
5,582.00	41.56	252.05	5,504.26	38.89	-327.97	-49.60	2.39	-1.65	2.58
5,625.00	41.89	253.85	5,536.34	30.50	-355.34	-42.32	2.88	0.72	4.19
5,668.00	41.98	253.54	5,568.33	22.43	-382.92	-35.18	0.53	0.21	-0.72
5,711.00	43.22	254.38	5,599.98	14.39	-410.89	-28.08	3.17	2.88	1.95
5,754.00	43.79	254.38	5,631.17	6.42	-439.40	-21.06	1.33	1.33	0.00
5,797.00	44.50	254.07	5,662.03	-1.72	-468.22	-13.88	1.73	1.65	-0.72
5,840.00	44.19	253.68	5,692.78	-10.07	-497.09	-6.50	0.96	-0.72	-0.91
5,883.00	43.88	253.76	5,723.69	-18.45	-525.78	0.91	0.73	-0.72	0.19
5,926.00	43.22	252.27	5,754.86	-27.10	-554.12	8.62	2.84	-1.53	-3.47
5,969.00	42.51	251.56	5,786.38	-36.18	-581.92	16.76	2.00	-1.65	-1.65
6,012.00	41.89	252.18	5,818.23	-45.17	-609.37	24.83	1.74	-1.44	1.44
6,055.00	41.41	253.94	5,850.36	-53.49	-636.71	32.25	2.94	-1.12	4.09
6,098.00	40.61	253.54	5,882.81	-61.39	-663.79	39.24	1.96	-1.86	-0.93
6,141.00	39.90	253.06	5,915.63	-69.38	-690.41	46.33	1.80	-1.65	-1.12
6,185.00	40.79	254.25	5,949.16	-77.39	-717.74	53.43	2.68	2.02	2.70
6,228.00	40.39	254.38	5,981.81	-84.95	-744.68	60.09	0.95	-0.93	0.30
6,271.00	41.18	255.17	6,014.37	-92.33	-771.78	66.56	2.19	1.84	1.84
6,314.00	41.10	255.97	6,046.76	-99.38	-799.18	72.69	1.24	-0.19	1.86
6,357.00	41.41	255.88	6,079.08	-106.27	-826.68	78.67	0.73	0.72	-0.21
6,400.00	39.99	255.44	6,111.68	-113.22	-853.85	84.70	3.37	-3.30	-1.02
6,443.00	39.59	254.95	6,144.72	-120.25	-880.45	90.84	1.18	-0.93	0.14
6,486.00	40.30	254.87	6,177.69	-127.44	-907.11	97.14	1.66	-0.19	-0.19
6,529.00	39.59	254.78	6,210.66	-134.66	-933.75	103.47	1.66	-1.65	-0.21
6,572.00	39.81	254.65	6,243.74	-141.90	-960.25	109.83	0.55	0.51	-0.30
6,615.00	39.81	254.25	6,276.77	-149.28	-986.77	116.32	0.60	0.00	-0.93
6,658.00	40.70	252.84	6,309.59	-157.16	-1,013.42	123.30	2.96	2.07	-3.28
6,701.00	39.90	251.65	6,342.38	-165.64	-1,039.90	130.89	2.58	-1.86	-2.72

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Survey

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6,744.00	41.71	252.35	6,374.93	-174.32	-1,068.63	138.67	4.34	4.21	1.63
6,787.00	42.60	254.38	6,406.81	-182.57	-1,094.28	146.00	3.78	2.07	4.72
6,831.00	42.29	257.07	6,439.28	-189.90	-1,123.05	152.38	4.19	-0.70	6.11
6,874.00	41.71	256.28	6,471.24	-196.53	-1,151.05	158.06	1.82	-1.35	-1.84
6,917.00	42.29	256.67	6,503.19	-203.25	-1,179.02	163.85	1.48	1.35	0.91
6,960.00	42.69	256.54	6,534.90	-209.98	-1,207.27	169.63	0.95	0.93	-0.30
7,003.00	42.42	257.30	6,566.57	-216.56	-1,235.60	175.27	1.35	-0.63	1.77
7,046.00	43.08	257.47	6,598.15	-222.94	-1,264.08	180.69	1.55	1.53	0.40
7,089.00	41.49	256.45	6,629.96	-229.46	-1,292.27	186.27	4.03	-3.70	-2.37
7,132.00	40.61	255.66	6,662.39	-236.27	-1,319.67	192.16	2.38	-2.05	-1.84
7,175.00	41.41	255.17	6,694.84	-243.37	-1,346.96	198.35	2.01	1.86	-1.14
7,218.00	42.51	254.07	6,726.81	-251.00	-1,374.70	205.05	3.08	2.56	-2.56
7,261.00	41.98	254.07	6,758.64	-258.93	-1,402.50	212.05	1.23	-1.23	0.00
7,304.00	41.10	253.76	6,790.83	-266.83	-1,429.90	219.03	2.10	-2.05	-0.72
7,347.00	42.29	254.38	6,822.94	-274.68	-1,457.40	225.96	2.93	2.77	1.44
7,440.00	42.29	254.38	6,891.73	-291.53	-1,517.67	240.79	0.00	0.00	0.00
Tie into Surveys at 7440' MD									
7,480.00	42.40	253.30	6,921.30	-299.03	-1,543.55	247.43	1.84	0.28	-2.70
First ProMWD at 7480' MD									
7,511.00	43.00	253.50	6,944.08	-305.04	-1,563.69	252.76	1.98	1.94	0.65
7,543.00	44.00	254.60	6,967.29	-311.09	-1,584.87	258.10	3.92	3.13	3.44
7,574.00	44.30	254.40	6,989.53	-316.86	-1,605.68	263.17	1.07	0.97	-0.65
7,606.00	44.40	254.20	7,012.42	-322.91	-1,627.21	268.50	0.54	0.31	-0.63
7,638.00	44.50	254.40	7,035.26	-328.97	-1,648.79	273.85	0.54	0.31	0.63
7,669.00	44.80	254.20	7,057.31	-334.87	-1,669.76	279.04	1.07	0.97	-0.65
7,713.00	45.10	253.70	7,088.45	-343.47	-1,699.63	285.63	1.05	0.68	-1.14
7,764.00	45.00	254.40	7,124.48	-353.38	-1,734.34	295.39	0.99	-0.20	1.37
7,795.00	43.80	254.50	7,146.63	-359.20	-1,755.23	300.50	3.88	-3.87	0.32
7,859.00	44.20	253.80	7,192.67	-371.34	-1,798.00	311.22	0.98	0.63	-1.09
7,890.00	43.30	249.60	7,215.07	-378.06	-1,818.34	317.26	9.81	-2.90	-13.55
7,922.00	43.00	244.40	7,238.42	-386.61	-1,838.48	325.12	11.15	-0.94	-16.25
7,953.00	43.20	239.80	7,261.06	-396.55	-1,857.17	334.43	10.50	0.65	-15.48
7,985.00	43.60	235.30	7,284.32	-408.37	-1,875.69	345.64	9.32	1.25	-13.44
8,017.00	44.00	230.90	7,307.42	-421.67	-1,893.39	358.33	9.60	1.25	-13.75
8,048.00	44.60	227.60	7,329.61	-435.80	-1,909.79	371.91	7.68	1.94	-10.65
8,080.00	45.40	223.80	7,352.24	-451.60	-1,925.97	387.16	8.76	2.50	-11.88
8,111.00	46.50	219.90	7,373.80	-468.19	-1,940.82	403.25	9.71	3.55	-12.58
8,143.00	47.40	215.70	7,395.65	-486.67	-1,955.14	421.24	9.99	2.81	-13.13
8,174.00	48.20	211.50	7,416.48	-505.79	-1,967.84	439.93	10.36	2.59	-13.65
8,205.00	49.00	207.40	7,437.64	-526.68	-1,979.64	460.42	9.93	2.30	-12.81
8,237.00	49.60	203.60	7,457.86	-547.89	-1,989.75	481.28	9.49	1.94	-12.26
8,269.00	51.00	199.80	7,478.31	-570.76	-1,998.84	503.83	10.13	1.38	-11.88
8,300.00	52.40	197.00	7,497.52	-593.84	-2,006.51	526.65	8.40	4.52	-9.09
8,332.00	53.80	193.30	7,516.74	-618.54	-2,013.19	551.10	10.23	4.39	-7.56

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Professional Directional
Survey Report



Company: EQT PRODUCTION
Project: Marion County, WV
Site: GLO76 Pad
Well: Well #514744- Marcellus
Wellbore: Main Wellbore
Design: 514744 As Drilled Surveys

Local Co-ordinate Reference: Well Well #514744- Marcellus - Slot 514744
TVD Reference: GL 1424 + 23' KB @ 1447.00usft
MD Reference: GL 1424 + 23' KB @ 1447.00usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: Well_Planner1

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
8,363.00	56.10	190.50	7,534.54	-643.37	-2,018.41	575.75	10.47	7.42	-9.03
8,395.00	58.40	186.90	7,551.86	-669.96	-2,022.47	602.19	11.88	7.19	-11.25
8,427.00	60.10	184.40	7,568.22	-697.33	-2,025.17	629.45	8.56	5.31	-7.61
8,458.00	60.20	180.80	7,583.65	-724.18	-2,026.39	656.25	10.08	0.32	-11.61
8,490.00	60.10	176.90	7,599.59	-751.92	-2,025.84	683.99	10.57	-0.31	-12.19
8,521.00	61.80	174.20	7,614.64	-778.94	-2,023.73	711.06	9.38	5.48	-8.71
8,553.00	64.00	173.00	7,629.22	-807.24	-2,020.55	739.46	7.64	6.88	-3.75
8,584.00	66.20	170.70	7,642.27	-835.07	-2,016.56	767.40	9.78	7.10	-7.42
8,616.00	67.90	168.70	7,654.75	-864.06	-2,011.29	796.55	7.83	5.31	-6.25
8,647.00	69.90	166.70	7,665.91	-892.31	-2,005.13	825.00	8.82	6.45	-6.45
8,679.00	72.60	165.30	7,676.19	-921.71	-1,997.79	854.62	9.40	8.44	-4.38
8,711.00	75.10	163.90	7,685.10	-951.34	-1,989.63	884.51	8.87	7.81	-4.38
8,742.00	77.90	161.70	7,692.33	-980.13	-1,980.71	913.58	11.37	9.03	-7.10
8,774.00	81.40	160.10	7,698.08	-1,009.87	-1,970.41	943.64	11.99	10.94	-5.00
8,805.00	84.90	158.20	7,701.78	-1,038.63	-1,959.46	972.75	12.83	11.29	-6.13
8,837.00	86.40	156.10	7,703.65	-1,068.06	-1,947.05	1,002.58	12.75	10.94	-6.58
8,868.00	91.30	154.30	7,703.73	-1,096.20	-1,934.05	1,031.13	11.01	9.35	-5.81
8,900.00	92.00	153.20	7,702.81	-1,124.88	-1,919.91	1,060.28	4.07	2.19	-3.44
8,995.00	94.80	150.30	7,697.17	-1,208.40	-1,875.03	1,145.25	4.24	2.95	-3.05
9,042.00	95.00	150.90	7,693.16	-1,249.20	-1,852.04	1,185.79	1.34	0.43	1.28
9,090.00	90.50	152.10	7,690.86	-1,291.32	-1,829.17	1,229.65	9.70	-9.38	2.50
9,137.00	91.30	151.40	7,690.12	-1,332.72	-1,806.93	1,271.76	2.26	1.70	-1.49
9,185.00	93.80	152.00	7,687.98	-1,374.94	-1,784.20	1,314.72	5.36	5.21	1.25
9,232.00	94.70	153.80	7,684.50	-1,416.66	-1,762.85	1,357.13	4.27	1.91	3.83
9,279.00	94.90	155.60	7,680.57	-1,459.00	-1,742.83	1,400.11	3.84	0.43	3.83
9,326.00	92.70	155.20	7,677.45	-1,501.64	-1,723.31	1,443.38	4.76	-4.68	-0.85
9,374.00	90.60	154.90	7,676.07	-1,545.14	-1,703.07	1,487.53	4.42	-4.38	-0.63
9,469.00	89.60	153.90	7,675.90	-1,630.81	-1,682.03	1,574.52	1.49	-1.05	-1.05
9,563.00	90.20	152.30	7,676.07	-1,714.64	-1,619.50	1,659.71	1.82	0.64	-1.70
9,658.00	88.20	154.30	7,677.39	-1,799.49	-1,576.82	1,745.94	2.98	-2.11	2.11
9,752.00	89.10	153.70	7,679.61	-1,883.95	-1,535.63	1,831.73	1.15	0.96	-0.64
9,847.00	90.10	153.50	7,680.27	-1,969.04	-1,493.39	1,918.18	1.07	1.05	-0.21
9,941.00	88.00	152.60	7,681.83	-2,052.82	-1,450.80	2,003.33	2.43	-2.23	-0.96
10,036.00	88.70	154.30	7,684.57	-2,137.76	-1,408.35	2,089.64	1.93	0.74	1.79
10,130.00	88.90	153.10	7,686.53	-2,222.01	-1,366.71	2,175.23	1.29	0.21	-1.28
10,225.00	89.00	152.10	7,688.27	-2,306.34	-1,323.00	2,260.97	1.06	0.11	-1.05
10,320.00	88.60	154.30	7,690.26	-2,391.11	-1,280.18	2,347.12	2.35	-0.42	2.32
10,415.00	88.50	154.10	7,692.67	-2,476.61	-1,238.85	2,433.95	0.24	-0.21	-0.21
10,509.00	86.40	153.20	7,695.21	-2,560.81	-1,197.14	2,519.49	0.96	-0.71	-0.96
10,604.00	89.10	155.90	7,697.28	-2,646.56	-1,156.33	2,605.56	2.94	0.74	2.84
10,699.00	89.30	155.60	7,698.61	-2,733.17	-1,117.32	2,694.42	0.36	-0.21	-0.32
10,794.00	87.30	155.60	7,701.43	-2,819.65	-1,078.09	2,782.15	2.11	-2.11	0.00
10,889.00	87.50	155.50	7,705.74	-2,906.04	-1,038.81	2,869.80	0.24	0.21	0.00

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Company:	EQT PRODUCTION	Local Co-ordinate Reference:	Well Well #514744- Marcellus - Slot 514744
Project:	Marion County, WV	TVD Reference:	GL 1424 + 23' KB @ 1447.00usft
Site:	GLO76 Pad	MD Reference:	GL 1424 + 23' KB @ 1447.00usft
Well:	Well #514744- Marcellus	North Reference:	Grid
Wellbore:	Main Wellbore	Survey Calculation Method:	Minimum Curvature
Design:	514744 As Drilled Surveys	Database:	Well_Planner1

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
10,983.00	86.60	155.60	7,710.58	-2,991.49	-999.96	2,956.51	0.96	-0.96	0.11
11,078.00	86.80	155.60	7,716.04	-3,077.87	-960.78	3,044.14	0.21	0.21	0.00
11,172.00	87.90	153.50	7,720.39	-3,162.65	-920.43	3,130.22	2.52	1.17	-2.23
11,267.00	87.70	152.30	7,724.04	-3,247.15	-877.18	3,216.12	1.28	-0.21	-1.26
11,362.00	87.60	151.80	7,727.93	-3,331.00	-832.70	3,301.40	0.54	-0.11	-0.53
11,456.00	86.70	152.80	7,732.61	-3,414.12	-789.06	3,385.93	1.43	-0.96	1.06
11,551.00	86.20	152.10	7,738.49	-3,498.19	-745.20	3,471.41	0.90	-0.53	-0.74
11,646.00	87.20	153.20	7,743.96	-3,582.43	-701.63	3,557.05	1.56	1.05	1.16
11,741.00	89.80	154.80	7,746.44	-3,667.77	-660.00	3,643.74	3.21	2.74	1.68
11,835.00	89.50	153.40	7,747.02	-3,752.33	-618.95	3,729.62	1.52	-0.32	-1.49
11,930.00	89.80	153.70	7,747.60	-3,837.38	-576.63	3,816.03	0.45	0.32	0.32
12,025.00	90.10	153.40	7,747.68	-3,922.44	-534.32	3,902.45	0.45	0.32	-0.32
12,119.00	88.30	153.20	7,748.99	-4,006.40	-492.09	3,987.78	1.93	-1.91	-0.21
12,214.00	88.20	153.50	7,751.90	-4,091.27	-449.50	4,074.02	0.33	-0.11	0.32
12,309.00	88.30	153.80	7,754.80	-4,176.36	-407.35	4,160.46	0.33	0.11	0.32
12,403.00	89.10	152.80	7,756.93	-4,260.31	-365.13	4,245.78	1.36	0.85	-1.06
12,498.00	88.40	149.50	7,759.00	-4,343.49	-319.30	4,330.44	3.55	-0.74	-3.47
12,592.00	89.80	150.50	7,760.48	-4,424.88	-272.31	4,413.35	1.83	1.49	1.06
12,687.00	90.00	153.10	7,760.64	-4,508.60	-227.42	4,498.52	2.74	0.21	2.74
12,782.00	88.80	153.70	7,761.64	-4,593.54	-184.89	4,584.83	1.41	-1.26	0.63
12,877.00	88.60	154.40	7,763.79	-4,678.94	-143.33	4,671.56	0.77	-0.21	0.74
12,971.00	88.70	152.80	7,766.01	-4,763.11	-101.55	4,757.08	1.70	0.11	-1.70
13,066.00	88.50	152.10	7,768.33	-4,847.31	-57.62	4,842.70	0.77	-0.21	-0.74
13,161.00	89.00	153.90	7,770.40	-4,931.93	-14.50	4,928.71	1.97	0.53	1.89
13,255.00	89.40	153.20	7,771.72	-5,016.08	27.36	5,014.21	0.86	0.43	-0.74
13,350.00	90.00	153.30	7,772.21	-5,100.92	70.12	5,100.42	0.64	0.63	0.11
13,445.00	90.30	152.50	7,771.96	-5,185.48	113.39	5,186.38	0.90	0.32	-0.84
13,540.00	90.60	152.20	7,771.22	-5,269.63	157.48	5,271.95	0.45	0.32	-0.32
13,557.00	90.70	152.50	7,771.03	-5,284.69	165.37	5,287.27	1.86	0.59	1.78
Last Survey: 13567'MD / 7771.03'TVD									
13,610.00	90.70	152.50	7,770.38	-5,331.70	189.84	5,335.06	0.00	0.00	0.00
PTB: 13610'MD									

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Company:	EQT PRODUCTION	Local Co-ordinate Reference:	Well Well #514744- Marcellus - Slot 514744
Project:	Marion County, WV	TVD Reference:	GL 1424 + 23' KB @ 1447.00usft
Site:	GLO76 Pad	MD Reference:	GL 1424 + 23' KB @ 1447.00usft
Well:	Well #514744- Marcellus	North Reference:	Grid
Wellbore:	Main Wellbore	Survey Calculation Method:	Minimum Curvature
Design:	514744 As Drilled Surveys	Database:	Well_Planner1

Design Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
514744 Plat TD2 - actual wellpath misses target center by 100.93usft at 13603.49usft MD (7770.46 TVD, -5325.93 N, 185.84 E) - Point	0.00	360.00	7,670.00	-5,329.30	177.70	383,731.30	1,721,193.00	39° 32' 57.68 N	80° 29' 19.48 W
514744 Plat LP - actual wellpath misses target center by 53.58usft at 8595.51usft MD (7646.86 TVD, -845.46 N, -2014.79 E) - Point	0.00	360.00	7,670.00	-844.30	-2,063.10	388,216.30	1,718,952.20	39° 33' 41.76 N	80° 29' 48.72 W
514744 Plat TD - actual wellpath misses target center by 10.91usft at 10501.84usft MD (7695.01 TVD, -2554.42 N, -1200.37 E) - Point	0.00	360.00	7,687.00	-2,557.90	-1,206.90	386,502.70	1,719,806.40	39° 33' 24.92 N	80° 29' 37.54 W
514744 Plat TD2 p5 - actual wellpath misses target center by 51.38usft at 13602.88usft MD (7770.46 TVD, -5325.39 N, 186.55 E) - Point	0.00	360.00	7,720.00	-5,329.30	177.70	383,731.30	1,721,193.00	39° 32' 57.68 N	80° 29' 19.48 W
514744 LP 1012' VS p4 - actual wellpath misses target center by 16.55usft at 8845.11usft MD (7703.82 TVD, -1075.46 N, -1943.74 E) - Point	0.00	360.00	7,720.00	-1,076.87	-1,946.90	387,983.73	1,719,068.40	39° 33' 39.47 N	80° 29' 47.20 W
BHL 514744 Plat - actual wellpath misses target center by 45.51usft at 13602.81usft MD (7770.47 TVD, -5325.32 N, 186.52 E) - Point	0.00	360.00	7,726.00	-5,329.30	177.70	383,731.30	1,721,193.00	39° 32' 57.68 N	80° 29' 19.48 W
LP 514744 Plat - actual wellpath misses target center by 90.29usft at 8616.00usft MD (7654.75 TVD, -864.06 N, -2011.29 E) - Point	0.00	360.00	7,726.00	-844.30	-2,063.10	388,216.30	1,718,952.20	39° 33' 41.76 N	80° 29' 48.72 W
514744 LP 1012' VS p7 - actual wellpath misses target center by 22.45usft at 8845.13usft MD (7703.82 TVD, -1075.47 N, -1943.73 E) - Point	0.00	360.00	7,726.00	-1,076.87	-1,946.90	387,983.73	1,719,068.40	39° 33' 39.47 N	80° 29' 47.20 W

Design Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
7,440.00	6,891.73	-291.53	-1,517.67	Tie into Gyro at 7440'MD
7,480.00	6,921.30	-299.03	-1,543.55	First ProMWD at 7480'MD
13,557.00	7,771.03	-5,264.69	165.37	Last Survey: 13557'MD / 7771.03'TVD
13,610.00	7,770.38	-5,331.70	189.84	PTB: 13610'MD

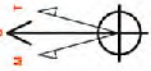


EQT PRODUCTION
GLO76 Pad
 Marion County, WV
 Well #514744- Marcellus
 Plan 7 - AVP FINAL (Grid)
 GL 1424 + 23' KB @ 1447.00usit



Geoside, Station: US State Plane 1897 (State Plane)
 Datum: NAD 1987, NAD 83 (GDA83)
 Ellipsoid: Clarke 1866
 Prime Meridian: Greenwich
 System: UTM, Meter, Spheroid

RMB Elevation: GL 1424 + 23' KB @ 1447.00usit
 +NLS = E+W Northing Easting Latitude Longitude Sd 514744
 0.00 0.00 3885062.62 1721015.30 39° 33' 50.33" N 80° 29' 22.48" W



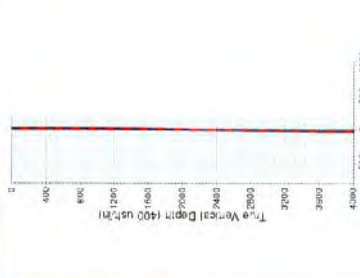
Adjusts to Grid North
 Magnetic North = 812°
 Magnetic Declination = 12°
 Magnetic Field
 Strength: 52,229 nanT
 Dip Angle: 67.03°
 Declination: 12.00°
 Model: IECOM

Azimuth Corrections

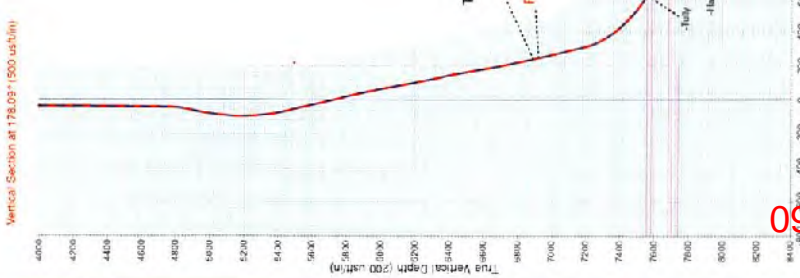
To convert a Magnetic direction to a Grid direction, Subtract 8.02°

Stn	MU	Ms	MI	VSU	INS	INS	INS	DBeg	FP-300	Vised	Nu90T
1	8385.00	58.40	180.00	750.00	-693.00	-2022.47	0.00	3.00	502.19		
2	6934.04	96.89	150.45	7250.00	-1455.00	-1059.00	8.91	37.25	1387.60		
3	13634.04	96.89	150.45	7250.00	-5223.00	-1771.73	0.00	3.00	5236.26	EH 54744 (B)	

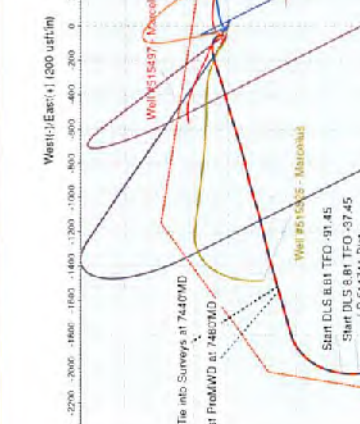
SECTION DETAILS



Vertical Section at 176.09' (500 usft/m)



True Vertical Depth (200 usft/m)



Plan View Map