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AUG 17 2015

WV GEOLOGICAL SURVEY
MORGANTOWN, WV



Antero
Paige Unit 1H
Ritchie County WV
Northing: 14270997.02
Easting: 1650698.26
As Drilled

REFERENCE INFORMATION

On-ground (NG) Reference: Well Paige Unit 1H, Grid North, 1118.0, 14270997.02
 Station (OS) Reference: Sht. 103N, 1118 + 83.24 @ 1142.0m
 Measured Depth Reference: Johnson 255, GL 1118 + 83.24 @ 1142.0m
 *Geographic North, Magnetic North

PROJECT DETAILS: Ritchie County WV
 Geographic 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

LEGEND

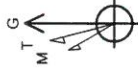
- ⊕ Paige Unit 1H, Original Wellpath, Plan 3 V0
- ⊖ As Drilled

WELL DETAILS: Paige Unit 1H

+N/S 0.0 +E/W 0.0 Northing 14270997.02 Easting 1650698.2639° 17' 58.307" N 80° 57' 48.163" W
 Ground Level: 1118.0
 Sht 103N

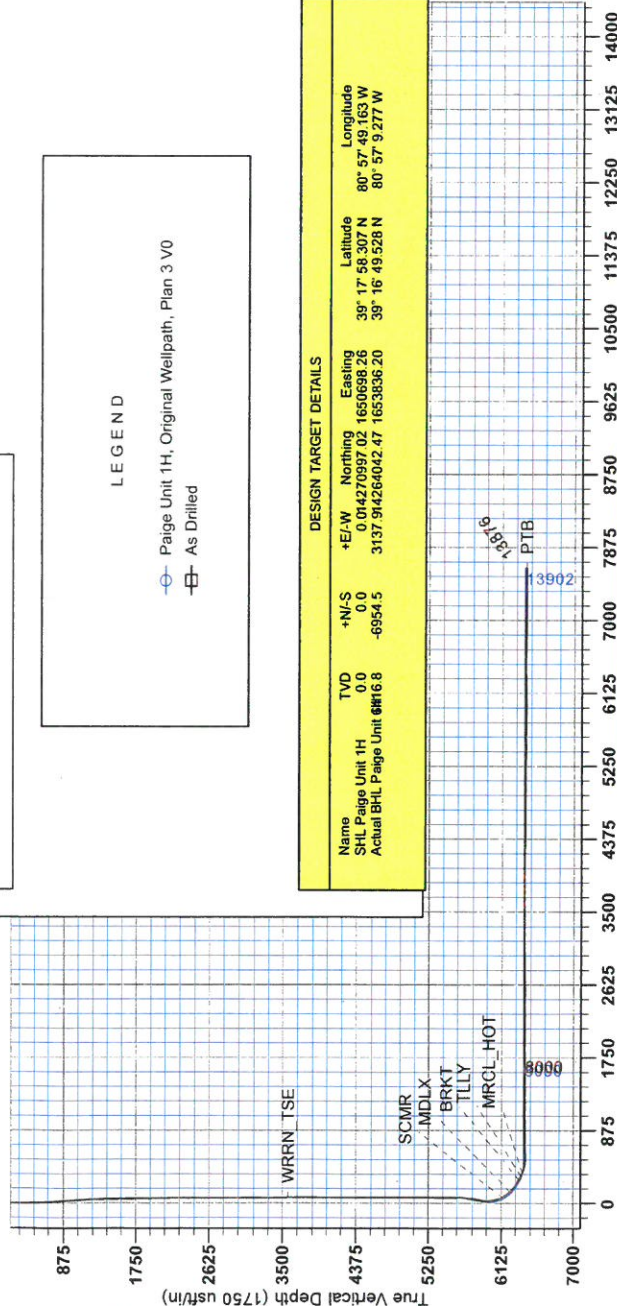
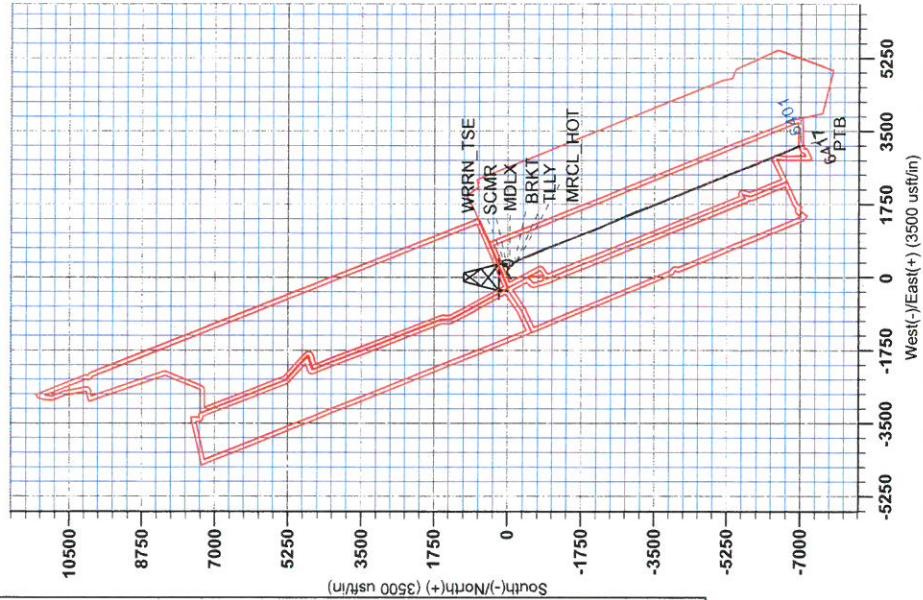


Gene Lightfoot
15:30, July 15 2015
Scientific Drilling
11220 NW 10th Street
Yukon, OK



To convert Magnetic North to Grid, Subtract 8.39°
 To convert True North to Grid, Subtract 0.02°

Magnetic North: -8.39°
 Magnetic Field Strength: 52239 GauT
 Dip Angle: 66.87°
 Date: 10/24/2014
 Model: BGGM2014



Vertical Section at 157.93° (1750 usft/in)

DESIGN TARGET DETAILS

Name	TVD	+N/S	+E/W	Northing	Easting	Latitude	Longitude
SHL Paige Unit 1H	0.0	0.0	0.0	14270997.02	1650698.26	39° 17' 58.307" N	80° 57' 48.163" W
Actual BHL Paige Unit #W16.8	16.8	-6954.5	3137.9	14264042.47	1653836.20	39° 16' 49.528" N	80° 57' 9.277" W



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MORGANTOWN, WV

Antero

Ritchie County WV

Charlene Pad: Hendershot/Paige/Eppard/Brook/Bow

Paige Unit 1H

Original Wellpath

Design: As Drilled

EOW Completion Report

15 July, 2015



AUG 17 2015



EOW Completion Report



Company: Antero	Local Co-ordinate Reference: Well Paige Unit 1H
Project: Ritchie County WV	TVD Reference: Patterson 325: GL 1118' + KB 24' @ 1142.0usft
Site: Charlene Pad: Hendershot/Paige/Eppard/Brook/E	MD Reference: Patterson 325: GL 1118' + KB 24' @ 1142.0usft
Well: Paige Unit 1H	North Reference: Grid
Wellbore: Original Wellpath	Survey Calculation Method: Minimum Curvature
Design: As Drilled	Database: Antero NE

Project	Ritchie County WV, Ritchie County WV, WV North		
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 Charlene Pad: Hendershot/Paige/Eppard/Brook/Bow, SHL Hendershot Unit 1H

Site Position:	Northing: 14,270,988.12 usft	Latitude: 39° 17' 58.219 N
From: Map	Easting: 1,650,704.41 usft	Longitude: 80° 57' 49.084 W
Position Uncertainty: 2.0 usft	Slot Radius: 13-3/16"	Grid Convergence: 0.02 °

Well Paige Unit 1H, Marcellus

Well Position	Northing: 14,270,997.02 usft	Latitude: 39° 17' 58.307 N
+N/-S 0.0 usft	Easting: 1,650,698.26 usft	Longitude: 80° 57' 49.163 W
+E/-W 0.0 usft	Wellhead Elevation: 1,142.0 usft	Ground Level: 1,118.0 usft
Position Uncertainty 2.0 usft		

Wellbore	Original Wellpath				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	BGGM2014	10/24/2014	-8.36	66.87	52,240

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	157.93

Survey Program		Date 7/15/2015			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
111.0	2,487.0	Survey #4 Def Gyro to Int (Original Wellpa	Standard Keeper 104	Standard Wireline Keeper ver 1.0.4	
2,511.0	3,034.0	Survey #5 Gyro SS (Original Wellpath)	KPR-SS	SDC Keeper single shots	
3,189.0	13,876.0	Survey #6 SDI MWD (Original Wellpath)	MWD	MWD - Standard	

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
111.0	0.25	95.12	111.0	0.0	0.2	0.1	0.23
136.0	0.18	120.96	136.0	0.0	0.3	0.2	0.47
161.0	0.21	101.73	161.0	-0.1	0.4	0.2	0.29
186.0	0.23	117.32	186.0	-0.1	0.5	0.3	0.25
211.0	0.14	55.99	211.0	-0.1	0.6	0.3	0.82
236.0	0.13	110.04	236.0	-0.1	0.6	0.3	0.49
261.0	0.22	91.88	261.0	-0.1	0.7	0.4	0.42
286.0	0.07	75.39	286.0	-0.1	0.8	0.4	0.62
311.0	0.30	84.22	311.0	-0.1	0.8	0.4	0.92

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EOW Completion Report



Company: Antero	Local Co-ordinate Reference: Well Paige Unit 1H
Project: Ritchie County WV	TVD Reference: Patterson 325: GL 1118' + KB 24' @ 1142.0usft
Site: Charlene Pad: Hendershot/Paige/Eppard/Brook/E	MD Reference: Patterson 325: GL 1118' + KB 24' @ 1142.0usft
Well: Paige 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)
336.0	0.25	93.02	336.0	-0.1	1.0	0.5	0.26
361.0	0.18	113.70	361.0	-0.1	1.0	0.5	0.41
386.0	0.46	98.81	386.0	-0.2	1.2	0.6	1.16
411.0	0.43	112.47	411.0	-0.2	1.4	0.7	0.44
436.0	0.43	104.85	436.0	-0.3	1.5	0.8	0.23
461.0	0.25	140.84	461.0	-0.3	1.7	0.9	1.08
486.0	0.28	138.85	486.0	-0.4	1.7	1.0	0.13
511.0	1.19	189.00	511.0	-0.7	1.7	1.3	4.13
536.0	2.47	197.19	536.0	-1.5	1.5	2.0	5.21
561.0	3.76	196.44	560.9	-2.8	1.2	3.0	5.16
586.0	4.15	196.50	585.9	-4.4	0.7	4.4	1.56
611.0	4.46	198.25	610.8	-6.2	0.1	5.8	1.35
636.0	4.63	197.91	635.7	-8.1	-0.5	7.3	0.69
661.0	4.60	196.70	660.7	-10.0	-1.1	8.9	0.41
686.0	4.94	197.77	685.6	-12.0	-1.7	10.5	1.41
711.0	5.15	197.82	710.5	-14.1	-2.4	12.2	0.84
736.0	5.30	197.84	735.4	-16.3	-3.1	13.9	0.60
761.0	5.44	198.83	760.3	-18.5	-3.8	15.7	0.67
786.0	5.47	198.35	785.1	-20.8	-4.6	17.5	0.22
811.0	5.55	199.88	810.0	-23.0	-5.4	19.3	0.67
836.0	5.66	199.99	834.9	-25.3	-6.2	21.1	0.44
861.0	5.52	199.26	859.8	-27.6	-7.0	23.0	0.63
886.0	5.62	199.40	884.7	-29.9	-7.8	24.8	0.40
911.0	5.57	199.74	909.6	-32.2	-8.6	26.6	0.24
936.0	5.26	200.28	934.4	-34.4	-9.5	28.3	1.26
961.0	5.21	200.07	959.3	-36.6	-10.2	30.0	0.21
986.0	5.21	200.58	984.2	-38.7	-11.0	31.7	0.19
1,011.0	5.09	200.81	1,009.1	-40.8	-11.8	33.4	0.49
1,036.0	4.93	201.40	1,034.0	-42.8	-12.6	34.9	0.67
1,061.0	4.43	201.18	1,059.0	-44.7	-13.3	36.4	2.00
1,086.0	4.34	202.24	1,083.9	-46.5	-14.1	37.8	0.48
1,111.0	4.23	201.26	1,108.8	-48.2	-14.7	39.2	0.53
1,136.0	4.04	201.10	1,133.7	-49.9	-15.4	40.5	0.76
1,161.0	3.77	200.91	1,158.7	-51.5	-16.0	41.7	1.08
1,186.0	3.73	200.94	1,183.6	-53.0	-16.6	42.9	0.16
1,211.0	3.56	201.33	1,208.6	-54.5	-17.2	44.1	0.69
1,236.0	3.39	201.86	1,233.5	-55.9	-17.7	45.2	0.69
1,261.0	3.15	201.63	1,258.5	-57.2	-18.3	46.2	0.96
1,286.0	3.01	202.86	1,283.5	-58.5	-18.8	47.2	0.62
1,311.0	2.90	203.35	1,308.4	-59.7	-19.3	48.1	0.45
1,336.0	2.73	203.93	1,333.4	-60.8	-19.8	48.9	0.69
1,361.0	2.56	205.06	1,358.4	-61.9	-20.2	49.7	0.71
1,386.0	2.41	206.32	1,383.3	-62.8	-20.7	50.4	0.64
1,411.0	2.33	206.95	1,408.3	-63.8	-21.2	51.1	0.34
1,436.0	2.12	208.54	1,433.3	-64.6	-21.6	51.8	0.88

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EOW Completion Report



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Project: Ritchie County WV
Site: Charlene Pad: Hendershot/Paige/Eppard/Brook/E
Well: Paige Unit 1H
Wellbore: Original Wellpath
Design: As Drilled

Local Co-ordinate Reference: Well Paige Unit 1H
TVD Reference: Patterson 325: GL 1118' + KB 24' @ 1142.0usft
MD Reference: Patterson 325: GL 1118' + KB 24' @ 1142.0usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: Antero NE

Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)
1,461.0	1.87	207.62	1,458.3	-65.4	-22.0	52.3	1.01
1,486.0	1.75	209.52	1,483.3	-66.1	-22.4	52.8	0.54
1,511.0	1.71	207.40	1,508.3	-66.7	-22.8	53.3	0.30
1,536.0	1.66	210.94	1,533.3	-67.4	-23.1	53.8	0.46
1,561.0	1.56	206.41	1,558.2	-68.0	-23.5	54.2	0.65
1,586.0	1.54	213.53	1,583.2	-68.6	-23.8	54.6	0.77
1,611.0	1.49	209.71	1,608.2	-69.1	-24.1	55.0	0.45
1,636.0	1.42	208.99	1,633.2	-69.7	-24.5	55.4	0.29
1,661.0	1.44	208.04	1,658.2	-70.2	-24.8	55.8	0.12
1,686.0	1.39	208.85	1,683.2	-70.8	-25.0	56.2	0.22
1,711.0	1.38	206.20	1,708.2	-71.3	-25.3	56.6	0.26
1,736.0	1.28	207.32	1,733.2	-71.8	-25.6	57.0	0.41
1,761.0	1.08	203.53	1,758.2	-72.3	-25.8	57.3	0.86
1,786.0	0.96	205.19	1,783.2	-72.7	-26.0	57.6	0.49
1,811.0	0.85	202.58	1,808.2	-73.1	-26.2	57.9	0.47
1,836.0	0.83	203.83	1,833.2	-73.4	-26.3	58.1	0.11
1,861.0	0.72	209.21	1,858.2	-73.7	-26.4	58.4	0.53
1,886.0	0.74	206.66	1,883.2	-74.0	-26.6	58.6	0.15
1,911.0	0.70	203.27	1,908.2	-74.3	-26.7	58.8	0.23
1,936.0	0.62	199.37	1,933.2	-74.5	-26.8	59.0	0.37
1,961.0	0.63	205.12	1,958.2	-74.8	-26.9	59.2	0.25
1,986.0	0.67	206.39	1,983.2	-75.1	-27.1	59.4	0.17
2,011.0	0.63	212.32	2,008.2	-75.3	-27.2	59.6	0.31
2,036.0	0.55	209.93	2,033.2	-75.5	-27.3	59.7	0.33
2,061.0	0.61	203.15	2,058.2	-75.7	-27.4	59.9	0.36
2,086.0	0.54	205.47	2,083.2	-76.0	-27.5	60.1	0.30
2,111.0	0.59	211.51	2,108.2	-76.2	-27.7	60.2	0.31
2,136.0	0.48	196.22	2,133.2	-76.4	-27.8	60.4	0.72
2,161.0	0.34	218.32	2,158.2	-76.6	-27.8	60.5	0.84
2,186.0	0.38	210.30	2,183.2	-76.7	-27.9	60.6	0.26
2,211.0	0.34	195.07	2,208.2	-76.8	-28.0	60.7	0.41
2,236.0	0.27	200.28	2,233.2	-77.0	-28.0	60.8	0.30
2,261.0	0.29	220.67	2,258.2	-77.1	-28.1	60.9	0.40
2,286.0	0.27	197.25	2,283.2	-77.2	-28.1	60.9	0.46
2,311.0	0.23	224.22	2,308.2	-77.3	-28.2	61.0	0.49
2,336.0	0.19	189.92	2,333.2	-77.3	-28.2	61.1	0.52
2,361.0	0.25	200.99	2,358.2	-77.4	-28.3	61.1	0.29
2,386.0	0.19	214.76	2,383.2	-77.5	-28.3	61.2	0.32
2,411.0	0.33	207.14	2,408.2	-77.6	-28.4	61.3	0.58
2,436.0	0.26	188.09	2,433.2	-77.7	-28.4	61.4	0.48
2,461.0	0.36	186.66	2,458.2	-77.9	-28.4	61.5	0.40
2,486.0	0.40	192.43	2,483.2	-78.0	-28.5	61.6	0.22
2,487.0	0.40	192.65	2,484.2	-78.0	-28.5	61.6	0.15
2,511.0	0.12	132.33	2,508.2	-78.1	-28.5	61.7	1.48

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EOW Completion Report



Company: Antero
Project: Ritchie County WV
Site: Charlene Pad: Hendershot/Paige/Eppard/Brook/E
Well: Paige Unit 1H
Wellbore: Original Wellpath
Design: As Drilled

Local Co-ordinate Reference: Well Paige Unit 1H
TV D Reference: Patterson 325: GL 1118' + KB 24' @ 1142.0usft
MD Reference: Patterson 325: GL 1118' + KB 24' @ 1142.0usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: Antero NE

Survey

Table with 8 columns: MD (usft), Inc (°), Azi (azimuth) (°), TVD (usft), N/S (usft), E/W (usft), V. Sec (usft), DLeg (°/100usft). Rows include data points from 2,561.0 to 5,752.0 MD, with a section labeled WRRN_TSE starting at 3,586.0 MD.

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WV GEOLOGICAL SURVEY
MORGANTOWN, WV

EOW Completion Report



Company:	Antero	Local Co-ordinate Reference:	Well Paige Unit 1H
Project:	Ritchie County WV	TVD Reference:	Patterson 325: GL 1118' + KB 24' @ 1142.0usft
Site:	Charlene Pad: Hendershot/Paige/Eppard/Brook/E	MD Reference:	Patterson 325: GL 1118' + KB 24' @ 1142.0usft
Well:	Paige 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)
5,783.0	20.45	45.90	5,775.3	-61.6	-1.3	56.6	8.33
5,814.0	23.96	45.14	5,804.0	-53.4	7.1	52.1	11.36
5,846.0	26.70	44.23	5,832.9	-43.6	16.7	46.7	8.65
5,877.0	29.75	42.86	5,860.2	-33.0	26.8	40.7	10.06
5,908.0	30.66	49.22	5,887.0	-22.2	38.0	34.9	10.73
5,940.0	30.55	56.45	5,914.6	-12.4	51.0	30.6	11.50
5,971.0	30.75	64.32	5,941.2	-4.6	64.7	28.5	12.95
6,002.0	30.92	72.38	5,967.9	1.3	79.4	28.7	13.33
6,033.0	31.16	79.17	5,994.4	5.2	94.9	30.8	11.32
6,065.0	31.31	87.47	6,021.8	7.1	111.4	35.2	13.45
6,096.0	31.05	90.90	6,048.3	7.3	127.4	41.1	5.79
6,127.0	31.13	95.24	6,074.9	6.5	143.4	47.9	7.23
6,159.0	33.11	102.61	6,102.0	3.8	160.2	56.6	13.71
6,190.0	35.28	108.74	6,127.6	-0.9	176.9	67.3	13.13
6,204.0	36.15	111.34	6,139.0	-3.7	184.6	72.8	12.49
SCMR							
6,221.0	37.27	114.36	6,152.6	-7.7	193.9	80.0	12.49
6,253.0	39.37	120.59	6,177.8	-16.8	211.5	95.1	13.73
6,284.0	40.94	127.33	6,201.5	-28.0	228.1	111.6	14.90
6,315.0	43.08	131.72	6,224.5	-41.2	244.0	129.9	11.72
6,330.0	44.66	132.71	6,235.3	-48.2	251.7	139.2	11.50
MDLX							
6,347.0	46.47	133.76	6,247.2	-56.5	260.6	150.3	11.50
6,378.0	50.44	135.68	6,267.8	-72.8	277.1	171.6	13.62
6,409.0	54.47	137.13	6,286.7	-90.6	294.0	194.5	13.52
6,440.0	58.56	139.61	6,303.8	-110.0	311.1	218.8	14.78
6,472.0	60.12	142.17	6,320.1	-131.3	328.5	245.1	8.43
6,503.0	59.63	144.82	6,335.6	-152.9	344.5	271.1	7.56
6,516.0	59.94	145.89	6,342.2	-162.1	350.8	282.1	7.52
BRKT							
6,534.0	60.38	147.37	6,351.1	-175.1	359.4	297.4	7.52
6,566.0	63.73	150.65	6,366.1	-199.4	374.0	325.3	13.84
6,567.0	63.80	150.69	6,366.6	-200.2	374.4	326.2	8.27
TLLY							
6,597.0	66.04	151.88	6,379.3	-224.0	387.5	353.2	8.27
6,607.0	67.41	152.22	6,383.2	-232.1	391.8	362.3	14.01
MRCL_HOT							
6,628.0	70.28	152.90	6,390.8	-249.5	400.8	381.8	14.01
6,660.0	74.65	153.67	6,400.5	-276.7	414.5	412.2	13.85
6,691.0	78.41	154.39	6,407.7	-303.8	427.7	442.3	12.34
6,722.0	83.21	154.97	6,412.6	-331.5	440.8	472.8	15.59
6,753.0	88.25	155.14	6,414.9	-359.5	453.8	503.7	16.27
6,809.0	90.94	156.19	6,415.3	-410.5	476.9	559.6	5.16
6,847.0	90.94	155.56	6,414.7	-445.2	492.4	597.6	1.66
6,942.0	90.87	155.38	6,413.2	-531.6	531.9	692.5	0.20

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WV GEOLOGICAL SURVEY
MORGANTOWN, WV

EOW Completion Report



Company: Antero
Project: Ritchie County WV
Site: Charlene Pad: Hendershot/Paige/Eppard/Brook/E
Well: Paige Unit 1H
Wellbore: Original Wellpath
Design: As Drilled

Local Co-ordinate Reference: Well Paige Unit 1H
TVD Reference: Patterson 325: GL 1118' + KB 24' @ 1142.0usft
MD Reference: Patterson 325: GL 1118' + KB 24' @ 1142.0usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: Antero NE

Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)
7,036.0	90.00	156.50	6,412.5	-617.4	570.2	786.4	1.51
7,130.0	91.24	157.07	6,411.5	-703.8	607.2	880.4	1.45
7,224.0	90.30	156.60	6,410.2	-790.2	644.2	974.4	1.12
7,318.0	90.07	159.49	6,409.9	-877.4	679.3	1,068.4	3.08
7,413.0	89.33	159.45	6,410.4	-966.4	712.7	1,163.3	0.78
7,507.0	89.16	159.36	6,411.6	-1,054.4	745.7	1,257.3	0.20
7,601.0	90.40	159.14	6,412.0	-1,142.3	779.0	1,351.3	1.34
7,696.0	90.34	158.77	6,411.4	-1,230.9	813.1	1,446.3	0.39
7,790.0	90.64	159.76	6,410.6	-1,318.8	846.4	1,540.2	1.10
7,884.0	90.50	160.18	6,409.7	-1,407.1	878.6	1,634.2	0.47
7,979.0	90.10	159.75	6,409.2	-1,496.4	911.2	1,729.1	0.62
8,073.0	89.83	159.00	6,409.2	-1,584.4	944.3	1,823.1	0.85
8,167.0	89.73	158.94	6,409.6	-1,672.1	978.0	1,917.0	0.12
8,262.0	89.80	159.31	6,410.0	-1,760.9	1,011.8	2,012.0	0.40
8,356.0	90.03	159.80	6,410.1	-1,848.9	1,044.7	2,106.0	0.58
8,451.0	90.81	158.54	6,409.4	-1,937.7	1,078.5	2,201.0	1.56
8,544.0	90.94	159.45	6,408.0	-2,024.5	1,111.8	2,293.9	0.99
8,637.0	90.10	156.77	6,407.1	-2,110.8	1,146.5	2,386.9	3.02
8,731.0	89.56	155.30	6,407.4	-2,196.7	1,184.6	2,480.9	1.67
8,825.0	89.63	155.29	6,408.1	-2,282.1	1,223.9	2,574.8	0.08
8,919.0	90.64	155.84	6,407.9	-2,367.7	1,262.8	2,668.7	1.22
9,013.0	91.27	155.52	6,406.3	-2,453.3	1,301.5	2,762.6	0.75
9,107.0	90.60	156.21	6,404.8	-2,539.1	1,339.9	2,856.5	1.02
9,201.0	90.44	156.35	6,403.9	-2,625.2	1,377.8	2,950.5	0.23
9,295.0	89.87	154.57	6,403.7	-2,710.7	1,416.8	3,044.4	1.99
9,389.0	90.81	155.31	6,403.1	-2,795.8	1,456.6	3,138.3	1.27
9,483.0	89.43	155.97	6,402.9	-2,881.4	1,495.4	3,232.2	1.63
9,574.0	91.61	159.28	6,402.1	-2,965.6	1,530.0	3,323.2	4.36
9,665.0	91.34	158.75	6,399.7	-3,050.5	1,562.6	3,414.1	0.65
9,756.0	90.74	159.38	6,398.1	-3,135.5	1,595.1	3,505.1	0.96
9,847.0	90.44	159.24	6,397.1	-3,220.6	1,627.3	3,596.0	0.36
9,939.0	89.90	159.20	6,396.9	-3,306.6	1,659.9	3,688.0	0.59
10,031.0	89.80	159.60	6,397.1	-3,392.7	1,692.3	3,780.0	0.45
10,121.0	89.30	159.30	6,397.8	-3,477.0	1,723.9	3,870.0	0.65
10,212.0	89.53	158.09	6,398.7	-3,561.8	1,756.9	3,960.9	1.35
10,303.0	89.33	157.52	6,399.7	-3,646.0	1,791.3	4,051.9	0.66
10,394.0	88.99	157.81	6,401.0	-3,730.2	1,825.9	4,142.9	0.49
10,484.0	88.62	157.78	6,402.9	-3,813.5	1,859.9	4,232.9	0.41
10,574.0	88.72	157.64	6,405.0	-3,896.8	1,894.0	4,322.9	0.19
10,668.0	90.04	159.49	6,406.0	-3,984.2	1,928.3	4,416.9	2.42
10,762.0	89.96	158.70	6,406.0	-4,072.1	1,961.9	4,510.8	0.84
10,856.0	89.96	157.03	6,406.0	-4,159.1	1,997.3	4,604.8	1.78
10,950.0	90.13	156.85	6,406.0	-4,245.6	2,034.1	4,698.8	0.26
11,044.0	90.04	157.12	6,405.8	-4,332.1	2,070.9	4,792.8	0.30

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WV GEOLOGICAL SURVEY
MORGANTOWN, WV

EOW Completion Report



Company: Antero
Project: Ritchie County WV
Site: Charlene Pad: Hendershot/Paige/Eppard/Brook/E
Well: Paige Unit 1H
Wellbore: Original Wellpath
Design: As Drilled

Local Co-ordinate Reference: Well Paige Unit 1H
TVD Reference: Patterson 325: GL 1118' + KB 24' @ 1142.0usft
MD Reference: Patterson 325: GL 1118' + KB 24' @ 1142.0usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: Antero NE

Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)
11,138.0	89.43	155.97	6,406.3	-4,418.4	2,108.3	4,886.8	1.38
11,232.0	89.16	158.35	6,407.4	-4,505.0	2,144.8	4,980.8	2.55
11,326.0	90.92	157.82	6,407.4	-4,592.2	2,179.9	5,074.8	1.96
11,420.0	89.52	160.98	6,407.0	-4,680.2	2,212.9	5,168.7	3.68
11,514.0	88.20	158.79	6,408.9	-4,768.4	2,245.2	5,262.6	2.72
11,608.0	88.55	158.61	6,411.5	-4,855.9	2,279.4	5,356.6	0.42
11,701.0	90.48	158.87	6,412.3	-4,942.6	2,313.1	5,449.6	2.09
11,796.0	90.22	158.61	6,411.7	-5,031.1	2,347.5	5,544.5	0.39
11,890.0	89.78	157.73	6,411.7	-5,118.4	2,382.5	5,638.5	1.05
11,983.0	89.43	157.03	6,412.4	-5,204.2	2,418.3	5,731.5	0.84
12,078.0	89.34	157.56	6,413.4	-5,291.9	2,454.9	5,826.5	0.57
12,172.0	90.22	158.70	6,413.8	-5,379.1	2,489.9	5,920.5	1.53
12,266.0	90.57	159.58	6,413.1	-5,466.9	2,523.4	6,014.5	1.01
12,360.0	90.57	158.79	6,412.2	-5,554.8	2,556.8	6,108.5	0.84
12,454.0	90.40	158.61	6,411.4	-5,642.4	2,591.0	6,202.5	0.26
12,548.0	90.66	157.56	6,410.5	-5,729.6	2,626.0	6,296.5	1.15
12,641.0	91.54	157.82	6,408.7	-5,815.6	2,661.3	6,389.4	0.99
12,735.0	89.16	157.56	6,408.1	-5,902.6	2,697.0	6,483.4	2.55
12,829.0	89.34	157.91	6,409.4	-5,989.5	2,732.6	6,577.4	0.42
12,923.0	89.34	157.38	6,410.5	-6,076.5	2,768.4	6,671.4	0.56
13,017.0	88.72	156.59	6,412.1	-6,163.0	2,805.1	6,765.4	1.07
13,111.0	89.60	158.43	6,413.4	-6,249.8	2,841.1	6,859.4	2.17
13,205.0	90.13	159.93	6,413.7	-6,337.7	2,874.5	6,953.3	1.69
13,299.0	90.31	159.40	6,413.3	-6,425.8	2,907.1	7,047.3	0.60
13,393.0	89.34	156.85	6,413.6	-6,513.0	2,942.2	7,141.3	2.90
13,488.0	89.25	156.06	6,414.7	-6,600.1	2,980.1	7,236.2	0.84
13,582.0	89.08	155.27	6,416.1	-6,685.8	3,018.8	7,330.2	0.86
13,676.0	90.13	156.32	6,416.8	-6,771.5	3,057.4	7,424.1	1.58
13,770.0	89.96	156.41	6,416.7	-6,857.6	3,095.1	7,518.1	0.20
13,821.0	89.96	156.06	6,416.7	-6,904.3	3,115.6	7,569.0	0.69
13,876.0	89.96	156.06	6,416.8	-6,954.6	3,137.9	7,624.0	0.00

PTB

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WV GEOLOGICAL SURVEY
MORGANTOWN, WV

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North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: Antero NE

Design Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
3,574.0	3,571.1	-82.5	-29.1	WRRN_TSE
6,204.0	6,139.0	-3.7	184.6	SCMR
6,330.0	6,235.3	-48.2	251.7	MDLX
6,516.0	6,342.2	-162.1	350.8	BRKT
6,567.0	6,366.6	-200.2	374.4	TLTY
6,607.0	6,383.2	-232.1	391.8	MRCL_HOT
13,876.0	6,416.8	-6,954.6	3,137.9	PTB

Checked By: _____ Approved By: _____ Date: _____