



Antero
Berry Unit 1H
Tyler County WV
Northing: 14316233.70
Easting: 1715406.00
As Drilled

WELL DETAILS: Berry Unit 1H

Graded Level	104.0	Spot
Northing	14316233.70	Longitude
Easting	1715406.00	80° 44' 4.643 W
Latitude	39° 23' 24.517 N	

REFERENCE INFORMATION

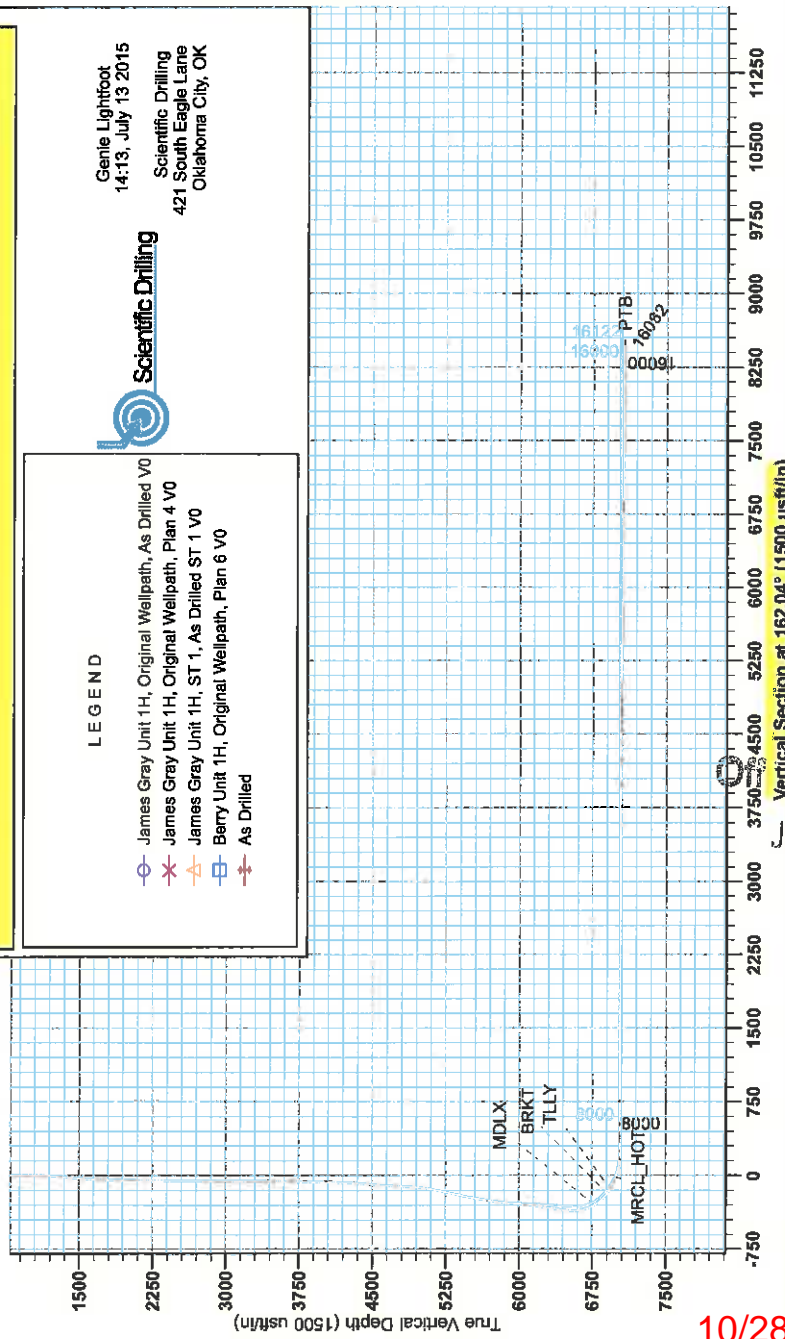
Coordinates Reference: UTM, Berry Unit 1H, Grid North
 Datum: NAD 83
 Spheroid: GRS 1980
 Meridian: Zone 17N (84 W to 78 W)
 Calculation Method: Minimum Curvature

DESIGN TARGET DETAILS

Name	TVD	+N/S	+E/W	Northing	Easting	Latitude	Longitude
SHL Berry Unit 1H	0.0	0.0	0.0	14316233.70	1715406.00	39° 23' 24.517 N	80° 44' 4.643 W
Apex Brill Berry Unit 1H	17064.5	-8863.9	136.7	14307368.84	1715942.06	39° 23' 56.973 N	80° 44' 2.634 W

LEGEND

- James Gray Unit 1H, Original Wellpath, As Drilled V0
- James Gray Unit 1H, Original Wellpath, Plan 4 V0
- James Gray Unit 1H, ST 1, As Drilled ST 1 V0
- Berry Unit 1H, Original Wellpath, Plan 6 V0
- As Drilled

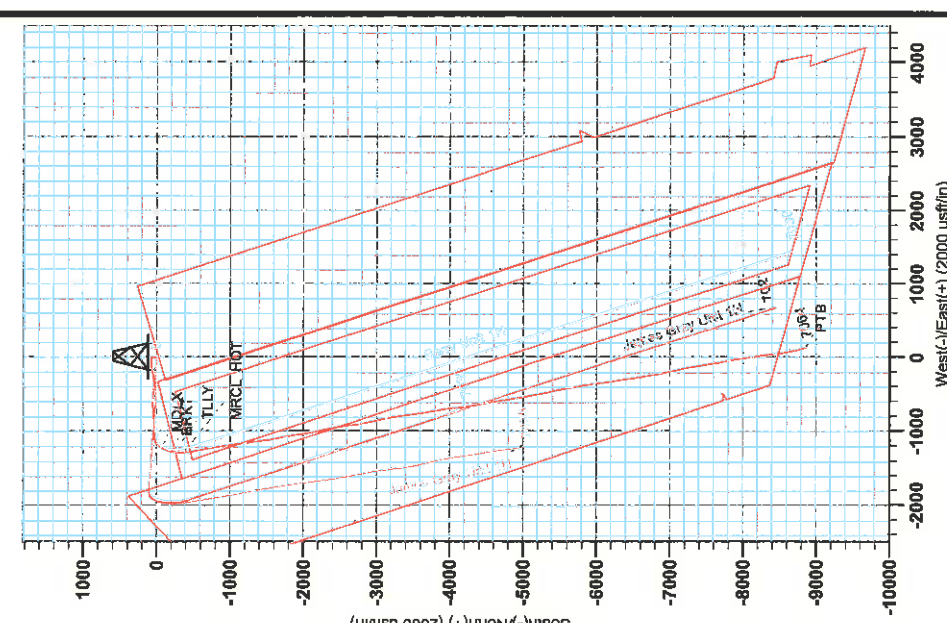
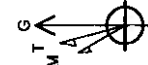


PROJECT DETAILS: Tyler County WV

Geoidals System: Universal Transverse Mercator (US Survey Feet)
 Datum: NAD 1983 (NAD83 CONUS)
 Ellipsoid: Clarke 1866
 Zone: Zone 17N (84 W to 78 W)
 System Datum: Mean Sea Level

To convert Magnetic North to Grid North, Subtract 8.70°
 To convert True North to Grid, Subtract 0.17°

Magnetic Field
 Strength: 52296.7nT
 Dip Angle: 66.95°
 Date: 8/18/2014
 Model: BGGM2014



Received
 of Oil & Gas
 JUL 05 2016

10/28/2016



Antero

**Tyler County WV
Coastal 1 Pad: Berry/Gray/Owo
Berry Unit 1H
Original Wellpath**

Design: As Drilled

EOW Completion Report

13 July, 2015

Received
Office of Oil & Gas
JUL 05 2016



10/28/2016



Company:	Antero	Local Co-ordinate Reference:	Well Berry Unit 1H
Project:	Tyler County WV	TVD Reference:	Precision 522: GL 1164' + KB 18' @ 1182.0usft
Site:	Coastal 1 Pad: Berry/Gray/Owo	MD Reference:	Precision 522: GL 1164' + KB 18' @ 1182.0usft
Well:	Berry Unit 1H	North Reference:	Grid
Wellbore:	Original Wellpath	Survey Calculation Method:	Minimum Curvature
Design:	As Drilled	Database:	Antero NE

Project	Tyler County WV, Tyler Co West Virginia		
Map System:	Universal Transverse Mercator (US Survey Feet)	System Datum:	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	Zone 17N (84 W to 78 W)		

Site	Coastal 1 Pad: Berry/Gray/Owo				
Site Position:		Northing:	14,316,233.70 usft	Latitude:	39° 25' 24.517 N
From:	Map	Easting:	1,715,406.00 usft	Longitude:	80° 44' 4.043 W
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16"	Grid Convergence:	0.17 °

Well	Berry Unit 1H, Marcellus					
Well Position	+N/-S	0.0 usft	Northing:	14,316,233.70 usft	Latitude:	39° 25' 24.517 N
	+E/-W	0.0 usft	Easting:	1,715,406.00 usft	Longitude:	80° 44' 4.043 W
Position Uncertainty	2.0 usft		Wellhead Elevation:	1,182.0 usft	Ground Level:	1,164.0 usft

Wellbore	Original Wellpath				
-----------------	-------------------	--	--	--	--

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	BGGM2014	8/18/2014	-8.53	66.95	52,297

Design	As Drilled				
---------------	------------	--	--	--	--

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	162.04	

Received
Office of Oil & Gas
JUL 05 2016

Survey Program	Date	7/13/2015			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
30.0	6,032.0	Survey #7 Final Gyro (Original Wellpath)	SDI Standard Keeper	Scientific Drilling Intl. Standard Wireline Keeper	
6,083.0	16,062.0	Survey #10 Corrected (Original Wellpath)	MWD SDI	MWD - Standard ver 1.0.1	

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00
30.0	0.10	120.36	30.0	0.0	0.0	0.0	0.33
55.0	0.19	120.36	55.0	0.0	0.1	0.1	0.36
80.0	0.29	120.36	80.0	-0.1	0.2	0.1	0.40
105.0	0.36	119.50	105.0	-0.2	0.3	0.3	0.28
130.0	0.36	118.75	130.0	-0.2	0.4	0.4	0.02
155.0	0.40	119.48	155.0	-0.3	0.6	0.5	0.16
180.0	0.40	117.56	180.0	-0.4	0.7	0.6	0.05
205.0	0.32	125.32	205.0	-0.5	0.9	0.7	0.37
230.0	0.28	129.90	230.0	-0.6	1.0	0.8	0.19
255.0	0.27	131.59	255.0	-0.6	1.1	0.9	0.05



Company:	Antero	Local Co-ordinate Reference:	Well Berry Unit 1H
Project:	Tyler County WV	TVD Reference:	Precision 522: GL 1164' + KB 18' @ 1182.0usft
Site:	Coastal 1 Pad Berry/Gray/Owo	MD Reference:	Precision 522: GL 1164' + KB 18' @ 1182.0usft
Well:	Berry Unit 1H	North Reference:	Grid
Wellbore:	Original Wellpath	Survey Calculation Method:	Minimum Curvature
Design:	As Drilled	Database:	Antero NE

Survey							
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)
280.0	0.25	137.55	280.0	-0.7	1.1	1.0	0.13
305.0	0.25	150.30	305.0	-0.8	1.2	1.1	0.22
330.0	0.21	141.93	330.0	-0.9	1.3	1.2	0.21
355.0	0.22	140.88	355.0	-1.0	1.3	1.3	0.04
380.0	0.22	166.67	380.0	-1.1	1.4	1.4	0.39
405.0	0.22	175.51	405.0	-1.2	1.4	1.5	0.14
430.0	0.16	179.57	430.0	-1.2	1.4	1.6	0.25
455.0	0.18	189.11	455.0	-1.3	1.4	1.7	0.14
480.0	0.14	169.76	480.0	-1.4	1.4	1.7	0.27
505.0	0.12	177.55	505.0	-1.4	1.4	1.8	0.11
530.0	0.17	183.99	530.0	-1.5	1.4	1.8	0.21
555.0	0.19	169.75	555.0	-1.6	1.4	1.9	0.20
580.0	0.16	168.69	580.0	-1.6	1.4	2.0	0.12
605.0	0.09	191.10	605.0	-1.7	1.4	2.0	0.34
630.0	0.11	168.45	630.0	-1.7	1.4	2.1	0.18
655.0	0.17	158.28	655.0	-1.8	1.4	2.1	0.26
680.0	0.19	170.96	680.0	-1.9	1.4	2.2	0.18
705.0	0.30	175.19	705.0	-2.0	1.4	2.3	0.45
730.0	0.30	172.77	730.0	-2.1	1.5	2.5	0.05
755.0	0.27	178.30	755.0	-2.2	1.5	2.6	0.16
780.0	0.24	174.73	780.0	-2.3	1.5	2.7	0.14
805.0	0.27	175.95	805.0	-2.5	1.5	2.8	0.12
830.0	0.34	173.74	830.0	-2.6	1.5	2.9	0.28
855.0	0.31	167.21	855.0	-2.7	1.5	3.1	0.19
880.0	0.29	175.73	880.0	-2.9	1.5	3.2	0.20
905.0	0.36	172.21	905.0	-3.0	1.6	3.3	0.29
930.0	0.36	184.58	930.0	-3.2	1.6	3.5	0.34
955.0	0.28	182.81	955.0	-3.3	1.6	3.7	0.39
980.0	0.20	196.07	980.0	-3.4	1.5	3.8	0.06
1,005.0	0.20	200.18	1,005.0	-3.5	1.5	3.8	0.10
1,030.0	0.18	204.98	1,030.0	-3.6	1.5	3.8	0.23
1,055.0	0.17	186.71	1,055.0	-3.6	1.5	3.9	0.67
1,080.0	0.06	263.19	1,080.0	-3.7	1.4	3.9	1.59
1,105.0	0.39	355.66	1,105.0	-3.6	1.4	3.8	3.01
1,130.0	1.14	0.99	1,130.0	-3.3	1.4	3.5	3.21
1,155.0	1.94	3.13	1,155.0	-2.6	1.4	2.9	2.20
1,180.0	2.49	4.09	1,180.0	-1.6	1.5	2.0	3.50
1,205.0	3.36	2.45	1,204.9	-0.3	1.6	0.8	5.19
1,230.0	4.65	0.56	1,229.9	1.4	1.6	-0.8	3.70
1,255.0	5.57	359.52	1,254.8	3.6	1.6	-3.0	1.12
1,280.0	5.85	359.31	1,279.6	6.1	1.6	-5.3	0.49
1,305.0	5.97	359.09	1,304.5	8.7	1.6	-7.8	0.24
1,330.0	6.03	358.98	1,329.4	11.3	1.5	-10.3	0.34
1,355.0	6.11	358.74	1,354.2	13.9	1.5	-12.8	

Received
Office of Oil & Gas
JUL 05 2016



Company:	Antero	Local Co-ordinate Reference:	Well Berry Unit 1H
Project:	Tyler County WV	TVD Reference:	Precision 522 GL 1164' + KB 18' @ 1182 Ous:ft
Site:	Coastal 1 Pad Berry/Gray/Owo	MD Reference:	Precision 522 GL 1164' + KB 18' @ 1182 Ous:ft
Well:	Berry Unit 1H	North Reference:	Grid
Wellbore:	Original Wellpath	Survey Calculation Method:	Minimum Curvature
Design:	As Drilled	Database:	Antero NE

Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)
1,380.0	6.19	358.86	1,379.1	16.6	1.4	-15.4	0.32
1,405.0	6.16	359.14	1,403.9	19.3	1.4	-18.0	0.17
1,430.0	6.25	358.87	1,428.8	22.0	1.3	-20.5	0.38
1,455.0	5.66	1.44	1,453.7	24.6	1.3	-23.0	2.59
1,480.0	4.73	5.96	1,478.6	26.9	1.5	-25.1	4.06
1,505.0	4.47	8.18	1,503.5	28.9	1.7	-26.9	1.26
1,530.0	4.26	9.07	1,528.4	30.7	2.0	-28.6	0.88
1,555.0	4.00	8.83	1,553.3	32.5	2.3	-30.2	1.04
1,580.0	3.84	7.76	1,578.3	34.2	2.5	-31.8	0.70
1,605.0	3.59	10.06	1,603.2	35.8	2.8	-33.2	1.16
1,630.0	3.42	12.18	1,628.2	37.3	3.1	-34.5	0.85
1,655.0	3.34	11.58	1,653.1	38.7	3.4	-35.8	0.35
1,680.0	3.27	10.58	1,678.1	40.2	3.6	-37.1	0.36
1,705.0	3.10	11.94	1,703.1	41.5	3.9	-38.3	0.74
1,730.0	2.83	14.61	1,728.0	42.8	4.2	-39.4	1.21
1,755.0	2.68	16.93	1,753.0	43.9	4.5	-40.4	0.75
1,780.0	2.54	17.77	1,778.0	45.0	4.9	-41.3	0.58
1,805.0	2.35	18.16	1,802.9	46.0	5.2	-42.2	0.76
1,830.0	2.17	17.94	1,827.9	47.0	5.5	-43.0	0.72
1,855.0	2.03	18.60	1,852.9	47.8	5.8	-43.7	0.57
1,880.0	1.89	20.76	1,877.9	48.7	6.1	-44.4	0.63
1,905.0	1.78	18.40	1,902.9	49.4	6.3	-45.0	0.53
1,930.0	1.65	17.45	1,927.9	50.1	6.6	-45.6	0.53
1,955.0	1.49	18.66	1,952.9	50.8	6.8	-46.2	0.65
1,980.0	1.39	17.11	1,977.9	51.4	7.0	-46.7	0.43
2,005.0	1.33	15.48	2,002.8	51.9	7.1	-47.2	0.29
2,030.0	1.20	14.52	2,027.8	52.5	7.3	-47.7	0.53
2,055.0	1.10	9.04	2,052.8	53.0	7.4	-48.1	0.59
2,080.0	1.02	10.21	2,077.8	53.4	7.5	-48.5	0.12
2,105.0	0.99	10.29	2,102.8	53.8	7.5	-48.9	0.42
2,130.0	0.89	12.00	2,127.8	54.2	7.6	-49.3	0.42
2,155.0	0.79	13.90	2,152.8	54.6	7.7	-49.6	0.42
2,180.0	0.73	11.58	2,177.8	54.9	7.8	-49.9	0.27
2,205.0	0.71	11.50	2,202.8	55.2	7.8	-50.1	0.08
2,230.0	0.62	8.82	2,227.8	55.5	7.9	-50.4	0.38
2,255.0	0.66	7.26	2,252.8	55.8	7.9	-50.6	0.17
2,280.0	0.61	5.56	2,277.8	56.1	8.0	-50.9	0.21
2,305.0	0.61	6.13	2,302.8	56.3	8.0	-51.1	0.02
2,330.0	0.66	7.41	2,327.8	56.6	8.0	-51.4	0.21
2,355.0	0.62	7.84	2,352.8	56.9	8.1	-51.6	0.16
2,380.0	0.71	12.23	2,377.8	57.2	8.1	-51.9	0.41
2,405.0	0.71	10.55	2,402.8	57.5	8.2	-52.2	0.08
2,430.0	0.62	11.41	2,427.8	57.8	8.2	-52.4	0.36
2,455.0	0.67	4.92	2,452.8	58.0	8.3	-52.7	0.35
2,480.0	0.64	355.62	2,477.8	58.3	8.3	-52.9	0.44

Recorded
Office of Oil & Gas
JUL 05 2016



Company:	Antero	Local Co-ordinate Reference:	Well Berry Unit 1H
Project:	Tyler County WV	TVD Reference:	Precision 522 GL 1164' + KB 18' @ 1182.0usft
Site:	Coastal 1 Pad: Berry/Gray/Owo	MD Reference:	Precision 522 GL 1164' + KB 18' @ 1182.0usft
Well:	Berry Unit 1H	North Reference:	Grid
Wellbore:	Original Wellpath	Survey Calculation Method:	Minimum Curvature
Design:	As Drilled	Database:	Antero NE

Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)
2,505.0	0.58	350.91	2,502.8	58.6	8.2	-53.2	0.31
2,530.0	0.65	0.60	2,527.8	58.9	8.2	-53.5	0.50
2,555.0	0.67	356.84	2,552.8	59.1	8.2	-53.7	0.19
2,580.0	0.60	355.65	2,577.8	59.4	8.2	-54.0	0.28
2,605.0	0.52	356.13	2,602.8	59.7	8.2	-54.2	0.32
2,630.0	0.46	343.27	2,627.8	59.9	8.1	-54.4	0.50
2,655.0	0.46	329.03	2,652.8	60.1	8.1	-54.6	0.46
2,680.0	0.44	329.95	2,677.8	60.2	8.0	-54.8	0.09
2,705.0	0.43	328.92	2,702.8	60.4	7.9	-55.0	0.05
2,730.0	0.43	326.45	2,727.8	60.5	7.8	-55.2	0.07
2,755.0	0.49	321.96	2,752.8	60.7	7.6	-55.4	0.28
2,780.0	0.48	319.24	2,777.8	60.9	7.5	-55.6	0.10
2,805.0	0.42	320.27	2,802.8	61.0	7.4	-55.8	0.24
2,830.0	0.44	307.62	2,827.8	61.2	7.3	-55.9	0.39
2,855.0	0.41	305.80	2,852.8	61.3	7.1	-56.1	0.13
2,880.0	0.36	303.90	2,877.8	61.4	7.0	-56.2	0.21
2,905.0	0.41	292.39	2,902.8	61.4	6.8	-56.3	0.37
2,930.0	0.39	295.71	2,927.8	61.5	6.7	-56.5	0.12
2,955.0	0.41	298.52	2,952.8	61.6	6.5	-56.6	0.11
2,980.0	0.42	296.90	2,977.8	61.7	6.3	-56.7	0.06
3,005.0	0.38	302.26	3,002.8	61.8	6.2	-56.8	0.22
3,030.0	0.41	300.91	3,027.8	61.8	6.0	-57.0	0.13
3,055.0	0.41	294.36	3,052.8	61.9	5.9	-57.1	0.19
3,080.0	0.38	292.55	3,077.8	62.0	5.7	-57.2	0.13
3,105.0	0.42	290.82	3,102.8	62.1	5.6	-57.3	0.17
3,130.0	0.45	291.82	3,127.8	62.1	5.4	-57.4	0.12
3,155.0	0.47	296.45	3,152.8	62.2	5.2	-57.6	0.17
3,180.0	0.53	294.99	3,177.8	62.3	5.0	-57.7	0.25
3,205.0	0.53	299.15	3,202.8	62.4	4.8	-57.9	0.15
3,230.0	0.48	298.69	3,227.8	62.5	4.6	-58.1	0.20
3,255.0	0.51	305.99	3,252.8	62.6	4.4	-58.2	0.28
3,280.0	0.52	301.67	3,277.8	62.8	4.0	-58.4	0.16
3,305.0	0.58	289.46	3,302.8	62.9	4.0	-58.6	0.53
3,330.0	0.65	292.03	3,327.8	63.0	3.8	-58.8	0.30
3,355.0	0.54	300.27	3,352.8	63.1	3.5	-58.9	0.56
3,380.0	0.51	295.63	3,377.8	63.2	3.3	-59.1	0.21
3,405.0	0.52	286.34	3,402.8	63.3	3.1	-59.2	0.34
3,430.0	0.54	288.07	3,427.8	63.3	2.9	-59.3	0.10
3,455.0	0.60	281.89	3,452.8	63.4	2.7	-59.5	0.34
3,480.0	0.58	280.92	3,477.8	63.4	2.4	-59.6	0.09
3,505.0	0.58	284.51	3,502.8	63.5	2.2	-59.7	0.15
3,530.0	0.55	285.46	3,527.8	63.6	1.9	-59.9	0.13
3,555.0	0.64	285.99	3,552.8	63.6	1.7	-60.0	0.36
3,580.0	0.66	283.84	3,577.8	63.7	1.4	-60.2	0.13

Received
Office of Oil & Gas
JUL 05 2016



Company:	Antero	Local Co-ordinate Reference:	Well Berry Unit 1H
Project:	Tyler County WV	TVD Reference:	Precision 522 GL 1164' + KB 18' @ 1182.0usft
Site:	Coastal 1 Pad: Berry/Gray/Owo	MD Reference:	Precision 522 GL 1164' + KB 18' @ 1182.0usft
Well:	Berry Unit 1H	North Reference:	Grid
Wellbore:	Original Wellpath	Survey Calculation Method:	Minimum Curvature
Design:	As Drilled	Database:	Antero NE

Survey								
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	
3,605.0	0.60	282.51	3,602.8	63.8	1.1	-60.3	0.25	
3,630.0	0.62	278.17	3,627.8	63.8	0.9	-60.4	0.20	
3,655.0	0.60	282.86	3,652.8	63.9	0.6	-60.6	0.22	
3,680.0	0.58	287.86	3,677.8	63.9	0.4	-60.7	0.22	
3,705.0	0.60	294.70	3,702.8	64.0	0.1	-60.9	0.29	
3,730.0	0.66	292.74	3,727.7	64.1	-0.1	-61.0	0.25	
3,755.0	0.65	291.37	3,752.7	64.2	-0.4	-61.2	0.07	
3,780.0	0.58	296.07	3,777.7	64.4	-0.6	-61.4	0.34	
3,805.0	0.69	292.32	3,802.7	64.5	-0.9	-61.6	0.47	
3,830.0	0.70	292.54	3,827.7	64.6	-1.2	-61.8	0.04	
3,855.0	0.74	290.76	3,852.7	64.7	-1.5	-62.0	0.18	
3,880.0	1.56	290.00	3,877.7	64.9	-1.9	-62.3	3.28	
3,905.0	2.54	288.64	3,902.7	65.2	-2.8	-62.8	3.92	
3,930.0	3.87	282.09	3,927.7	65.5	-4.1	-63.6	5.51	
3,955.0	4.37	279.75	3,952.6	65.9	-5.9	-64.5	2.11	
3,980.0	4.63	277.55	3,977.5	66.1	-7.8	-65.3	1.25	
4,005.0	4.32	273.11	4,002.5	66.3	-9.8	-66.1	1.86	
4,030.0	4.80	270.13	4,027.4	66.4	-11.8	-66.8	2.14	
4,055.0	5.14	268.01	4,052.3	66.3	-13.9	-67.4	1.55	
4,080.0	5.86	266.08	4,077.2	66.2	-16.3	-68.0	2.97	
4,105.0	6.56	265.69	4,102.0	66.0	-19.0	-68.7	2.81	
4,130.0	7.03	265.34	4,126.9	65.8	-22.0	-69.4	1.89	
4,155.0	7.59	265.51	4,151.6	65.5	-25.1	-70.1	2.24	
4,180.0	8.10	265.42	4,176.4	65.3	-28.5	-70.9	2.04	
4,205.0	8.75	265.79	4,201.1	65.0	-32.2	-71.7	2.61	
4,230.0	9.42	266.73	4,225.8	64.7	-36.1	-72.7	2.74	
4,255.0	10.11	267.90	4,250.5	64.5	-40.4	-73.8	2.87	
4,280.0	10.90	269.25	4,275.0	64.4	-44.9	-75.1	3.31	
4,305.0	11.50	270.14	4,299.6	64.4	-49.8	-76.6	2.50	
4,330.0	12.27	271.18	4,324.0	64.5	-54.9	-78.1	3.20	
4,355.0	13.14	272.06	4,348.4	64.6	-60.4	-80.1	3.56	
4,380.0	13.86	272.53	4,372.7	64.9	-66.2	-82.1	2.91	
4,405.0	14.80	272.91	4,397.0	65.1	-72.4	-84.3	3.78	
4,430.0	16.02	272.88	4,421.1	65.5	-79.1	-86.7	4.88	
4,455.0	16.74	272.17	4,445.0	65.8	-86.1	-89.1	2.99	
4,480.0	17.66	270.62	4,468.9	66.0	-93.5	-91.6	4.11	
4,505.0	18.57	268.95	4,492.7	65.9	-101.3	-94.0	4.19	
4,530.0	19.13	267.24	4,516.3	65.7	-109.3	-96.2	3.15	
4,555.0	19.49	265.54	4,539.9	65.1	-117.6	-98.2	2.67	
4,580.0	19.86	263.51	4,563.5	64.3	-126.0	-100.0	3.11	
4,605.0	20.15	261.79	4,587.0	63.2	-134.4	-101.6	2.62	
4,630.0	20.86	260.08	4,610.4	61.9	-143.1	-103.0	3.72	
4,655.0	21.19	258.91	4,633.7	60.2	-151.9	-104.1	2.14	
4,680.0	21.84	257.65	4,657.0	58.4	-160.9	-105.1	3.19	

Received
Office of Oil & Gas
JUL 05 2016



Company:	Antero	Local Co-ordinate Reference:	Well Berry Unit 1H
Project:	Tyler County WV	TVD Reference:	Precision 522 GL 1164' + KB 18' @ 1182.0usft
Site:	Coastal 1 Pad Berry/Gray/Owo	MD Reference:	Precision 522 GL 1164' + KB 18' @ 1182.0usft
Well:	Berry Unit 1H	North Reference:	Grid
Wellbore:	Original Wellpath	Survey Calculation Method:	Minimum Curvature
Design:	As Drilled	Database:	Antero NE

Survey							
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)
4,705.0	22.42	256.94	4,680.1	56.3	-170.1	-106.0	2.55
4,730.0	22.56	256.65	4,703.2	54.1	-179.4	-106.8	0.71
4,755.0	23.11	256.70	4,726.3	51.9	-188.8	-107.6	2.20
4,780.0	23.96	256.91	4,749.2	49.6	-198.5	-108.4	3.42
4,805.0	24.43	257.11	4,772.0	47.3	-208.5	-109.3	1.91
4,830.0	25.33	257.90	4,794.7	45.0	-218.8	-110.3	3.84
4,855.0	26.18	258.85	4,817.2	42.8	-229.4	-111.5	3.78
4,880.0	26.86	259.51	4,839.6	40.7	-240.4	-112.9	2.96
4,905.0	27.50	260.62	4,861.8	38.8	-251.6	-114.5	3.27
4,930.0	27.73	261.01	4,884.0	36.9	-263.1	-116.2	1.17
4,955.0	27.14	261.29	4,906.1	35.1	-274.5	-118.1	2.42
4,980.0	27.07	261.38	4,928.4	33.4	-285.7	-119.9	0.32
5,005.0	27.05	261.57	4,950.7	31.7	-297.0	-121.8	0.35
5,030.0	27.21	261.60	4,972.9	30.1	-308.3	-123.7	0.64
5,055.0	27.34	262.69	4,995.1	28.5	-319.6	-125.7	2.06
5,080.0	27.56	264.15	5,017.3	27.2	-331.0	-127.9	2.83
5,105.0	27.83	265.36	5,039.5	26.1	-342.6	-130.5	2.50
5,130.0	28.01	267.76	5,061.5	25.4	-354.3	-133.4	4.55
5,155.0	28.24	269.82	5,083.6	25.2	-366.1	-136.8	3.99
5,180.0	27.82	272.61	5,105.7	25.4	-377.8	-140.7	5.51
5,205.0	27.73	274.49	5,127.8	26.1	-389.5	-145.0	3.52
5,230.0	27.44	275.52	5,149.9	27.2	-401.0	-149.5	2.23
5,255.0	27.38	275.85	5,172.1	28.3	-412.4	-154.1	0.65
5,280.0	27.06	275.28	5,194.4	29.4	-423.8	-158.7	1.65
5,305.0	26.37	274.28	5,216.7	30.3	-435.0	-163.0	3.29
5,330.0	26.35	274.12	5,239.1	31.2	-446.1	-167.2	0.30
5,355.0	26.86	274.21	5,261.5	32.0	-457.3	-171.4	2.05
5,380.0	28.15	274.68	5,283.6	32.9	-468.8	-175.8	5.23
5,405.0	29.24	275.79	5,305.6	34.0	-480.7	-180.5	4.85
5,430.0	29.78	276.06	5,327.3	35.2	-493.0	-185.5	2.22
5,455.0	29.89	275.91	5,349.0	36.5	-505.3	-190.6	0.53
5,480.0	29.76	275.84	5,370.7	37.8	-517.7	-195.6	0.54
5,505.0	29.40	275.44	5,392.4	39.0	-530.0	-200.5	1.64
5,530.0	28.95	274.75	5,414.3	40.1	-542.1	-205.3	2.25
5,555.0	28.53	274.31	5,436.2	41.0	-554.1	-209.9	1.88
5,580.0	28.22	274.08	5,458.2	41.9	-566.0	-214.4	1.31
5,605.0	27.49	273.38	5,480.3	42.7	-577.6	-218.7	3.20
5,630.0	27.09	272.25	5,502.5	43.2	-589.1	-222.8	2.62
5,655.0	27.01	271.23	5,524.8	43.6	-600.4	-226.6	1.88
5,680.0	26.91	270.60	5,547.0	43.8	-611.8	-230.3	1.21
5,705.0	26.97	270.35	5,569.3	43.9	-623.1	-233.9	0.51
5,730.0	26.87	269.97	5,591.6	43.9	-634.4	-237.4	0.80
5,755.0	26.84	269.58	5,613.9	43.9	-645.7	-240.8	0.71
5,780.0	26.65	269.14	5,636.2	43.7	-656.9	-244.2	1.10

Received
Office of Oil & Gas
JUL 05 2016



Company:	Antero	Local Co-ordinate Reference:	Well Berry Unit 1H
Project:	Tyler County WV	TVD Reference:	Precision 522 GL 1164' + KB 18' @ 1182 Ousft
Site:	Coastal 1 Pad. Berry/Gray/Owo	MD Reference:	Precision 522 GL 1164' + KB 18' @ 1182 Ousft
Well:	Berry Unit 1H	North Reference:	Grid
Wellbore:	Original Wellpath	Survey Calculation Method:	Minimum Curvature
Design:	As Drilled	Database:	Antero NE

Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)
5,805.0	26.50	268.94	5,658.6	43.5	-668.1	-247.4	0.70
5,830.0	26.20	268.80	5,681.0	43.3	-679.2	-250.6	1.23
5,855.0	25.80	268.81	5,703.5	43.1	-690.2	-253.8	1.60
5,880.0	25.23	268.59	5,726.0	42.8	-700.9	-256.9	2.31
5,905.0	25.53	268.18	5,748.6	42.5	-711.7	-259.9	1.39
5,930.0	25.77	267.88	5,771.2	42.2	-722.5	-262.9	1.09
5,955.0	25.53	267.65	5,793.7	41.8	-733.3	-265.8	1.04
5,980.0	24.77	267.21	5,816.3	41.3	-743.9	-268.6	3.13
6,005.0	25.12	267.08	5,839.0	40.7	-754.4	-271.4	1.42
6,032.0	25.70	266.09	5,863.4	40.1	-766.0	-274.3	2.66
6,083.0	24.81	264.09	5,909.5	38.2	-787.7	-279.2	2.42
6,175.0	23.90	261.23	5,993.3	33.4	-825.3	-286.2	1.62
6,268.0	27.46	265.94	6,077.1	29.0	-865.3	-294.4	4.41
6,360.0	28.85	269.58	6,158.3	27.3	-908.7	-306.2	2.40
6,453.0	28.95	268.52	6,239.7	26.6	-953.6	-319.3	0.56
6,545.0	29.11	267.32	6,320.1	24.9	-998.2	-331.5	0.66
6,638.0	28.46	265.72	6,401.6	22.2	-1,042.9	-342.7	1.08
6,731.0	26.45	264.21	6,484.2	18.5	-1,085.6	-352.3	2.29
6,761.0	25.76	263.76	6,511.1	17.1	-1,098.8	-355.1	2.39
6,792.0	25.45	259.40	6,539.1	15.2	-1,112.0	-357.3	6.16
6,823.0	25.74	250.23	6,567.0	11.6	-1,124.9	-357.9	12.80
6,854.0	26.73	240.97	6,594.8	6.0	-1,137.3	-356.4	13.57
6,885.0	27.90	233.43	6,622.4	-1.7	-1,149.3	-352.7	11.77
6,916.0	29.73	229.13	6,649.6	-11.1	-1,160.9	-347.4	8.92
6,946.0	31.63	223.95	6,675.4	-21.6	-1,172.0	-340.8	10.85
6,977.0	33.38	218.32	6,701.5	-34.2	-1,182.9	-332.3	11.27
7,008.0	35.26	214.66	6,727.1	-48.2	-1,193.3	-322.1	9.00
7,039.0	37.55	211.29	6,752.1	-63.6	-1,203.3	-310.5	9.81
7,065.0	39.01	209.01	6,772.5	-77.6	-1,211.4	-299.7	7.82
MDLX							
7,070.0	39.30	208.59	6,776.4	-80.3	-1,212.9	-297.7	7.82
7,101.0	41.69	206.31	6,799.9	-98.2	-1,222.2	-283.4	9.07
7,132.0	45.29	203.56	6,822.4	-117.6	-1,231.1	-267.8	10.12
7,163.0	48.89	200.74	6,843.5	-138.6	-1,239.7	-250.4	13.39
7,193.0	51.56	199.72	6,862.7	-160.2	-1,247.6	-232.3	9.28
7,224.0	53.98	197.07	6,881.5	-183.6	-1,255.4	-212.4	10.36
7,255.0	55.40	193.89	6,899.4	-208.0	-1,262.2	-191.3	9.54
7,264.0	55.90	192.70	6,904.5	-215.2	-1,263.9	-185.0	12.26
BRKT							
7,286.0	57.16	189.84	6,916.6	-233.2	-1,267.5	-169.0	12.26
7,317.0	59.44	186.86	6,932.9	-259.3	-1,271.3	-145.3	11.00
7,321.0	59.82	186.71	6,934.9	-262.7	-1,271.7	-142.2	10.18
TLLY							
7,348.0	62.43	185.71	6,948.0	-286.3	-1,274.2	-120.6	10.18
7,379.0	65.54	183.78	6,961.5	-314.0	-1,276.5	-94.9	11.49

Received
Office of Oil & Gas
JUL 05 2016



Company:	Antero	Local Co-ordinate Reference:	Well Berry Unit 1H
Project:	Tyler County WV	TVD Reference:	Precision 522 GL 1164' + KB 18' @ 1182.0usft
Site:	Coastal 1 Pad Berry/Gray/Owo	MD Reference:	Precision 522 GL 1164' + KB 18' @ 1182.0usft
Well:	Berry Unit 1H	North Reference:	Grid
Wellbore:	Original Wellpath	Survey Calculation Method:	Minimum Curvature
Design:	As Drilled	Database:	Antero NE

Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)
7,409.0	67.27	181.50	6,973.6	-341.5	-1,277.8	-69.2	9.04
7,440.0	67.88	175.83	6,985.4	-370.1	-1,277.1	-41.7	17.02
7,458.0	69.22	174.97	6,992.0	-386.8	-1,275.8	-25.4	8.68
MRCL_HOT							
7,471.0	70.19	174.35	6,996.5	-398.9	-1,274.7	-13.5	8.68
7,502.0	72.76	173.34	7,006.3	-428.2	-1,271.5	15.2	8.84
7,533.0	75.82	173.08	7,014.7	-457.8	-1,268.0	44.5	9.90
7,564.0	78.70	172.09	7,021.6	-487.8	-1,264.1	74.2	9.80
7,594.8	82.45	170.34	7,026.6	-517.8	-1,259.4	104.2	13.41
7,595.0	82.48	170.33	7,026.6	-518.0	-1,259.4	104.4	15.05
7,662.0	87.49	168.40	7,032.5	-583.6	-1,247.1	170.6	8.01
7,755.0	90.04	170.68	7,034.5	-675.0	-1,230.2	262.8	3.68
7,848.0	89.87	170.68	7,034.6	-766.8	-1,215.1	354.7	0.18
7,940.0	90.22	169.72	7,034.5	-857.4	-1,199.5	445.8	1.11
8,033.0	90.48	172.71	7,033.9	-949.3	-1,185.3	537.6	3.23
8,125.0	90.66	171.92	7,033.0	-1,040.5	-1,173.0	628.1	0.88
8,218.0	89.69	172.88	7,032.7	-1,132.7	-1,160.7	719.6	1.47
8,311.0	89.43	172.62	7,033.4	-1,224.9	-1,148.9	811.0	0.40
8,403.0	90.22	170.77	7,033.7	-1,315.9	-1,135.7	901.6	2.19
8,496.0	89.52	173.94	7,033.9	-1,408.1	-1,123.3	993.1	3.49
8,588.0	91.01	172.97	7,033.5	-1,499.5	-1,112.8	1,083.3	1.93
8,681.0	91.01	169.37	7,031.9	-1,591.4	-1,098.5	1,175.1	3.87
8,773.0	89.16	170.25	7,031.7	-1,681.9	-1,082.2	1,266.2	2.23
8,866.0	89.43	167.87	7,032.9	-1,773.2	-1,064.6	1,358.5	2.58
8,958.0	89.60	169.89	7,033.7	-1,863.5	-1,046.9	1,449.9	2.20
9,051.0	91.01	171.04	7,033.2	-1,955.2	-1,031.5	1,541.9	1.96
9,143.0	90.40	171.65	7,032.0	-2,046.1	-1,017.6	1,632.6	0.94
9,236.0	91.10	169.19	7,030.8	-2,137.8	-1,002.1	1,724.6	2.75
9,328.0	89.08	167.96	7,030.7	-2,228.0	-983.9	1,816.6	2.57
9,421.0	88.90	166.99	7,032.3	-2,318.8	-963.7	1,908.6	1.06
9,514.0	89.43	168.84	7,033.7	-2,409.7	-944.3	2,001.1	2.07
9,606.0	89.87	170.07	7,034.2	-2,500.1	-927.4	2,093.5	1.42
9,699.0	90.22	174.55	7,034.1	-2,592.3	-915.0	2,183.8	4.83
9,792.0	90.57	172.62	7,033.5	-2,684.7	-904.6	2,274.9	2.11
9,884.0	90.13	170.95	7,032.9	-2,775.7	-891.5	2,365.6	1.88
9,977.0	90.40	167.78	7,032.5	-2,867.1	-874.3	2,457.8	3.42
10,069.0	89.08	168.14	7,032.9	-2,957.1	-855.1	2,549.3	1.49
10,162.0	89.08	168.31	7,034.4	-3,048.1	-836.1	2,641.8	0.18
10,255.0	89.08	169.45	7,035.9	-3,139.4	-818.2	2,734.1	1.23
10,347.0	89.52	171.74	7,037.0	-3,230.1	-803.2	2,825.1	2.53
10,440.0	89.87	170.25	7,037.5	-3,322.0	-788.6	2,916.9	1.65
10,533.0	89.34	173.94	7,038.2	-3,414.1	-775.8	3,008.5	4.01
10,625.0	89.78	173.67	7,038.9	-3,505.5	-765.9	3,098.5	0.56
10,718.0	89.78	171.83	7,039.2	-3,597.8	-754.2	3,189.9	1.98

Received
Office of Oil & Gas
JUL 09 2016



Company:	Antero	Local Co-ordinate Reference:	Well Berry Unit 1H
Project:	Tyler County WV	TVD Reference:	Precision 522 GL 1164' + KB 18' @ 1182.0usft
Site:	Coastal 1 Pad: Berry/Gray/Owo	MD Reference:	Precision 522 GL 1164' + KB 18' @ 1182.0usft
Well:	Berry Unit 1H	North Reference:	Grid
Wellbore:	Original Wellpath	Survey Calculation Method:	Minimum Curvature
Design:	As Drilled	Database:	Antero NE

Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	EW (usft)	V. Sec (usft)	DLeg (°/100usft)
10,810.0	89.87	170.86	7,039.5	-3,688.7	-740.3	3,280.7	1.06
10,903.0	89.52	169.81	7,040.0	-3,780.4	-724.7	3,372.7	1.19
10,996.0	90.04	170.60	7,040.4	-3,872.0	-708.9	3,464.8	1.02
11,088.0	90.31	170.60	7,040.1	-3,962.8	-693.9	3,555.8	0.29
11,181.0	90.48	174.73	7,039.5	-4,055.0	-682.0	3,647.1	4.44
11,273.0	90.75	173.23	7,038.5	-4,146.5	-672.3	3,737.1	1.66
11,366.0	89.78	172.97	7,038.0	-4,238.8	-661.2	3,828.4	1.08
11,459.0	89.16	171.56	7,038.9	-4,331.0	-648.7	3,919.9	1.66
11,551.0	89.25	166.82	7,040.2	-4,421.3	-631.4	4,011.2	5.15
11,644.0	88.99	169.01	7,041.6	-4,512.2	-611.9	4,103.7	2.37
11,736.0	90.22	172.35	7,042.2	-4,603.0	-597.0	4,194.6	3.87
11,829.0	90.04	173.23	7,042.0	-4,695.3	-585.4	4,286.0	0.97
11,922.0	90.66	170.33	7,041.5	-4,787.3	-572.1	4,377.6	3.19
12,015.0	90.20	169.70	7,040.8	-4,878.9	-556.0	4,469.7	0.84
12,107.0	89.78	171.48	7,040.8	-4,969.7	-540.9	4,560.7	1.99
12,201.0	89.25	168.58	7,041.6	-5,062.2	-524.6	4,653.8	3.14
12,295.0	88.90	169.37	7,043.1	-5,154.5	-506.7	4,747.1	0.92
12,389.0	89.52	169.45	7,044.4	-5,246.9	-489.4	4,840.3	0.67
12,483.0	88.81	167.26	7,045.8	-5,338.9	-470.4	4,933.7	2.45
12,577.0	89.43	169.37	7,047.2	-5,431.0	-451.4	5,027.1	2.34
12,671.0	89.96	168.84	7,047.7	-5,523.3	-433.6	5,120.4	0.80
12,766.0	90.04	171.04	7,047.7	-5,616.8	-417.0	5,214.5	2.32
12,860.0	90.40	168.93	7,047.3	-5,709.4	-400.7	5,307.6	2.28
12,954.0	88.64	169.81	7,048.1	-5,801.7	-383.3	5,400.8	2.09
13,049.0	89.60	171.30	7,049.6	-5,895.4	-367.8	5,494.8	1.87
13,144.0	89.43	172.88	7,050.4	-5,989.5	-354.7	5,588.3	1.67
13,238.0	90.48	173.15	7,050.5	-6,082.8	-343.3	5,680.6	1.67
13,331.0	89.60	171.65	7,050.4	-6,175.0	-331.0	5,772.9	1.67
13,424.0	89.43	168.75	7,051.2	-6,266.6	-315.1	5,864.1	3.12
13,516.0	89.60	171.21	7,052.0	-6,357.2	-299.1	5,955.2	2.68
13,609.0	89.52	172.62	7,052.7	-6,449.3	-286.0	6,046.8	1.52
13,701.0	90.04	171.74	7,053.0	-6,540.4	-273.5	6,137.4	1.11
13,794.0	89.69	169.54	7,053.2	-6,632.2	-258.4	6,229.3	2.40
13,886.0	89.87	171.83	7,053.6	-6,723.0	-243.5	6,320.3	2.50
13,979.0	89.69	168.84	7,054.0	-6,814.6	-227.9	6,412.3	3.22
14,072.0	89.96	166.55	7,054.2	-6,905.5	-208.1	6,504.8	2.48
14,164.0	89.34	169.01	7,054.8	-6,995.4	-188.6	6,596.4	2.76
14,257.0	89.52	169.01	7,055.7	-7,086.7	-170.9	6,688.7	0.19
14,349.0	89.34	167.17	7,056.6	-7,176.7	-151.9	6,780.2	2.01
14,442.0	89.87	170.07	7,057.3	-7,267.9	-133.5	6,872.5	3.17
14,535.0	90.22	171.30	7,057.2	-7,359.6	-118.5	6,964.5	1.38
14,627.0	89.96	170.68	7,057.1	-7,450.5	-104.1	7,055.4	0.73
14,720.0	88.99	171.21	7,057.9	-7,542.3	-89.5	7,147.2	1.19
14,813.0	88.72	171.74	7,059.8	-7,634.3	-75.7	7,238.9	0.64

Received
Office of Oil & Gas
JUL 05 2016



Company:	Antero	Local Co-ordinate Reference:	Well Berry Unit 1H
Project:	Tyler County WV	TVD Reference:	Precision 522 GL 1164' + KB 18' @ 1182.0usft
Site:	Coastal 1 Pad: Berry/Gray/Owo	MD Reference:	Precision 522 GL 1164' + KB 18' @ 1182.0usft
Well:	Berry Unit 1H	North Reference:	Grid
Wellbore:	Original Wellpath	Survey Calculation Method:	Minimum Curvature
Design:	As Drilled	Database:	Antero NE

Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)
14,905.0	89.69	168.58	7,061.1	-7,724.9	-59.9	7,330.0	3.59
14,998.0	90.48	168.75	7,060.9	-7,816.1	-41.7	7,422.4	0.87
15,090.0	89.43	170.42	7,061.0	-7,906.6	-25.0	7,513.6	2.14
15,183.0	89.52	171.21	7,061.8	-7,998.4	-10.2	7,605.5	0.85
15,275.0	89.52	171.65	7,062.6	-8,089.3	3.5	7,696.3	0.48
15,368.0	90.75	171.48	7,062.4	-8,181.3	17.2	7,788.0	1.34
15,461.0	89.43	173.59	7,062.2	-8,273.5	29.2	7,879.4	2.68
15,553.0	90.40	174.29	7,062.4	-8,365.0	39.0	7,969.4	1.30
15,646.0	90.40	171.30	7,061.7	-8,457.3	50.6	8,060.8	3.21
15,739.0	89.69	170.33	7,061.7	-8,549.1	65.5	8,152.7	1.29
15,831.0	89.60	169.89	7,062.2	-8,639.7	81.3	8,243.8	0.49
15,924.0	89.16	164.88	7,063.2	-8,730.4	101.6	8,336.3	5.41
15,999.0	89.60	165.41	7,064.1	-8,802.9	120.8	8,411.2	0.92
16,061.9	89.60	165.41	7,064.5	-8,863.8	136.6	8,474.0	0.00
16,062.0	89.60	165.41	7,064.5	-8,863.9	136.7	8,474.1	0.00

PTB

Design Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
7,065.0	6,772.5	-77.6	-1,211.4	MDLX
7,264.0	6,904.5	-215.2	-1,263.9	BRKT
7,321.0	6,934.9	-262.7	-1,271.7	TLTY
7,458.0	6,992.0	-386.8	-1,275.8	MRCL_HOT
16,062.0	7,064.5	-8,863.9	136.7	PTB

Checked By: _____ Approved By: _____ Date: _____

Office of Oil & Gas
JUL 05 2016