

EQT Production - Marcellus

Doddridge County, WV Grid

Doddridge County 513344

Well #513344

Main Wellbore

Design: 513344 As Drilled Surveys

Standard Survey Report

23 January, 2015

Received
Office of Oil & Gas
JUL 24 2015

Phoenix Technologies
Survey Report

17-06573

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Site Doddridge County 513344
Company:	EQT Production - Marcellus	TVD Reference:	KB @ 1276.0usft
Project:	Doddridge County, WV Grid	MD Reference:	KB @ 1276.0usft
Site:	Doddridge County 513344	North Reference:	Grid
Well:	Well #513344	Survey Calculation Method:	Minimum Curvature
Wellbore:	Main Wellbore		
Design:	513344 As Drilled Surveys		

Project	Doddridge County, WV Grid		
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	Doddridge County 513344				
Site Position:		Northing:	290,256.10 usft	Latitude:	39.29
From:	Map	Easting:	1,645,169.40 usft	Longitude:	-80.75
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "	Grid Convergence:	-0.80 °

Well	Well #513344					
Well Position	+N/-S	0.0 usft	Northing:	290,256.10 usft	Latitude:	39° 17' 24.457 N
	+E/-W	0.0 usft	Easting:	1,645,169.40 usft	Longitude:	80° 45' 13.289 W
Position Uncertainty		0.0 usft	Wellhead Elevation:	usft	Ground Level:	1,260.0 usft

Wellbore	Main Wellbore				
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Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010_14	1/5/2015	-8.52	66.75	52,222

Design	513344 As Drilled Surveys				
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Audit Notes:

Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.0
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Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.0	0.0	0.0	192.19

Survey Program		Date			
From (')	To (usft)	1/23/2015	Survey (Wellbore)	Tool Name	Description
0.00	4,932.0	513344 Gyrodata Gyro (Main Wellbore)	GYD_DP_MS	Gyrodata gyro-compassing and drop	
0.00	13,845.0	513344 PHX MWD (Main Wellbore)	MWD+IGRF	MWD+IGRF v3:standard declination	

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	-1,276.0	0.0	0.0	0.0	0.00	0.00	0.00
103.0	0.23	248.35	103.0	-1,173.0	-0.1	-0.2	0.1	0.22	0.22	0.00
203.0	0.21	229.40	203.0	-1,073.0	-0.3	-0.5	0.4	0.08	0.02	-18.95
303.0	0.22	234.67	303.0	-973.0	-0.5	-0.8	0.7	0.02	0.01	5.21
403.0	0.17	236.23	403.0	-873.0	-0.7	-1.1	0.9	0.05	-0.05	1.56
503.0	0.19	218.52	503.0	-773.0	-0.9	-1.3	1.2	0.06	0.02	-17.71
603.0	0.14	205.84	603.0	-673.0	-1.1	-1.5	1.4	0.06	-0.05	-12.68
703.0	0.13	205.98	703.0	-573.0	-1.4	-1.6	1.7	0.01	-0.01	0.14

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Wellbore:	Main Wellbore		
Design:	513344 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)	
803.0	0.06	225.81	803.0	-473.0	-1.5	-1.7	1.8	0.08	-0.07	19.83	
903.0	0.08	137.17	903.0	-373.0	-1.6	-1.7	1.9	0.10	0.02	-88.64	
1,003.0	0.14	109.04	1,003.0	-273.0	-1.7	-1.5	2.0	0.08	0.06	-28.13	
1,103.0	0.14	119.91	1,103.0	-173.0	-1.8	-1.3	2.0	0.03	0.00	10.87	
1,203.0	0.17	35.04	1,203.0	-73.0	-1.7	-1.1	1.9	0.21	0.03	-84.87	
1,303.0	0.14	62.95	1,303.0	27.0	-1.5	-0.9	1.7	0.08	-0.03	27.91	
1,403.0	0.09	77.73	1,403.0	127.0	-1.5	-0.7	1.6	0.06	-0.05	14.78	
1,503.0	0.18	69.97	1,503.0	227.0	-1.4	-0.5	1.5	0.09	0.09	-7.76	
1,603.0	0.31	51.72	1,603.0	327.0	-1.2	-0.1	1.2	0.15	0.13	-18.25	
1,703.0	0.51	71.35	1,703.0	427.0	-0.9	0.5	0.7	0.24	0.20	19.63	
1,803.0	0.77	97.25	1,803.0	527.0	-0.8	1.6	0.4	0.38	0.26	25.90	
1,903.0	0.98	112.51	1,903.0	627.0	-1.2	3.1	0.5	0.31	0.21	15.26	
2,003.0	1.09	112.33	2,003.0	727.0	-1.9	4.7	0.9	0.11	0.11	-0.18	
2,103.0	1.18	119.04	2,102.9	826.9	-2.8	6.5	1.3	0.16	0.09	6.71	
2,203.0	1.17	118.36	2,202.9	926.9	-3.8	8.3	1.9	0.02	-0.01	-0.68	
2,303.0	1.19	125.32	2,302.9	1,026.9	-4.8	10.1	2.6	0.14	0.02	6.96	
2,403.0	1.18	131.69	2,402.9	1,126.9	-6.1	11.7	3.5	0.13	-0.01	6.37	
2,503.0	1.03	145.26	2,502.9	1,226.9	-7.5	13.0	4.6	0.30	-0.15	13.57	
2,603.0	1.10	148.81	2,602.8	1,326.8	-9.1	14.0	6.0	0.10	0.07	3.55	
2,703.0	1.19	152.95	2,702.8	1,426.8	-10.9	14.9	7.5	0.12	0.09	4.14	
2,803.0	1.23	150.66	2,802.8	1,526.8	-12.7	15.9	9.1	0.06	0.04	-2.29	
2,903.0	1.31	148.17	2,902.8	1,626.8	-14.6	17.1	10.7	0.10	0.08	-2.49	
3,003.0	1.09	162.39	3,002.7	1,726.7	-16.5	17.9	12.3	0.37	-0.22	14.22	
3,103.0	0.93	163.31	3,102.7	1,826.7	-18.2	18.5	13.9	0.16	-0.16	0.92	
3,203.0	0.78	159.75	3,202.7	1,926.7	-19.6	18.9	15.2	0.16	-0.15	-3.56	
3,303.0	0.76	156.09	3,302.7	2,026.7	-20.8	19.4	16.3	0.05	-0.02	-3.66	
3,403.0	0.64	156.01	3,402.7	2,126.7	-22.0	19.9	17.3	0.12	-0.12	-0.08	
3,503.0	0.59	163.80	3,502.7	2,226.7	-23.0	20.3	18.2	0.10	-0.05	7.79	
3,603.0	0.50	156.06	3,602.7	2,326.7	-23.9	20.6	19.0	0.12	-0.09	-7.74	
3,703.0	0.43	167.38	3,702.7	2,426.7	-24.6	20.9	19.7	0.12	-0.07	11.32	
3,803.0	0.45	171.77	3,802.7	2,526.7	-25.4	21.0	20.4	0.04	0.02	4.39	
3,903.0	0.49	171.56	3,902.7	2,626.7	-26.2	21.1	21.1	0.04	0.04	-0.21	
4,003.0	0.38	196.95	4,002.7	2,726.7	-26.9	21.1	21.9	0.22	-0.11	25.39	
4,103.0	0.35	187.50	4,102.7	2,826.7	-27.5	21.0	22.5	0.07	-0.09	-1.09	
4,203.0	0.38	186.41	4,202.7	2,926.7	-28.2	20.9	23.1	0.12	-0.06	-10.99	
4,303.0	0.32	169.42	4,302.7	3,026.7	-28.8	20.9	23.7	0.12	-0.06	-21.90	
4,403.0	0.30	147.52	4,402.7	3,126.7	-29.3	21.1	24.2	0.12	0.02	-33.48	
4,503.0	0.33	114.04	4,502.7	3,226.7	-29.6	21.5	24.4	0.18	0.03	9.90	
4,603.0	0.36	123.94	4,602.7	3,326.7	-29.9	22.0	24.6	0.07	0.03	5.92	
4,703.0	0.38	129.86	4,702.7	3,426.7	-30.3	22.5	24.9	0.04	0.02	-33.49	
4,803.0	0.31	96.37	4,802.7	3,526.7	-30.5	23.1	25.0	0.21	-0.07	-2.14	
4,903.0	0.43	94.23	4,902.7	3,626.7	-30.6	23.7	24.9	0.12	0.12		

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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)	
Gyro Tie In=4932' MD											
4,932.0	0.43	92.02	4,931.7	3,655.7	-30.6	23.9	24.9	0.06	0.00	-7.62	
5,196.0	2.60	230.00	5,195.6	3,919.6	-34.5	20.3	29.4	1.11	0.82	52.27	
5,228.0	4.50	232.90	5,227.5	3,951.5	-35.7	18.8	31.0	5.96	5.94	9.06	
5,259.0	5.60	225.60	5,258.4	3,982.4	-37.5	16.7	33.1	4.10	3.55	-23.55	
5,291.0	8.40	223.20	5,290.2	4,014.2	-40.3	14.0	36.4	8.80	8.75	-7.50	
5,322.0	12.10	219.00	5,320.7	4,044.7	-44.5	10.4	41.3	12.17	11.94	-13.55	
5,354.0	16.60	216.90	5,351.7	4,075.7	-50.8	5.6	48.4	14.15	14.06	-6.56	
5,385.0	20.20	219.00	5,381.1	4,105.1	-58.5	-0.5	57.2	11.81	11.61	6.77	
5,417.0	24.70	219.90	5,410.6	4,134.6	-67.9	-8.2	68.1	14.10	14.06	2.81	
5,448.0	27.80	220.40	5,438.4	4,162.4	-78.4	-17.1	80.2	10.03	10.00	1.61	
5,480.0	31.70	220.50	5,466.2	4,190.2	-90.4	-27.4	94.2	12.19	12.19	0.31	
5,511.0	34.20	220.80	5,492.2	4,216.2	-103.2	-38.4	109.0	8.08	8.06	0.97	
5,542.0	36.50	224.10	5,517.5	4,241.5	-116.4	-50.5	124.5	9.64	7.42	10.65	
5,574.0	38.80	224.90	5,542.8	4,266.8	-130.4	-64.2	141.0	7.35	7.19	2.50	
5,605.0	41.70	226.60	5,566.5	4,290.5	-144.4	-78.5	157.7	10.00	9.35	5.48	
5,637.0	44.70	227.10	5,589.8	4,313.8	-159.3	-94.5	175.7	9.44	9.38	1.56	
5,669.0	48.70	226.30	5,611.8	4,335.8	-175.3	-111.5	194.9	12.63	12.50	-2.50	
5,700.0	52.00	225.80	5,631.5	4,355.5	-191.9	-128.6	214.7	10.72	10.65	-1.61	
5,732.0	54.20	225.50	5,650.8	4,374.8	-209.8	-146.9	236.0	6.92	6.88	-0.94	
5,763.0	57.90	224.60	5,668.1	4,392.1	-227.9	-165.1	257.6	12.18	11.94	-2.90	
5,794.0	61.90	222.40	5,683.6	4,407.6	-247.4	-183.6	280.6	14.29	12.90	-7.10	
5,826.0	65.80	220.50	5,697.7	4,421.7	-268.9	-202.6	305.6	13.30	12.19	-5.94	
5,857.0	70.40	220.40	5,709.3	4,433.3	-290.8	-221.2	330.9	14.84	14.84	-0.32	
5,920.0	73.00	220.50	5,729.1	4,453.1	-336.3	-260.0	383.6	4.13	4.13	0.16	
5,982.0	73.10	219.70	5,747.1	4,471.1	-381.7	-298.2	436.0	1.24	0.16	-1.29	
6,045.0	72.70	221.40	5,765.7	4,489.7	-427.4	-337.4	489.0	2.66	-0.63	2.70	
6,108.0	71.80	222.30	5,784.9	4,508.9	-472.1	-377.4	541.1	1.97	-1.43	1.43	
6,171.0	72.00	222.10	5,804.4	4,528.4	-516.5	-417.6	593.0	0.44	0.32	-0.32	
6,234.0	71.50	222.60	5,824.2	4,548.2	-560.7	-457.9	644.7	1.09	-0.79	0.79	
6,296.0	69.80	222.50	5,844.7	4,568.7	-603.8	-497.5	695.2	2.75	-2.74	-0.16	
6,359.0	70.20	221.90	5,866.3	4,590.3	-647.6	-537.3	746.5	1.10	0.63	-0.95	
6,422.0	70.00	224.10	5,887.7	4,611.7	-691.0	-577.7	797.3	3.30	0.32	0.32	
6,485.0	68.90	226.90	5,909.8	4,633.8	-732.3	-619.7	846.6	4.51	0.44	0.44	
6,548.0	68.10	228.70	5,932.9	4,656.9	-771.7	-663.1	894.3	2.95	-1.27	2.86	
6,611.0	68.50	231.20	5,956.2	4,680.2	-809.3	-708.0	940.5	3.74	0.63	0.97	
6,674.0	68.70	231.80	5,979.2	4,703.2	-845.9	-753.9	985.9	0.94	0.32	0.95	
6,737.0	69.50	234.10	6,001.7	4,725.7	-881.3	-800.8	1,030.5	3.64	1.27	3.65	
6,800.0	69.40	234.30	6,023.8	4,747.8	-915.8	-848.7	1,074.3	0.34	-0.16	0.32	
6,863.0	70.00	233.90	6,045.6	4,769.6	-950.5	-896.5	1,118.3	1.12	0.95	-0.63	
6,926.0	71.00	236.10	6,066.7	4,790.7	-984.5	-945.2	1,161.9	3.65	1.59	3.49	
6,988.0	71.70	236.60	6,086.5	4,810.5	-1,017.1	-994.1	1,204.0	1.36	1.13	0.81	
7,051.0	71.70	236.00	6,106.3	4,830.3	-1,050.3	-1,043.8	1,246.9	0.90	0.00	-0.95	

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7,114.0	71.50	236.50	6,126.2	4,850.2	-1,083.5	-1,093.5	1,289.9	0.82	-0.32	0.79
7,177.0	70.30	237.90	6,146.8	4,870.8	-1,115.7	-1,143.6	1,332.0	2.84	-1.90	2.22
7,240.0	68.90	234.80	6,168.7	4,892.7	-1,148.4	-1,192.7	1,374.3	5.12	-2.22	-4.92
7,303.0	69.30	233.30	6,191.2	4,915.2	-1,183.0	-1,240.4	1,418.2	2.31	0.63	-2.38
7,365.0	69.70	233.50	6,212.9	4,936.9	-1,217.6	-1,287.0	1,461.8	0.71	0.65	0.32
7,428.0	69.20	233.80	6,235.0	4,959.0	-1,252.6	-1,334.5	1,506.1	0.91	-0.79	0.48
7,491.0	69.30	234.10	6,257.4	4,981.4	-1,287.2	-1,382.1	1,550.0	0.47	0.16	0.48
7,554.0	68.80	232.70	6,279.9	5,003.9	-1,322.3	-1,429.4	1,594.3	2.22	-0.79	-2.22
7,616.0	69.50	234.10	6,302.0	5,026.0	-1,356.9	-1,475.9	1,637.8	2.39	1.13	2.26
7,679.0	69.60	234.10	6,324.0	5,048.0	-1,391.5	-1,523.7	1,681.8	0.16	0.16	0.00
7,742.0	69.40	233.30	6,346.0	5,070.0	-1,426.4	-1,571.3	1,725.9	1.23	-0.32	-1.27
7,805.0	69.30	232.30	6,368.3	5,092.3	-1,462.1	-1,618.2	1,770.7	1.49	-0.16	-1.59
7,868.0	68.80	232.20	6,400.1	5,124.1	-1,512.9	-1,683.9	1,834.3	0.57	-0.56	-0.11
7,957.0	69.70	232.50	6,422.4	5,146.4	-1,548.9	-1,730.6	1,879.3	1.50	1.43	0.48
8,020.0	69.90	233.40	6,444.2	5,168.2	-1,584.5	-1,777.8	1,924.1	1.38	0.32	1.43
8,082.0	69.40	233.50	6,465.7	5,189.7	-1,619.2	-1,824.5	1,967.8	0.82	-0.81	0.16
8,145.0	69.70	234.60	6,487.7	5,211.7	-1,653.8	-1,872.3	2,011.8	1.70	0.48	1.75
8,209.0	70.50	235.10	6,509.5	5,233.5	-1,688.5	-1,921.5	2,056.0	1.45	1.25	0.78
8,271.0	70.60	234.70	6,530.2	5,254.2	-1,722.1	-1,969.3	2,099.0	0.63	0.16	-0.65
8,334.0	70.70	234.40	6,551.0	5,275.0	-1,756.6	-2,017.7	2,142.9	0.48	0.16	-0.48
8,398.0	70.80	234.50	6,572.1	5,296.1	-1,791.7	-2,066.9	2,187.6	0.21	0.16	0.16
8,460.0	71.20	234.20	6,592.3	5,316.3	-1,825.8	-2,114.5	2,231.1	0.79	0.65	-0.48
8,524.0	69.90	234.30	6,613.6	5,337.6	-1,861.1	-2,163.5	2,275.9	2.04	-2.03	0.16
8,586.0	70.30	234.60	6,634.7	5,358.7	-1,895.0	-2,210.9	2,319.0	0.79	0.65	0.48
8,649.0	70.40	234.20	6,655.9	5,379.9	-1,929.5	-2,259.2	2,363.0	0.62	0.16	-0.63
8,712.0	70.90	234.20	6,676.8	5,400.8	-1,964.3	-2,307.4	2,407.1	0.79	0.79	0.00
8,775.0	71.50	234.50	6,697.1	5,421.1	-1,999.1	-2,355.8	2,451.3	1.05	0.95	0.48
8,839.0	71.00	230.40	6,717.7	5,441.7	-2,036.0	-2,403.9	2,497.6	6.12	-0.78	-6.41
8,870.0	70.60	226.70	6,727.9	5,451.9	-2,055.4	-2,425.8	2,521.1	11.34	-1.29	-11.94
8,902.0	70.00	222.50	6,738.7	5,462.7	-2,076.8	-2,447.0	2,546.5	12.50	-1.88	-13.13
8,933.0	69.70	218.40	6,749.3	5,473.3	-2,098.9	-2,465.8	2,572.2	12.45	-0.97	-13.23
8,964.0	70.30	214.90	6,759.9	5,483.9	-2,122.3	-2,483.2	2,598.7	10.78	1.94	-11.29
8,996.0	72.30	212.70	6,770.2	5,494.2	-2,147.5	-2,500.1	2,626.9	9.03	6.25	-8.88
9,027.0	73.60	211.10	6,779.3	5,503.3	-2,172.7	-2,515.7	2,654.8	6.48	4.19	-5.31
9,059.0	74.50	209.40	6,788.1	5,512.1	-2,199.2	-2,531.2	2,684.0	5.83	2.81	-7.19
9,090.0	75.80	206.70	6,796.0	5,520.0	-2,225.7	-2,545.3	2,712.8	9.41	4.14	-7.19
9,122.0	76.90	204.40	6,803.6	5,527.6	-2,253.7	-2,558.7	2,743.1	7.78	3.44	-7.19
9,153.0	77.70	202.10	6,810.4	5,534.4	-2,281.5	-2,570.7	2,772.8	7.68	2.58	-7.42
9,216.0	79.60	197.10	6,822.8	5,546.8	-2,339.7	-2,591.4	2,834.0	8.34	3.02	-7.94
9,279.0	81.80	191.80	6,833.0	5,557.0	-2,399.9	-2,606.9	2,896.1	9.01	3.49	-8.41
9,342.0	83.50	185.30	6,841.1	5,565.1	-2,461.6	-2,616.1	2,958.4	10.58	2.70	-10.32
9,405.0	84.80	178.10	6,847.5	5,571.5	-2,524.2	-2,618.0	3,020.0	11.55	2.06	-11.43
9,468.0	85.30	171.80	6,852.9	5,576.9	-2,586.7	-2,612.5	3,079.9	9.99	0.79	-10.00

Received
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JUL 24 2015

Phoenix Technologies

Survey Report

17-06573

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Site Doddridge County 513344
Company:	EQT Production - Marcellus	TVD Reference:	KB @ 1276.0usft
Project:	Doddridge County, WV Grid	MD Reference:	KB @ 1276.0usft
Site:	Doddridge County 513344	North Reference:	Grid
Well:	Well #513344	Survey Calculation Method:	Minimum Curvature
Wellbore:	Main Wellbore		
Design:	513344 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)	
9,531.0	85.30	164.20	6,858.1	5,582.1	-2,648.1	-2,599.4	3,137.1	12.02	0.00	-12.06	
9,594.0	84.90	163.30	6,863.5	5,587.5	-2,708.3	-2,581.9	3,192.3	1.56	-0.63	-1.43	
LP= 9656' MD/ 6868' TVD											
9,656.0	86.00	163.50	6,868.4	5,592.4	-2,767.6	-2,564.2	3,246.5	1.80	1.77	0.32	
Deepest Point of Well= 9719' MD/6871' TVD											
9,719.0	90.20	164.10	6,870.5	5,594.5	-2,828.0	-2,546.6	3,301.9	6.73	6.67	0.95	
9,782.0	91.20	164.70	6,869.7	5,593.7	-2,886.7	-2,529.7	3,357.6	1.85	1.59	0.95	
9,845.0	91.40	164.30	6,868.3	5,592.3	-2,949.4	-2,512.9	3,413.4	0.71	0.32	-0.63	
9,907.0	91.40	163.50	6,866.8	5,590.8	-3,008.9	-2,495.7	3,468.0	1.29	0.00	-1.29	
9,970.0	91.60	163.60	6,865.1	5,589.1	-3,069.3	-2,477.8	3,523.2	0.35	0.32	0.16	
10,033.0	91.80	163.10	6,863.3	5,587.3	-3,129.7	-2,459.8	3,578.4	0.85	0.32	-0.79	
10,096.0	91.90	162.80	6,861.2	5,585.2	-3,189.9	-2,441.3	3,633.3	0.50	0.16	-0.48	
10,159.0	90.90	160.70	6,859.7	5,583.7	-3,249.7	-2,421.6	3,687.6	3.69	-1.59	-3.33	
10,222.0	91.30	160.00	6,858.5	5,582.5	-3,309.0	-2,400.4	3,741.2	1.28	0.63	-1.11	
10,285.0	90.90	161.00	6,857.3	5,581.3	-3,368.4	-2,379.4	3,794.8	1.71	-0.63	1.59	
10,348.0	92.30	164.50	6,855.5	5,579.5	-3,428.5	-2,360.7	3,849.6	5.98	2.22	5.56	
10,411.0	92.20	166.00	6,853.0	5,577.0	-3,489.4	-2,344.7	3,905.7	2.38	-0.16	2.38	
10,474.0	91.90	165.80	6,850.8	5,574.8	-3,550.4	-2,329.4	3,962.2	0.57	-0.48	-0.32	
10,536.0	91.70	165.20	6,848.8	5,572.8	-3,610.4	-2,313.9	4,017.5	1.02	-0.32	-0.97	
10,599.0	91.70	166.70	6,847.0	5,571.0	-3,671.5	-2,298.6	4,074.0	2.38	0.00	2.38	
10,662.0	91.20	167.50	6,845.4	5,569.4	-3,732.9	-2,284.5	4,131.0	1.50	-0.79	1.27	
10,725.0	89.50	167.70	6,845.0	5,569.0	-3,794.4	-2,271.0	4,188.3	2.72	-2.70	0.32	
10,788.0	88.50	167.50	6,846.1	5,570.1	-3,856.0	-2,257.5	4,245.6	1.62	-1.59	-0.32	
10,851.0	88.20	167.70	6,847.9	5,571.9	-3,917.5	-2,243.9	4,302.9	0.57	-0.48	0.32	
10,914.0	88.70	166.80	6,849.6	5,573.6	-3,978.9	-2,230.0	4,360.0	1.63	0.79	-1.43	
10,977.0	89.30	165.90	6,850.7	5,574.7	-4,040.1	-2,215.2	4,416.7	1.72	0.95	-1.43	
11,040.0	91.40	165.60	6,850.3	5,574.3	-4,101.2	-2,199.7	4,473.1	3.37	3.33	-0.48	
11,103.0	90.90	165.00	6,849.1	5,573.1	-4,162.1	-2,183.7	4,529.3	1.24	-0.79	-0.95	
11,166.0	90.90	164.50	6,848.1	5,572.1	-4,222.9	-2,167.1	4,585.2	0.79	0.00	-0.79	
11,229.0	90.40	163.30	6,847.4	5,571.4	-4,283.4	-2,149.6	4,640.6	2.06	-0.79	-1.90	
11,292.0	90.20	163.10	6,847.0	5,571.0	-4,343.7	-2,131.4	4,695.7	0.45	-0.32	-0.32	
11,355.0	90.70	163.70	6,846.5	5,570.5	-4,404.1	-2,113.4	4,751.0	1.24	0.79	0.95	
11,418.0	91.50	163.40	6,845.3	5,569.3	-4,464.5	-2,095.6	4,806.2	1.36	1.27	-0.48	
11,481.0	91.90	163.60	6,843.5	5,567.5	-4,524.9	-2,077.7	4,861.5	0.71	0.63	0.32	
11,544.0	91.60	163.90	6,841.5	5,565.5	-4,585.3	-2,060.1	4,916.9	0.67	-0.48	0.48	
11,607.0	91.60	165.30	6,839.8	5,563.8	-4,646.0	-2,043.4	4,972.7	2.22	0.00	2.22	
11,670.0	91.60	165.10	6,838.0	5,562.0	-4,706.9	-2,027.3	5,028.8	0.32	0.00	-0.32	
11,733.0	91.30	165.20	6,836.4	5,560.4	-4,767.8	-2,011.1	5,084.9	0.50	-0.48	0.16	
11,795.0	90.50	163.10	6,835.4	5,559.4	-4,827.4	-1,994.2	5,139.6	3.62	-1.29	-3.39	
11,858.0	90.30	163.00	6,835.0	5,559.0	-4,887.7	-1,975.8	5,194.6	0.35	-0.32	-0.16	
11,921.0	90.80	164.20	6,834.4	5,558.4	-4,948.1	-1,958.1	5,249.9	2.06	0.79	1.90	
11,984.0	91.10	165.10	6,833.4	5,557.4	-5,008.9	-1,941.4	5,305.8	1.51	0.48	1.43	

17-06573

Phoenix Technologies
Survey Report

Database: EDM 5000.1 Single User Db	Local Co-ordinate Reference: Site Doddridge County 513344
Company: EOT Production - Marcellus	KB @ 1276 0usft
Project: Doddridge County, WV Grid	KB @ 1276 0usft
Site: Doddridge County 513344	Grid
Well: Well #513344	Minimum Curvature
Wellbore: Main Wellbore	
Design: 513344 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)
12,047.0	91.10	165.20	6,832.1	5,556.1	-5,069.7	-1,925.2	5,361.9	0.16	0.00	0.16
12,110.0	91.60	166.80	6,830.7	5,554.7	-5,130.8	-1,910.0	5,418.4	2.66	0.79	2.54
12,173.0	91.30	166.00	6,829.1	5,553.1	-5,192.1	-1,895.2	5,475.1	1.36	-0.48	-1.27
12,236.0	89.70	163.20	6,828.5	5,552.5	-5,252.8	-1,878.5	5,531.0	5.12	-2.54	-4.44
12,299.0	89.80	163.10	6,828.8	5,552.8	-5,313.1	-1,860.2	5,586.0	0.22	0.16	-0.16
12,361.0	89.80	163.00	6,829.0	5,553.0	-5,372.4	-1,842.1	5,640.2	0.16	0.00	-0.16
12,424.0	89.80	162.90	6,829.2	5,553.2	-5,432.6	-1,823.7	5,695.2	0.16	0.00	-0.16
12,487.0	91.20	164.50	6,828.7	5,552.7	-5,493.1	-1,806.0	5,750.5	3.37	2.22	2.54
12,549.0	91.10	167.90	6,827.4	5,551.4	-5,553.3	-1,791.2	5,806.2	5.49	-0.16	5.48
12,612.0	91.40	167.70	6,826.1	5,550.1	-5,614.8	-1,777.9	5,863.6	0.57	0.48	-0.32
12,675.0	91.60	167.30	6,824.4	5,548.4	-5,676.3	-1,764.3	5,920.8	0.71	0.32	-0.63
12,737.0	91.60	167.70	6,822.7	5,546.7	-5,736.8	-1,750.8	5,977.1	0.64	0.00	0.65
12,800.0	91.40	168.50	6,821.0	5,545.0	-5,798.5	-1,737.9	6,034.6	1.31	-0.32	1.27
12,863.0	90.20	166.20	6,820.1	5,544.1	-5,859.9	-1,724.1	6,091.8	4.12	-1.90	-3.65
12,926.0	90.20	165.90	6,819.9	5,543.9	-5,921.1	-1,708.9	6,148.4	0.48	0.00	-0.48
12,989.0	90.20	166.00	6,819.7	5,543.7	-5,982.2	-1,693.6	6,204.9	0.16	0.00	0.16
13,052.0	90.10	166.00	6,819.5	5,543.5	-6,043.3	-1,678.3	6,261.4	0.16	-0.16	0.00
13,115.0	90.00	165.10	6,819.5	5,543.5	-6,104.4	-1,663.2	6,318.0	0.22	-0.16	0.16
13,178.0	90.20	166.40	6,819.4	5,543.4	-6,165.6	-1,648.2	6,374.6	0.57	0.32	0.48
13,241.0	91.00	167.40	6,818.7	5,542.7	-6,227.0	-1,633.9	6,431.6	2.03	1.27	1.59
13,304.0	91.00	166.60	6,817.6	5,541.6	-6,288.4	-1,619.7	6,488.6	1.27	0.00	-1.27
13,368.0	90.70	166.00	6,816.7	5,540.7	-6,350.5	-1,604.6	6,546.1	1.05	-0.47	-0.94
13,431.0	90.60	165.80	6,816.0	5,540.0	-6,411.6	-1,589.2	6,602.6	0.35	-0.16	-0.32
13,494.0	90.40	164.50	6,815.4	5,539.4	-6,472.5	-1,573.1	6,658.7	2.09	-0.32	-2.06
13,557.0	90.80	164.30	6,814.7	5,538.7	-6,533.2	-1,556.1	6,714.5	0.71	0.63	-0.32
13,620.0	92.00	166.00	6,813.2	5,537.2	-6,594.1	-1,540.0	6,770.6	3.30	1.90	2.70
13,683.0	92.10	166.00	6,811.0	5,535.0	-6,655.2	-1,524.8	6,827.1	0.16	0.16	0.00
13,746.0	91.70	165.70	6,808.9	5,532.9	-6,716.2	-1,509.4	6,883.5	0.79	-0.63	-0.48
Final Survey= 13792' MD/6808' TVD										
13,792.0	91.80	165.90	6,807.5	5,531.5	-6,760.8	-1,498.1	6,924.7	0.49	0.22	0.43
Projection to TD= 13146' MD/6806' TVD										
13,845.0	91.80	165.90	6,805.8	5,529.8	-6,812.2	-1,485.2	6,972.2	0.00	0.00	0.00

Design Annotations	Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates +N/S (usft)	Local Coordinates +E/W (usft)	Comment
	4,932.0	4,931.7	-30.6	23.9	Gyro Tie In=4932' MD
	9,656.0	6,868.4	-2,767.6	-2,564.2	LP= 9656' MD/ 6868' TVD
	9,719.0	6,870.5	-2,828.0	-2,545.6	Deepest Point of Well= 9719' MD/6871' TVD
	13,792.0	6,807.5	-6,760.8	-1,498.1	Final Survey= 13792' MD/6808' TVD
	13,845.0	6,805.8	-6,812.2	-1,485.2	Projection to TD= 13845' MD/6806' TVD

Phoenix Technologies

Survey Report

17-06573

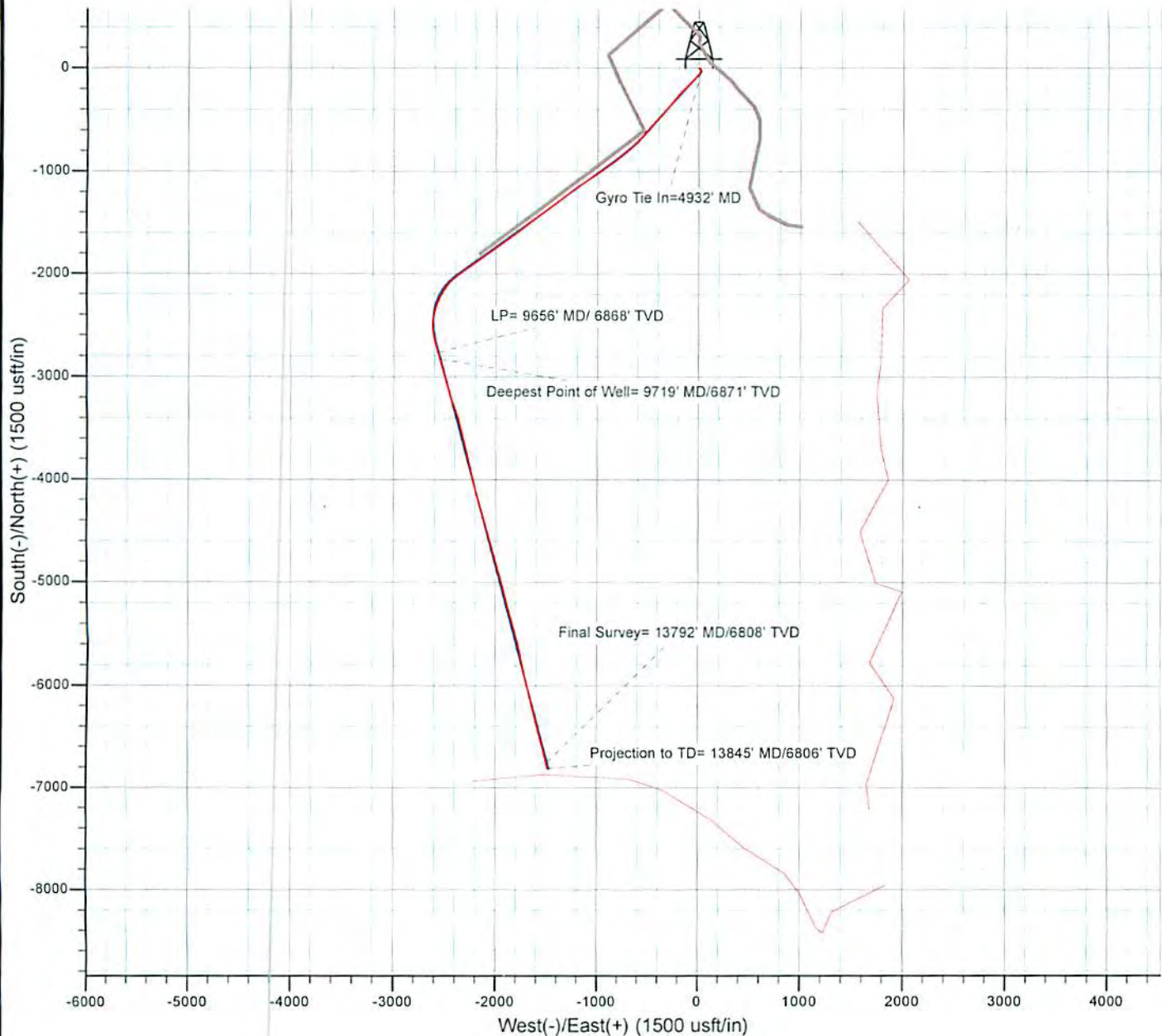
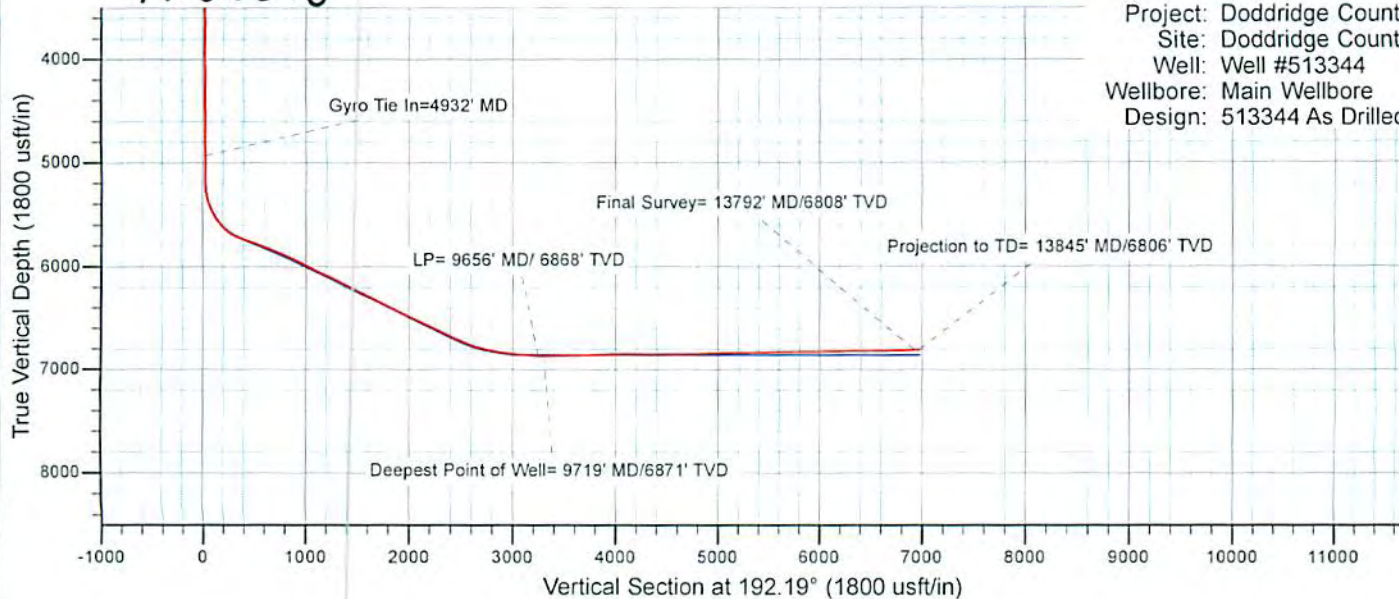
Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Site Doddridge County 513344
Company:	EQT Production - Marcellus	TVD Reference:	KB @ 1276.0usft
Project:	Doddridge County, WV Grid	MD Reference:	KB @ 1276.0usft
Site:	Doddridge County 513344	North Reference:	Grid
Well:	Well #513344	Survey Calculation Method:	Minimum Curvature
Wellbore:	Main Wellbore		
Design:	513344 As Drilled Surveys		

Checked By: _____ Approved By: _____ Date: _____

EQT Production - Marcellus

17-06573

Project: Doddridge County, WV Grid
Site: Doddridge County 513344
Well: Well #513344
Wellbore: Main Wellbore
Design: 513344 As Drilled Surveys



10/23/2015