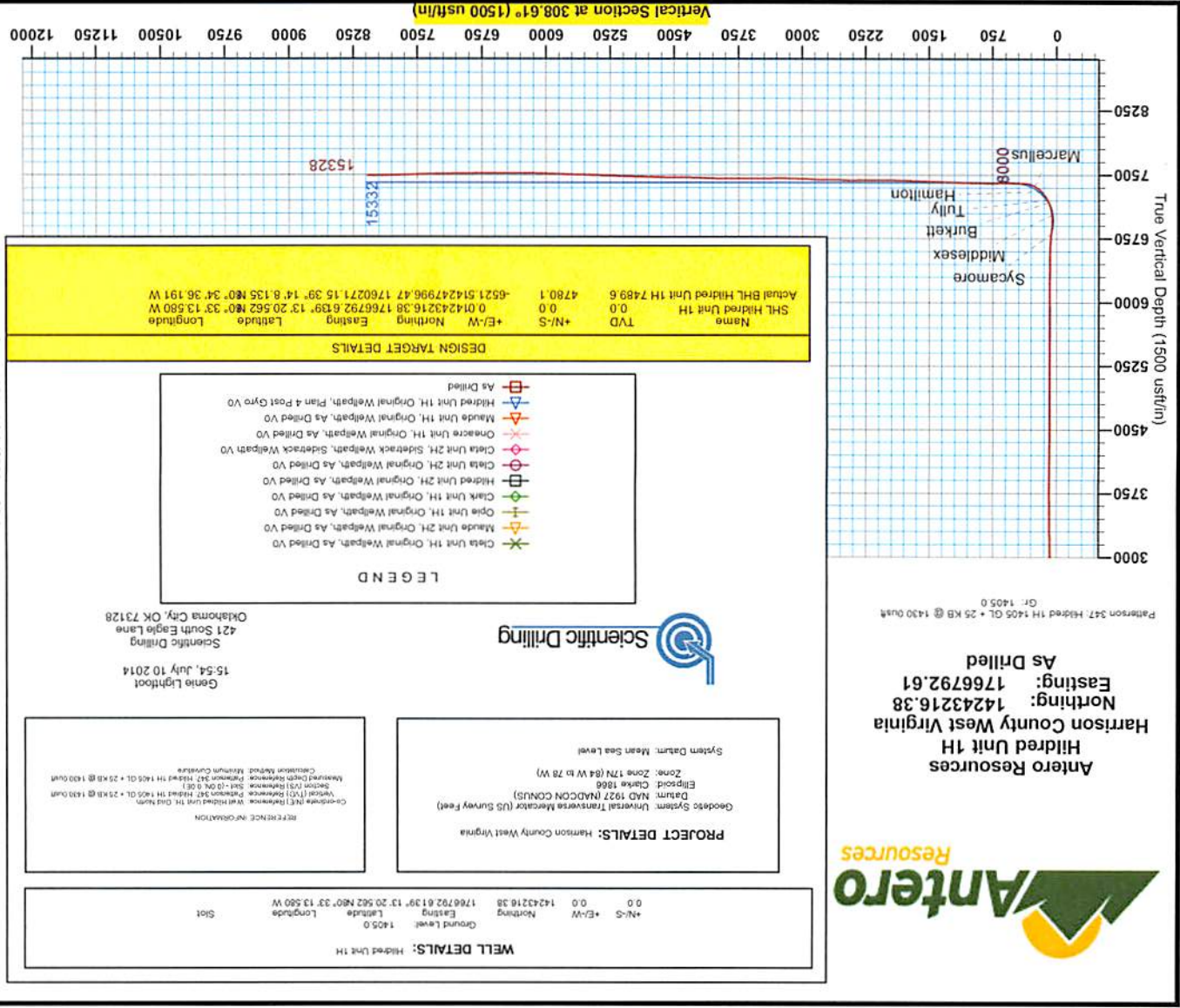




Antero Resources
 Hildred Unit 1H
 Harrison County West Virginia
 Northing: 14243216.38
 Easting: 1766792.61
 As Drilled

Paterson 347, Hildred 1H 1405 CL + 25 KB @ 1430 Quat
 G1-1405.0



DESIGN TARGET DETAILS

Name	TVD	+N-S	+E-W	Longitude	Latitude
Actual BHL Hildred Unit 1H 7489.6	4780.1	-6521.514247996	47	1760271.15	39° 14' 8.135 180° 34' 36.191 W
SHL Hildred Unit 1H	0.0	0.014243216	38	1766792.6139	13° 20' 562 180° 33' 13.580 W

LEGEND

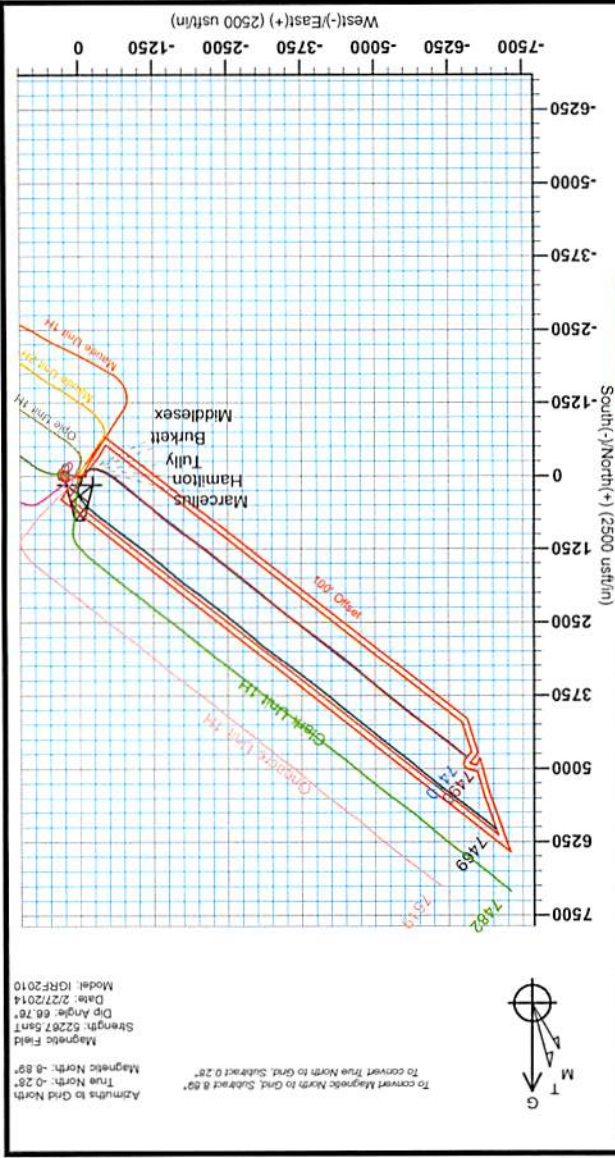
- As Drilled
- Hildred Unit 1H, Original Wellpath, As Drilled VO
- Mauda Unit 1H, Original Wellpath, As Drilled VO
- Oraclare Unit 1H, Original Wellpath, As Drilled VO
- Cata Unit 2H, Sidetrack Wellpath, Sidetrack Wellpath VO
- Cata Unit 2H, Original Wellpath, As Drilled VO
- Hildred Unit 2H, Original Wellpath, As Drilled VO
- Cata Unit 1H, Original Wellpath, As Drilled VO
- Oraclare Unit 1H, Original Wellpath, As Drilled VO
- Mauda Unit 2H, Original Wellpath, As Drilled VO
- Cata Unit 1H, Original Wellpath, As Drilled VO

PROJECT DETAILS: Harrison County West Virginia
 Geodetic System: Universal Transverse Mercator (US Survey Feet)
 Datum: NAD 1927 (NADCCN CONUS)
 Epoch: Clark 1866
 Zone: 17N (84 W to 78 W)
 System Datum: Mean Sea Level

WELL DETAILS: Hildred Unit 1H
 Ground Level: 1405.0
 Easting: 1766792.6191
 Longitude: 13° 20' 562 N80° 33' 13.580 W
 Slot

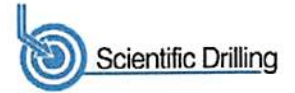
REFERENCE INFORMATION
 Coordinates (N/E) Reference: Well Hildred Unit 1H Old Perm
 Vertical (TVD) Reference: Paterson 347, Hildred 1H 1405 CL + 25 KB @ 1430 Quat
 Section (US) Reference: Slot -1.006 (3.0E)
 Measured Depth Reference: Paterson 347, Hildred 1H 1405 CL + 25 KB @ 1430 Quat
 Completion Method: Minimum Curvature

Scientific Drilling
 421 South Eagle Lane
 Oklahoma City, OK 73128
 15-54, July 10 2014
 Genie Lighthouse



Vertical Section at 308.61° (1500 usft/m)

West(-)/East(+) (2500 usft/m)



Company:	Antero Resources	Local Co-ordinate Reference:	Well Hildred Unit 1H
Project:	Harrison County West Virginia	TVD Reference:	Patterson 347: Hildred 1H 1405 GL + 25 KB @ 1430.0usft
Site:	Cleta / Opie / Maude Pad	MD Reference:	Patterson 347: Hildred 1H 1405 GL + 25 KB @ 1430.0usft
Well:	Hildred Unit 1H	North Reference:	Grid
Wellbore:	Original Wellpath	Survey Calculation Method:	Minimum Curvature
Design:	As Drilled	Database:	Oklahoma District

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

Site Cleta / Opie / Maude Pad, SHL Cleta Unit 1H

Site Position:		Northing:	14,243,194.63 usft	Latitude:	39° 13' 20.344 N
From:	Map	Easting:	1,766,859.11 usft	Longitude:	80° 33' 12.736 W
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.28 °

Well Hildred Unit 1H, Marcellus

Well Position	+N/-S	0.0 usft	Northing:	14,243,216.38 usft	Latitude:	39° 13' 20.562 N
	+E/-W	0.0 usft	Easting:	1,766,792.61 usft	Longitude:	80° 33' 13.580 W
Position Uncertainty		2.0 usft	Wellhead Elevation:	1,430.0 usft	Ground Level:	1,405.0 usft

Wellbore Original Wellpath

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	2/27/2014	-8.61	66.76	52,268

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	308.61

Survey Program Date 7/10/2014

From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
112.0	6,510.0	Survey #7 Final Gyro (Original Wellpath)	SDI Standard Keeper	Scientific Drilling Intl. Standard Wireline Keeper
6,603.0	15,328.0	Survey #8 MWD (Original Wellpath)	MWD SDI	MWD - Standard ver 1.0.1

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
0.0	0.00	0.00	0.0	0.0	0.0	14,243,216.38	1,766,792.61	39° 13' 20.562 N	80° 33' 13.580 W
112.0	0.14	300.90	112.0	0.1	-0.1	14,243,216.45	1,766,792.49	39° 13' 20.563 N	80° 33' 13.582 W
212.0	0.13	103.69	212.0	0.1	-0.1	14,243,216.49	1,766,792.49	39° 13' 20.563 N	80° 33' 13.582 W
312.0	0.04	169.54	312.0	0.0	0.0	14,243,216.43	1,766,792.61	39° 13' 20.563 N	80° 33' 13.580 W
412.0	0.11	131.32	412.0	-0.1	0.1	14,243,216.33	1,766,792.69	39° 13' 20.562 N	80° 33' 13.579 W
512.0	0.19	106.83	512.0	-0.2	0.3	14,243,216.22	1,766,792.92	39° 13' 20.561 N	80° 33' 13.576 W
612.0	0.18	88.32	612.0	-0.2	0.6	14,243,216.17	1,766,793.23	39° 13' 20.560 N	80° 33' 13.572 W
712.0	0.21	99.78	712.0	-0.2	1.0	14,243,216.15	1,766,793.57	39° 13' 20.560 N	80° 33' 13.568 W
812.0	0.22	104.82	812.0	-0.3	1.3	14,243,216.07	1,766,793.94	39° 13' 20.559 N	80° 33' 13.564 W

Company:	Antero Resources	Local Co-ordinate Reference:	Well Hildred Unit 1H
Project:	Harrison County West Virginia	TVD Reference:	Patterson 347: Hildred 1H 1405 GL + 25 KB @ 1430.0usft
Site:	Cleta / Opie / Maude Pad	MD Reference:	Patterson 347: Hildred 1H 1405 GL + 25 KB @ 1430.0usft
Well:	Hildred Unit 1H	North Reference:	Grid
Wellbore:	Original Wellpath	Survey Calculation Method:	Minimum Curvature
Design:	As Drilled	Database:	Oklahoma District

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
912.0	0.33	117.12	912.0	-0.5	1.8	14,243,215.89	1,766,794.38	39° 13' 20.557 N	80° 33' 13.558 W
1,012.0	0.35	131.69	1,012.0	-0.8	2.3	14,243,215.55	1,766,794.87	39° 13' 20.554 N	80° 33' 13.552 W
1,112.0	0.49	116.34	1,112.0	-1.2	2.9	14,243,215.16	1,766,795.48	39° 13' 20.550 N	80° 33' 13.544 W
1,212.0	0.47	116.50	1,212.0	-1.6	3.6	14,243,214.79	1,766,796.23	39° 13' 20.546 N	80° 33' 13.535 W
1,312.0	0.73	117.94	1,312.0	-2.1	4.6	14,243,214.31	1,766,797.16	39° 13' 20.542 N	80° 33' 13.523 W
1,412.0	0.41	130.93	1,412.0	-2.6	5.4	14,243,213.77	1,766,797.99	39° 13' 20.536 N	80° 33' 13.512 W
1,512.0	2.09	255.98	1,512.0	-3.3	3.9	14,243,213.10	1,766,796.49	39° 13' 20.530 N	80° 33' 13.531 W
1,612.0	5.23	259.59	1,611.7	-4.6	-2.4	14,243,211.83	1,766,790.24	39° 13' 20.518 N	80° 33' 13.611 W
1,712.0	6.95	263.28	1,711.2	-6.1	-12.9	14,243,210.30	1,766,779.75	39° 13' 20.503 N	80° 33' 13.744 W
1,812.0	6.94	271.16	1,810.4	-6.7	-24.9	14,243,209.71	1,766,767.70	39° 13' 20.498 N	80° 33' 13.898 W
1,912.0	6.24	275.77	1,909.8	-6.0	-36.4	14,243,210.38	1,766,756.25	39° 13' 20.505 N	80° 33' 14.043 W
2,012.0	5.63	277.94	2,009.2	-4.8	-46.6	14,243,211.61	1,766,745.98	39° 13' 20.517 N	80° 33' 14.173 W
2,112.0	5.04	277.55	2,108.8	-3.5	-55.8	14,243,212.86	1,766,736.77	39° 13' 20.530 N	80° 33' 14.290 W
2,212.0	4.56	277.16	2,208.5	-2.4	-64.1	14,243,213.93	1,766,728.47	39° 13' 20.541 N	80° 33' 14.396 W
2,312.0	4.00	279.25	2,308.2	-1.4	-71.5	14,243,214.99	1,766,721.08	39° 13' 20.552 N	80° 33' 14.490 W
2,412.0	3.26	281.34	2,408.0	-0.3	-77.8	14,243,216.11	1,766,714.85	39° 13' 20.563 N	80° 33' 14.569 W
2,512.0	2.78	282.77	2,507.8	0.8	-82.9	14,243,217.20	1,766,709.70	39° 13' 20.575 N	80° 33' 14.634 W
2,612.0	2.28	283.59	2,607.7	1.8	-87.2	14,243,218.21	1,766,705.40	39° 13' 20.585 N	80° 33' 14.689 W
2,712.0	1.51	288.47	2,707.7	2.7	-90.4	14,243,219.09	1,766,702.22	39° 13' 20.594 N	80° 33' 14.729 W
2,812.0	1.13	286.39	2,807.7	3.4	-92.6	14,243,219.79	1,766,700.02	39° 13' 20.601 N	80° 33' 14.757 W
2,912.0	0.79	285.51	2,907.6	3.9	-94.2	14,243,220.25	1,766,698.41	39° 13' 20.605 N	80° 33' 14.778 W
3,012.0	0.52	296.18	3,007.6	4.3	-95.3	14,243,220.64	1,766,697.34	39° 13' 20.609 N	80° 33' 14.791 W
3,112.0	0.56	307.17	3,107.6	4.7	-96.1	14,243,221.13	1,766,696.55	39° 13' 20.614 N	80° 33' 14.801 W
3,212.0	0.58	335.28	3,207.6	5.5	-96.7	14,243,221.89	1,766,695.94	39° 13' 20.622 N	80° 33' 14.809 W
3,312.0	0.31	326.28	3,307.6	6.2	-97.0	14,243,222.57	1,766,695.58	39° 13' 20.628 N	80° 33' 14.813 W
3,412.0	0.13	302.91	3,407.6	6.5	-97.3	14,243,222.86	1,766,695.34	39° 13' 20.631 N	80° 33' 14.816 W
3,512.0	0.55	256.55	3,507.6	6.4	-97.8	14,243,222.81	1,766,694.78	39° 13' 20.631 N	80° 33' 14.824 W
3,612.0	0.91	262.55	3,607.6	6.2	-99.1	14,243,222.59	1,766,693.52	39° 13' 20.629 N	80° 33' 14.840 W
3,712.0	0.68	261.50	3,707.6	6.0	-100.5	14,243,222.40	1,766,692.15	39° 13' 20.627 N	80° 33' 14.857 W
3,812.0	0.72	263.50	3,807.6	5.9	-101.7	14,243,222.24	1,766,690.94	39° 13' 20.625 N	80° 33' 14.872 W
3,912.0	0.34	266.06	3,907.6	5.8	-102.6	14,243,222.15	1,766,690.02	39° 13' 20.624 N	80° 33' 14.884 W
4,012.0	0.38	238.85	4,007.6	5.6	-103.2	14,243,221.96	1,766,689.44	39° 13' 20.623 N	80° 33' 14.892 W
4,112.0	0.38	246.83	4,107.6	5.3	-103.8	14,243,221.66	1,766,688.85	39° 13' 20.620 N	80° 33' 14.899 W
4,212.0	0.14	231.10	4,207.6	5.1	-104.2	14,243,221.45	1,766,688.45	39° 13' 20.618 N	80° 33' 14.904 W
4,312.0	0.23	178.53	4,307.6	4.8	-104.2	14,243,221.17	1,766,688.36	39° 13' 20.615 N	80° 33' 14.905 W
4,412.0	0.26	150.01	4,407.6	4.4	-104.1	14,243,220.78	1,766,688.48	39° 13' 20.611 N	80° 33' 14.904 W
4,512.0	0.36	139.47	4,507.6	4.0	-103.8	14,243,220.34	1,766,688.79	39° 13' 20.607 N	80° 33' 14.900 W
4,612.0	0.33	127.43	4,607.6	3.5	-103.4	14,243,219.93	1,766,689.23	39° 13' 20.602 N	80° 33' 14.894 W
4,712.0	0.35	131.23	4,707.6	3.2	-102.9	14,243,219.55	1,766,689.68	39° 13' 20.599 N	80° 33' 14.889 W
4,812.0	0.34	101.13	4,807.6	2.9	-102.4	14,243,219.29	1,766,690.21	39° 13' 20.596 N	80° 33' 14.882 W
4,912.0	0.34	101.32	4,907.6	2.8	-101.8	14,243,219.18	1,766,690.79	39° 13' 20.595 N	80° 33' 14.875 W
5,012.0	0.39	107.74	5,007.6	2.6	-101.2	14,243,219.01	1,766,691.40	39° 13' 20.593 N	80° 33' 14.867 W
5,112.0	0.39	98.17	5,107.6	2.5	-100.5	14,243,218.86	1,766,692.06	39° 13' 20.592 N	80° 33' 14.858 W
5,212.0	0.33	71.56	5,207.6	2.5	-99.9	14,243,218.91	1,766,692.67	39° 13' 20.592 N	80° 33' 14.851 W
5,312.0	0.36	65.16	5,307.6	2.7	-99.4	14,243,219.13	1,766,693.23	39° 13' 20.594 N	80° 33' 14.843 W
5,412.0	0.44	67.02	5,407.6	3.0	-98.7	14,243,219.41	1,766,693.87	39° 13' 20.597 N	80° 33' 14.835 W
5,512.0	0.41	45.43	5,507.6	3.4	-98.1	14,243,219.81	1,766,694.48	39° 13' 20.601 N	80° 33' 14.828 W
5,612.0	0.38	43.44	5,607.6	3.9	-97.6	14,243,220.30	1,766,694.96	39° 13' 20.606 N	80° 33' 14.821 W
5,712.0	0.32	45.57	5,707.6	4.4	-97.2	14,243,220.74	1,766,695.39	39° 13' 20.610 N	80° 33' 14.816 W
5,812.0	0.27	36.01	5,807.6	4.7	-96.9	14,243,221.13	1,766,695.73	39° 13' 20.614 N	80° 33' 14.812 W
5,912.0	0.39	11.41	5,907.6	5.3	-96.7	14,243,221.65	1,766,695.93	39° 13' 20.619 N	80° 33' 14.809 W
6,012.0	0.47	23.80	6,007.6	6.0	-96.4	14,243,222.36	1,766,696.17	39° 13' 20.626 N	80° 33' 14.806 W
6,112.0	0.40	42.40	6,107.6	6.6	-96.0	14,243,222.99	1,766,696.57	39° 13' 20.632 N	80° 33' 14.801 W

Company:	Antero Resources	Local Co-ordinate Reference:	Well Hildred Unit 1H
Project:	Harrison County West Virginia	TVD Reference:	Patterson 347: Hildred 1H 1405 GL + 25 KB @ 1430.0usft
Site:	Cleta / Opie / Maude Pad	MD Reference:	Patterson 347: Hildred 1H 1405 GL + 25 KB @ 1430.0usft
Well:	Hildred Unit 1H	North Reference:	Grid
Wellbore:	Original Wellpath	Survey Calculation Method:	Minimum Curvature
Design:	As Drilled	Database:	Oklahoma District

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
6,212.0	0.34	29.02	6,207.6	7.1	-95.7	14,243,223.51	1,766,696.95	39° 13' 20.638 N	80° 33' 14.796 W
6,312.0	0.41	79.13	6,307.5	7.5	-95.2	14,243,223.84	1,766,697.44	39° 13' 20.641 N	80° 33' 14.790 W
6,412.0	0.43	82.04	6,407.5	7.6	-94.4	14,243,223.95	1,766,698.16	39° 13' 20.642 N	80° 33' 14.780 W
6,510.0	0.44	82.61	6,505.5	7.7	-93.7	14,243,224.05	1,766,698.90	39° 13' 20.643 N	80° 33' 14.771 W
6,603.0	0.36	105.56	6,598.5	7.6	-93.1	14,243,224.02	1,766,699.54	39° 13' 20.642 N	80° 33' 14.763 W
6,635.0	1.42	180.59	6,630.5	7.2	-93.0	14,243,223.60	1,766,699.63	39° 13' 20.638 N	80° 33' 14.762 W
6,666.0	4.36	187.01	6,661.5	5.7	-93.1	14,243,222.04	1,766,699.48	39° 13' 20.623 N	80° 33' 14.764 W
6,698.0	7.65	190.36	6,693.3	2.4	-93.7	14,243,218.74	1,766,698.95	39° 13' 20.590 N	80° 33' 14.771 W
6,729.0	11.34	194.23	6,723.9	-2.6	-94.8	14,243,213.76	1,766,697.83	39° 13' 20.541 N	80° 33' 14.785 W
6,760.0	14.23	197.62	6,754.1	-9.2	-96.7	14,243,207.17	1,766,695.93	39° 13' 20.476 N	80° 33' 14.810 W
6,792.0	16.50	198.59	6,785.0	-17.3	-99.3	14,243,199.11	1,766,693.29	39° 13' 20.396 N	80° 33' 14.844 W
6,819.0	18.75	197.84	6,810.7	-25.0	-101.9	14,243,191.35	1,766,690.74	39° 13' 20.320 N	80° 33' 14.877 W
Sycamore									
6,823.0	19.08	197.74	6,814.5	-26.3	-102.3	14,243,190.11	1,766,690.34	39° 13' 20.308 N	80° 33' 14.882 W
6,855.0	22.88	197.92	6,844.4	-37.2	-105.8	14,243,179.21	1,766,686.83	39° 13' 20.200 N	80° 33' 14.927 W
6,886.0	24.07	199.58	6,872.8	-48.9	-109.7	14,243,167.52	1,766,682.86	39° 13' 20.085 N	80° 33' 14.979 W
6,918.0	23.17	207.60	6,902.1	-60.6	-114.9	14,243,155.79	1,766,677.75	39° 13' 19.969 N	80° 33' 15.044 W
6,949.0	22.94	217.21	6,930.7	-70.8	-121.3	14,243,145.57	1,766,671.27	39° 13' 19.868 N	80° 33' 15.127 W
6,981.0	22.83	224.33	6,960.1	-80.2	-129.4	14,243,136.16	1,766,663.16	39° 13' 19.775 N	80° 33' 15.231 W
7,012.0	22.51	227.55	6,988.7	-88.5	-138.0	14,243,127.85	1,766,654.58	39° 13' 19.694 N	80° 33' 15.340 W
7,043.0	22.34	229.64	7,017.4	-96.4	-146.9	14,243,120.03	1,766,645.71	39° 13' 19.617 N	80° 33' 15.454 W
7,060.0	22.28	233.14	7,033.1	-100.4	-151.9	14,243,116.00	1,766,640.67	39° 13' 19.577 N	80° 33' 15.518 W
Middlesex									
7,075.0	22.29	236.24	7,047.0	-103.7	-156.6	14,243,112.72	1,766,636.03	39° 13' 19.545 N	80° 33' 15.577 W
7,106.0	22.54	243.30	7,075.7	-109.6	-166.8	14,243,106.78	1,766,625.83	39° 13' 19.487 N	80° 33' 15.707 W
7,138.0	24.36	250.88	7,105.0	-114.5	-178.5	14,243,101.86	1,766,614.11	39° 13' 19.439 N	80° 33' 15.856 W
7,169.0	26.17	256.53	7,133.1	-118.2	-191.2	14,243,098.17	1,766,601.42	39° 13' 19.403 N	80° 33' 16.018 W
7,201.0	28.44	262.41	7,161.5	-120.9	-205.6	14,243,095.52	1,766,587.00	39° 13' 19.377 N	80° 33' 16.201 W
7,222.0	29.92	266.04	7,179.8	-121.9	-215.8	14,243,094.50	1,766,576.82	39° 13' 19.368 N	80° 33' 16.331 W
Burkett									
7,232.0	30.66	267.65	7,188.5	-122.2	-220.8	14,243,094.22	1,766,571.78	39° 13' 19.365 N	80° 33' 16.395 W
7,254.0	32.76	270.88	7,207.2	-122.3	-232.4	14,243,094.08	1,766,560.22	39° 13' 19.364 N	80° 33' 16.542 W
Tully									
7,263.0	33.64	272.10	7,214.7	-122.2	-237.3	14,243,094.21	1,766,555.30	39° 13' 19.366 N	80° 33' 16.605 W
7,295.0	37.64	275.79	7,240.7	-120.9	-255.9	14,243,095.52	1,766,536.71	39° 13' 19.380 N	80° 33' 16.841 W
7,326.0	41.44	277.80	7,264.6	-118.5	-275.5	14,243,097.87	1,766,517.12	39° 13' 19.404 N	80° 33' 17.090 W
7,358.0	44.84	278.96	7,288.0	-115.3	-297.1	14,243,101.07	1,766,495.48	39° 13' 19.437 N	80° 33' 17.364 W
7,386.0	47.36	281.62	7,307.4	-111.7	-317.0	14,243,104.68	1,766,475.64	39° 13' 19.473 N	80° 33' 17.616 W
Hamilton									
7,389.0	47.63	281.89	7,309.4	-111.3	-319.1	14,243,105.13	1,766,473.47	39° 13' 19.478 N	80° 33' 17.644 W
7,420.0	51.35	284.14	7,329.6	-105.9	-342.1	14,243,110.45	1,766,450.52	39° 13' 19.532 N	80° 33' 17.935 W
7,452.0	55.52	287.36	7,348.6	-98.9	-366.8	14,243,117.44	1,766,425.80	39° 13' 19.602 N	80° 33' 18.249 W
7,483.0	61.29	290.38	7,364.9	-90.4	-391.8	14,243,126.00	1,766,400.83	39° 13' 19.688 N	80° 33' 18.566 W
7,489.0	62.45	290.83	7,367.7	-88.5	-396.7	14,243,127.86	1,766,395.88	39° 13' 19.706 N	80° 33' 18.629 W
Marcellus									
7,515.0	67.48	292.67	7,378.7	-79.8	-418.6	14,243,136.59	1,766,374.01	39° 13' 19.794 N	80° 33' 18.906 W
7,546.0	73.19	293.58	7,389.1	-68.3	-445.4	14,243,148.05	1,766,347.18	39° 13' 19.908 N	80° 33' 19.247 W
7,577.0	80.64	295.59	7,396.1	-55.8	-472.9	14,243,160.61	1,766,319.74	39° 13' 20.034 N	80° 33' 19.595 W
7,592.0	83.17	297.26	7,398.2	-49.2	-486.2	14,243,167.22	1,766,306.45	39° 13' 20.100 N	80° 33' 19.763 W
7,632.0	88.36	302.69	7,401.2	-29.2	-520.7	14,243,187.14	1,766,271.92	39° 13' 20.299 N	80° 33' 20.201 W
7,664.0	88.63	306.21	7,402.0	-11.1	-547.1	14,243,205.24	1,766,245.54	39° 13' 20.479 N	80° 33' 20.535 W
7,695.0	89.13	307.27	7,402.6	7.4	-571.9	14,243,223.78	1,766,220.71	39° 13' 20.663 N	80° 33' 20.849 W



Company:	Antero Resources	Local Co-ordinate Reference:	Well Hildred Unit 1H
Project:	Harrison County West Virginia	TVD Reference:	Patterson 347: Hildred 1H 1405 GL + 25 KB @ 1430.0usft
Site:	Cleta / Opie / Maude Pad	MD Reference:	Patterson 347: Hildred 1H 1405 GL + 25 KB @ 1430.0usft
Well:	Hildred Unit 1H	North Reference:	Grid
Wellbore:	Original Wellpath	Survey Calculation Method:	Minimum Curvature
Design:	As Drilled	Database:	Oklahoma District

Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude	
7,789.0	89.03	310.74	7,404.2	66.5	-644.9	14,243,282.92	1,766,147.68	39° 13' 21.252 N	80° 33' 21.774 W	
7,883.0	90.54	310.85	7,404.5	128.0	-716.1	14,243,344.34	1,766,076.52	39° 13' 21.862 N	80° 33' 22.675 W	
7,977.0	90.48	310.86	7,403.7	189.4	-787.2	14,243,405.82	1,766,005.43	39° 13' 22.474 N	80° 33' 23.575 W	
8,072.0	90.34	310.64	7,403.0	251.5	-859.1	14,243,467.83	1,765,933.46	39° 13' 23.090 N	80° 33' 24.486 W	
8,166.0	89.63	311.12	7,403.0	313.0	-930.2	14,243,529.35	1,765,862.39	39° 13' 23.702 N	80° 33' 25.385 W	
8,256.0	88.16	309.85	7,404.8	371.4	-998.7	14,243,587.77	1,765,793.95	39° 13' 24.283 N	80° 33' 26.251 W	
8,347.0	88.09	309.53	7,407.7	429.5	-1,068.6	14,243,645.86	1,765,723.96	39° 13' 24.861 N	80° 33' 27.137 W	
8,438.0	88.05	309.37	7,410.8	487.3	-1,138.9	14,243,703.65	1,765,653.74	39° 13' 25.435 N	80° 33' 28.027 W	
8,531.0	88.83	310.96	7,413.3	547.2	-1,209.9	14,243,763.61	1,765,582.70	39° 13' 26.032 N	80° 33' 28.926 W	
8,623.0	88.86	311.99	7,415.2	608.1	-1,278.8	14,243,824.52	1,765,513.78	39° 13' 26.637 N	80° 33' 29.798 W	
8,716.0	87.92	311.19	7,417.8	669.9	-1,348.4	14,243,886.23	1,765,444.25	39° 13' 27.251 N	80° 33' 30.678 W	
8,808.0	86.58	310.58	7,422.2	730.0	-1,417.8	14,243,946.38	1,765,374.78	39° 13' 27.849 N	80° 33' 31.557 W	
8,901.0	86.74	308.84	7,427.6	789.3	-1,489.2	14,244,005.69	1,765,303.36	39° 13' 28.439 N	80° 33' 32.462 W	
8,993.0	88.02	307.20	7,431.8	845.9	-1,561.6	14,244,062.30	1,765,230.96	39° 13' 29.002 N	80° 33' 33.378 W	
9,055.0	88.02	306.73	7,434.0	883.2	-1,611.2	14,244,099.56	1,765,181.45	39° 13' 29.373 N	80° 33' 34.005 W	
9,147.0	88.69	305.81	7,436.6	937.6	-1,685.3	14,244,153.96	1,765,107.31	39° 13' 29.914 N	80° 33' 34.944 W	
9,239.0	89.60	306.53	7,438.0	991.9	-1,759.6	14,244,208.25	1,765,033.05	39° 13' 30.455 N	80° 33' 35.885 W	
9,363.0	89.36	305.41	7,439.1	1,064.7	-1,859.9	14,244,281.08	1,764,932.70	39° 13' 31.180 N	80° 33' 37.156 W	
9,457.0	91.01	307.72	7,438.8	1,120.7	-1,935.4	14,244,337.07	1,764,857.21	39° 13' 31.737 N	80° 33' 38.112 W	
9,551.0	91.17	306.62	7,437.0	1,177.5	-2,010.3	14,244,393.85	1,764,782.32	39° 13' 32.302 N	80° 33' 39.061 W	
9,645.0	89.66	307.23	7,436.3	1,233.9	-2,085.4	14,244,450.32	1,764,707.18	39° 13' 32.864 N	80° 33' 40.012 W	
9,739.0	88.19	306.05	7,438.1	1,290.0	-2,160.8	14,244,506.41	1,764,631.77	39° 13' 33.422 N	80° 33' 40.968 W	
9,833.0	88.86	308.40	7,440.5	1,346.9	-2,235.7	14,244,563.25	1,764,556.95	39° 13' 33.987 N	80° 33' 41.915 W	
9,928.0	90.30	309.89	7,441.2	1,406.8	-2,309.3	14,244,623.22	1,764,483.28	39° 13' 34.584 N	80° 33' 42.848 W	
10,022.0	89.97	310.02	7,441.0	1,467.2	-2,381.4	14,244,683.58	1,764,411.23	39° 13' 35.184 N	80° 33' 43.760 W	
10,116.0	87.01	307.17	7,443.5	1,525.8	-2,454.8	14,244,742.19	1,764,337.80	39° 13' 35.767 N	80° 33' 44.690 W	
10,210.0	86.67	307.34	7,448.7	1,582.6	-2,529.5	14,244,799.01	1,764,263.10	39° 13' 36.333 N	80° 33' 45.636 W	
10,305.0	86.40	309.48	7,454.4	1,641.5	-2,603.8	14,244,857.92	1,764,188.80	39° 13' 36.919 N	80° 33' 46.577 W	
10,399.0	91.34	310.12	7,456.3	1,701.7	-2,676.0	14,244,918.06	1,764,116.62	39° 13' 37.517 N	80° 33' 47.491 W	
10,493.0	91.24	309.18	7,454.1	1,761.6	-2,748.3	14,244,978.02	1,764,044.26	39° 13' 38.113 N	80° 33' 48.407 W	
10,587.0	90.54	309.04	7,452.7	1,820.9	-2,821.3	14,245,037.31	1,763,971.33	39° 13' 38.703 N	80° 33' 49.330 W	
10,681.0	89.23	308.22	7,452.9	1,879.6	-2,894.7	14,245,095.99	1,763,897.90	39° 13' 39.286 N	80° 33' 50.260 W	
10,775.0	88.69	307.40	7,454.6	1,937.2	-2,969.0	14,245,153.61	1,763,823.65	39° 13' 39.860 N	80° 33' 51.201 W	
10,869.0	90.03	309.71	7,455.6	1,995.8	-3,042.5	14,245,212.19	1,763,750.15	39° 13' 40.442 N	80° 33' 52.131 W	
10,963.0	90.67	309.71	7,455.0	2,055.9	-3,114.8	14,245,272.24	1,763,677.84	39° 13' 41.040 N	80° 33' 53.047 W	
11,057.0	89.16	309.92	7,455.2	2,116.0	-3,187.0	14,245,332.43	1,763,605.64	39° 13' 41.638 N	80° 33' 53.961 W	
11,152.0	90.00	310.02	7,455.9	2,177.1	-3,259.8	14,245,393.45	1,763,532.84	39° 13' 42.245 N	80° 33' 54.883 W	
11,246.0	90.07	311.37	7,455.8	2,238.4	-3,331.0	14,245,454.74	1,763,461.57	39° 13' 42.854 N	80° 33' 55.785 W	
11,340.0	87.31	308.26	7,458.0	2,298.5	-3,403.2	14,245,514.90	1,763,389.40	39° 13' 43.453 N	80° 33' 56.699 W	
11,435.0	86.64	307.39	7,463.0	2,356.7	-3,478.1	14,245,573.08	1,763,314.47	39° 13' 44.031 N	80° 33' 57.648 W	
11,529.0	89.23	308.56	7,466.4	2,414.5	-3,552.2	14,245,630.88	1,763,240.42	39° 13' 44.606 N	80° 33' 58.586 W	
11,623.0	89.66	308.39	7,467.3	2,473.0	-3,625.8	14,245,689.36	1,763,166.84	39° 13' 45.188 N	80° 33' 59.518 W	
11,717.0	90.13	308.29	7,467.5	2,531.3	-3,699.5	14,245,747.67	1,763,093.11	39° 13' 45.768 N	80° 34' 0.451 W	
11,811.0	89.53	308.00	7,467.7	2,589.3	-3,773.4	14,245,805.73	1,763,019.18	39° 13' 46.346 N	80° 34' 1.388 W	
11,906.0	87.99	307.22	7,469.8	2,647.3	-3,848.7	14,245,863.69	1,762,943.95	39° 13' 46.922 N	80° 34' 2.340 W	
12,000.0	88.02	307.17	7,473.1	2,704.1	-3,923.5	14,245,920.48	1,762,869.11	39° 13' 47.487 N	80° 34' 3.288 W	
12,094.0	88.99	307.08	7,475.5	2,760.8	-3,998.4	14,245,977.20	1,762,794.19	39° 13' 48.052 N	80° 34' 4.237 W	
12,188.0	88.99	305.85	7,477.2	2,816.7	-4,074.0	14,246,033.05	1,762,718.61	39° 13' 48.607 N	80° 34' 5.195 W	
12,282.0	87.18	305.82	7,480.3	2,871.7	-4,150.2	14,246,088.05	1,762,642.45	39° 13' 49.155 N	80° 34' 6.160 W	
12,377.0	87.79	307.35	7,484.5	2,928.2	-4,226.4	14,246,144.62	1,762,566.24	39° 13' 49.718 N	80° 34' 7.125 W	
12,471.0	88.56	309.00	7,487.5	2,986.3	-4,300.2	14,246,202.68	1,762,492.39	39° 13' 50.295 N	80° 34' 8.060 W	
12,565.0	88.29	308.13	7,490.1	3,044.9	-4,373.7	14,246,261.26	1,762,418.92	39° 13' 50.878 N	80° 34' 8.991 W	
12,659.0	88.16	309.24	7,493.0	3,103.6	-4,447.0	14,246,319.99	1,762,345.58	39° 13' 51.462 N	80° 34' 9.920 W	



Company:	Antero Resources	Local Co-ordinate Reference:	Well Hildred Unit 1H
Project:	Harrison County West Virginia	TVD Reference:	Patterson 347: Hildred 1H 1405 GL + 25 KB @ 1430.0usft
Site:	Cleta / Opie / Maude Pad	MD Reference:	Patterson 347: Hildred 1H 1405 GL + 25 KB @ 1430.0usft
Well:	Hildred Unit 1H	North Reference:	Grid
Wellbore:	Original Wellpath	Survey Calculation Method:	Minimum Curvature
Design:	As Drilled	Database:	Oklahoma District

Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
12,754.0	88.05	310.15	7,496.1	3,164.2	-4,520.1	14,246,380.63	1,762,272.52	39° 13' 52.065 N	80° 34' 10.845 W
12,848.0	87.79	309.69	7,499.5	3,224.5	-4,592.1	14,246,440.91	1,762,200.47	39° 13' 52.665 N	80° 34' 11.757 W
12,942.0	89.03	312.06	7,502.1	3,286.0	-4,663.2	14,246,502.40	1,762,129.43	39° 13' 53.276 N	80° 34' 12.656 W
13,036.0	87.25	309.64	7,505.2	3,347.5	-4,734.2	14,246,563.84	1,762,058.37	39° 13' 53.887 N	80° 34' 13.556 W
13,130.0	88.42	311.22	7,508.7	3,408.4	-4,805.7	14,246,624.76	1,761,986.88	39° 13' 54.492 N	80° 34' 14.461 W
13,224.0	88.99	311.53	7,510.9	3,470.5	-4,876.2	14,246,686.87	1,761,916.36	39° 13' 55.110 N	80° 34' 15.354 W
13,318.0	89.50	312.87	7,512.1	3,533.6	-4,945.9	14,246,750.01	1,761,846.73	39° 13' 55.737 N	80° 34' 16.235 W
13,412.0	88.93	309.53	7,513.4	3,595.5	-5,016.6	14,246,811.91	1,761,776.02	39° 13' 56.353 N	80° 34' 17.131 W
13,507.0	88.22	308.59	7,515.8	3,655.4	-5,090.3	14,246,871.75	1,761,702.28	39° 13' 56.948 N	80° 34' 18.064 W
13,601.0	89.70	310.37	7,517.5	3,715.1	-5,162.9	14,246,931.50	1,761,629.74	39° 13' 57.542 N	80° 34' 18.983 W
13,695.0	90.00	308.80	7,517.7	3,775.0	-5,235.3	14,246,991.40	1,761,557.30	39° 13' 58.138 N	80° 34' 19.900 W
13,789.0	89.23	306.88	7,518.3	3,832.7	-5,309.5	14,247,049.06	1,761,483.07	39° 13' 58.711 N	80° 34' 20.841 W
13,883.0	90.20	307.83	7,518.8	3,889.7	-5,384.3	14,247,106.09	1,761,408.35	39° 13' 59.279 N	80° 34' 21.787 W
13,977.0	90.77	308.45	7,518.0	3,947.8	-5,458.2	14,247,164.15	1,761,334.43	39° 13' 59.856 N	80° 34' 22.723 W
14,071.0	90.00	308.15	7,517.4	4,006.0	-5,531.9	14,247,222.40	1,761,260.66	39° 14' 0.436 N	80° 34' 23.658 W
14,166.0	91.01	308.61	7,516.5	4,065.0	-5,606.4	14,247,281.38	1,761,186.19	39° 14' 1.022 N	80° 34' 24.601 W
14,260.0	90.77	306.76	7,515.1	4,122.5	-5,680.8	14,247,338.84	1,761,111.81	39° 14' 1.594 N	80° 34' 25.543 W
14,354.0	92.01	307.67	7,512.8	4,179.3	-5,755.6	14,247,395.67	1,761,036.98	39° 14' 2.159 N	80° 34' 26.491 W
14,448.0	91.10	306.37	7,510.2	4,235.9	-5,830.6	14,247,452.24	1,760,961.96	39° 14' 2.722 N	80° 34' 27.441 W
14,542.0	91.54	306.55	7,508.1	4,291.7	-5,906.2	14,247,508.09	1,760,886.38	39° 14' 3.278 N	80° 34' 28.399 W
14,636.0	92.24	307.52	7,505.0	4,348.3	-5,981.2	14,247,564.67	1,760,811.38	39° 14' 3.841 N	80° 34' 29.349 W
14,730.0	92.55	306.08	7,501.1	4,404.6	-6,056.4	14,247,620.93	1,760,736.18	39° 14' 4.400 N	80° 34' 30.302 W
14,824.0	91.21	307.02	7,498.0	4,460.5	-6,131.9	14,247,676.88	1,760,660.71	39° 14' 4.957 N	80° 34' 31.258 W
14,918.0	91.81	309.60	7,495.5	4,518.7	-6,205.6	14,247,733.13	1,760,586.98	39° 14' 5.536 N	80° 34' 32.192 W
15,012.0	90.40	309.79	7,493.7	4,578.8	-6,277.9	14,247,795.15	1,760,514.67	39° 14' 6.133 N	80° 34' 33.107 W
15,107.0	90.27	308.99	7,493.1	4,639.1	-6,351.4	14,247,855.44	1,760,441.25	39° 14' 6.733 N	80° 34' 34.037 W
15,200.0	91.10	309.89	7,492.0	4,698.1	-6,423.2	14,247,914.51	1,760,369.43	39° 14' 7.320 N	80° 34' 34.947 W
15,267.0	91.10	309.80	7,490.7	4,741.0	-6,474.6	14,247,957.43	1,760,318.00	39° 14' 7.747 N	80° 34' 35.598 W
15,328.0	91.10	309.80	7,489.6	4,780.1	-6,521.5	14,247,996.47	1,760,271.15	39° 14' 8.135 N	80° 34' 36.192 W

Design Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
6,819.0	6,810.7	-25.0	-101.9	Sycamore
7,060.0	7,033.1	-100.4	-151.9	Middlesex
7,222.0	7,179.8	-121.9	-215.8	Burkett
7,254.0	7,207.2	-122.3	-232.4	Tully
7,386.0	7,307.4	-111.7	-317.0	Hamilton
7,489.0	7,367.7	-88.5	-396.7	Marcellus

Checked By: _____ Approved By: _____ Date: _____