



McMillan Unit 2H
Doddridge County WV
Northing: 14294298.87
Easting: 1719164.80
As Drilled



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WELL DETAILS: McMillan Unit 2H

Ground Level:	1115.0	Latitude	39° 21' 47.527" N	Longitude	80° 43' 16.990" W
+N/S	+E/W	Northing	14294298.87	1719164.80	
0.0	0.0				

SITE DETAILS: Maikwa/McMillan/Hoskinson Pad

Site Center:	Maikwa Unit 2H
Maikwa / McMillan / Hoskinson	
Site Center Northing:	14294295.71
Easting:	1719154.86
Positional Uncertainty:	2.8
Convergence:	0.18
Local North:	Grid

PROJECT DETAILS: Doddridge County WV

Geodetic System: Universal Transverse Mercator (US Survey Feet)
 Datum: NAD 1983 (NAD80 CONUS)
 Ellipsoid: Clarke 1866 (NAD80 CONUS)
 Zone: Zone 17N (84 W to 78 W)
 System Datum: Mean Sea Level

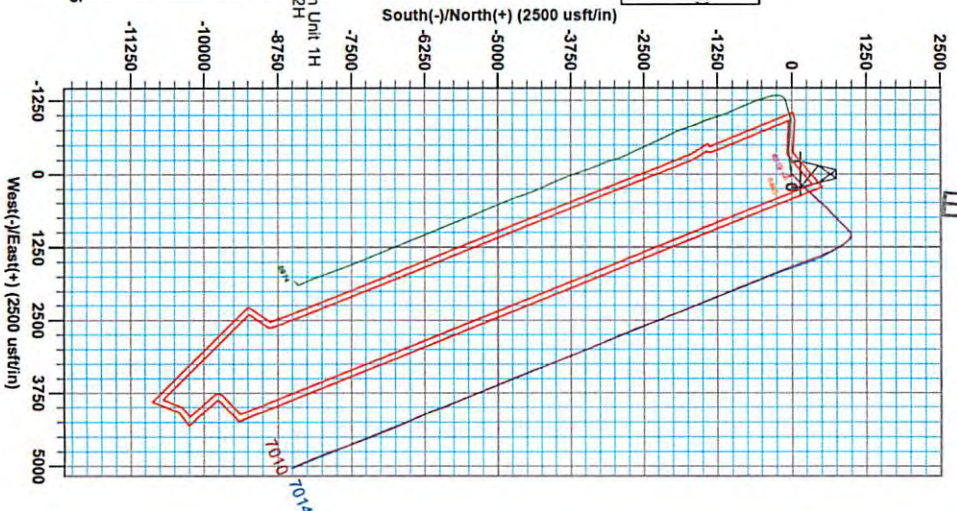
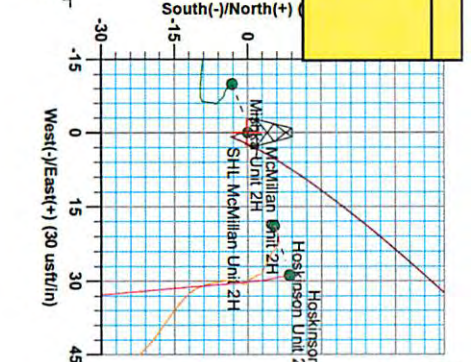
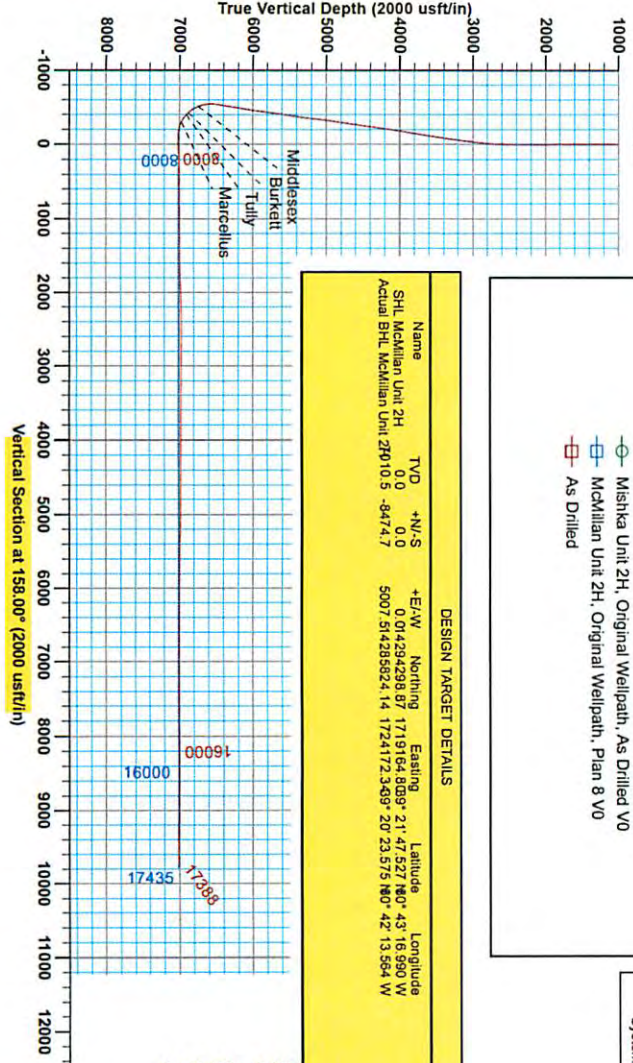
Genie Lightfoot
 13.45, May 22 2014
 Scientific Drilling
 421 South Eagle Lane
 Oklahoma City, OK 73128

LEGEND

- Hoskinson Unit 2H, Original Wellpath, As Drilled VO
- ✕ Hoskinson Unit 1H, Original Wellpath, As Drilled VO
- Mishka Unit 2H, Original Wellpath, As Drilled VO
- McMillan Unit 2H, Original Wellpath, Plan 8 VO
- As Drilled

DESIGN TARGET DETAILS

Name	TVD	+N/S	+E/W	Northing	Easting	Latitude	Longitude
SHL McMillan Unit 2H	0.0	0.0	0.0	14294298.87	1719164.80	39° 21' 47.527" N	80° 43' 16.990" W
Actual SHL McMillan Unit 2H	0.0	-8474.7	5007.514285824	14	1724172.3549	20° 23' 57.5" N	80° 42' 13.564" W



Frontier 22: 1115' GL, ±25' RKB @ 1140' Oart
 Gr: 1115.0'

Azimuths to Grid North
 True North: -0.19"
 Magnetic North: -3.70"
 Strength: 52351.45nT
 Dip Angle: 66.08°
 Date: 2/27/2014
 Model: GRT2010

08/14/2015



Antero Resources

Doddridge County WV
Mishka/McMillan/Hoskinson Pad
McMillan Unit 2H
Original Wellpath

Design: As Drilled

EOW Completion Report

22 May, 2014

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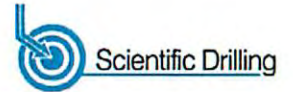
JUL 13 2015

WV Department of
Environmental Protection



Scientific Drilling

08//14/2015



Company:	Antero Resources	Local Co-ordinate Reference:	Well McMillan Unit 2H
Project:	Doddridge County WV	TVD Reference:	Frontier 22: 1115' GL +25' RKB @ 1140.0usft
Site:	Mishka/McMillan/Hoskinson Pad	MD Reference:	Frontier 22: 1115' GL +25' RKB @ 1140.0usft
Well:	McMillan Unit 2H	North Reference:	Grid
Wellbore:	Original Wellpath	Survey Calculation Method:	Minimum Curvature
Design:	As Drilled	Database:	Oklahoma District

Project	Doddridge County WV, McClellan District		
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	Mishka/McMillan/Hoskinson Pad, Site Center: Mishka Unit 2H				
Site Position:	Northing:	14,294,295.71 usft	Latitude:	39° 21' 47.496 N	
From:	Easting:	1,719,154.86 usft	Longitude:	80° 43' 17.117 W	
Position Uncertainty:	2.8 usft	Slot Radius:	13-3/16"	Grid Convergence:	0.18 °

Well	McMillan Unit 2H, Marcellus					
Well Position	+N/-S	0.0 usft	Northing:	14,294,298.87 usft	Latitude:	39° 21' 47.527 N
	+E/-W	0.0 usft	Easting:	1,719,164.80 usft	Longitude:	80° 43' 16.990 W
Position Uncertainty	2.8 usft	Wellhead Elevation:	1,140.0 usft	Ground Level:	1,115.0 usft	

Wellbore	Original Wellpath				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	2/27/2014	-8.52	66.89	52,361

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	158.00	

Survey Program	Date 5/22/2014			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
112.0	5,788.0	Survey #4 Final Gyro (Original Wellpath)	SDI Standard Keeper	Scientific Drilling Intl. Standard Wireline Keeper
5,800.0	17,388.0	Survey #5 MWD (Original Wellpath)	SDI MWD	Scientific Drilling Intl. 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
112.0	0.31	323.81	112.0	0.2	-0.2	-0.3	0.28
212.0	0.11	352.67	212.0	0.6	-0.4	-0.1	0.22
312.0	0.04	218.95	312.0	0.6	-0.4	-0.7	0.14
412.0	0.16	193.28	412.0	0.5	-0.4	-0.6	0.13
512.0	0.18	167.58	512.0	0.2	-0.4	-0.3	0.08
612.0	0.23	159.55	612.0	-0.2	-0.3	0.0	0.06
712.0	0.28	152.97	712.0	-0.6	-0.2	0.5	0.06
812.0	0.21	127.52	812.0	-0.9	-0.1	0.9	0.13
912.0	0.19	185.86	912.0	-1.2	0.2	1.2	0.20
1,012.0	0.32	176.64	1,012.0	-1.6	0.2	1.6	0.14

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EOW Completion Report



Company:	Antero Resources	Local Co-ordinate Reference:	Well McMillan Unit 2H
Project:	Doddridge County WV	TVD Reference:	Frontier 22: 1115' GL +25' RKB @ 1140.0usft
Site:	Mishka/McMillan/Hoskinson Pad	MD Reference:	Frontier 22: 1115' GL +25' RKB @ 1140.0usft
Well:	McMillan Unit 2H	North Reference:	Grid
Wellbore:	Original Wellpath	Survey Calculation Method:	Minimum Curvature
Design:	As Drilled	Database:	Oklahoma District

Survey									
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)		
1,112.0	0.32	150.23	1,112.0	-2.1	0.4	2.1			0.15
1,212.0	0.28	136.01	1,212.0	-2.6	0.7	2.6			0.08
1,312.0	0.09	72.12	1,312.0	-2.7	0.9	2.9			0.25
1,412.0	0.07	205.65	1,412.0	-2.7	1.0	2.9			0.15
1,512.0	0.08	235.31	1,512.0	-2.8	0.9	3.0			0.04
1,612.0	0.15	173.89	1,612.0	-3.0	0.9	3.1			0.13
1,712.0	0.10	181.96	1,712.0	-3.2	0.9	3.3			0.05
1,812.0	0.13	155.67	1,812.0	-3.4	0.9	3.5			0.06
1,912.0	0.01	282.82	1,912.0	-3.5	1.0	3.6			0.14
2,012.0	0.06	317.19	2,012.0	-3.5	0.9	3.6			0.05
2,112.0	0.18	355.84	2,112.0	-3.3	0.9	3.4			0.14
2,212.0	0.07	244.61	2,212.0	-3.2	0.8	3.2			0.22
2,312.0	0.07	192.47	2,312.0	-3.2	0.7	3.3			0.06
2,412.0	0.15	70.46	2,412.0	-3.3	0.8	3.3			0.20
2,512.0	0.08	349.42	2,512.0	-3.1	0.9	3.3			0.16
2,612.0	3.88	24.43	2,611.9	0.0	2.3	0.9			3.81
2,712.0	6.72	32.86	2,711.5	8.0	6.9	-4.8			2.94
2,812.0	10.06	37.49	2,810.4	19.9	15.4	-12.6			3.40
2,912.0	13.34	41.22	2,908.3	35.5	28.3	-22.3			3.36
3,012.0	16.40	44.73	3,004.9	54.2	45.9	-33.0			3.19
3,112.0	19.30	48.99	3,100.1	75.1	68.3	-44.0			3.18
3,212.0	22.27	49.09	3,193.6	98.3	95.1	-55.5			2.97
3,312.0	24.32	49.53	3,285.4	124.1	125.1	-68.2			2.06
3,412.0	24.93	49.31	3,376.4	151.2	156.7	-81.5			0.62
3,512.0	24.86	48.38	3,467.1	178.9	188.4	-95.3			0.40
3,612.0	22.53	46.87	3,558.6	206.0	218.1	-109.3			2.41
3,712.0	21.20	46.24	3,651.4	231.6	245.1	-122.9			1.35
3,812.0	21.02	44.59	3,744.7	256.8	270.8	-136.7			0.62
3,912.0	20.70	43.65	3,838.2	282.4	295.6	-151.1			0.46
4,012.0	20.60	43.10	3,931.7	308.0	319.8	-165.8			0.22
4,112.0	20.20	41.85	4,025.5	333.7	343.3	-180.8			0.59
4,212.0	20.38	41.64	4,119.3	359.6	366.4	-196.2			0.19
4,312.0	20.14	44.24	4,213.1	385.0	390.0	-210.8			0.93
4,412.0	19.56	46.16	4,307.1	408.9	414.1	-224.0			0.87
4,512.0	19.40	45.40	4,401.4	432.1	438.0	-236.6			0.30
4,612.0	19.66	44.89	4,495.7	455.7	461.7	-249.6			0.31
4,712.0	18.73	43.31	4,590.1	479.3	484.6	-262.8			1.07
4,812.0	18.63	42.55	4,684.8	502.8	506.4	-276.5			0.26
4,912.0	18.39	42.48	4,779.7	526.2	527.8	-290.1			0.24
5,012.0	18.57	41.74	4,874.5	549.7	549.1	-304.0			0.30
5,112.0	19.20	42.71	4,969.1	573.7	570.9	-318.0			0.70
5,212.0	18.06	46.52	5,063.9	596.4	593.3	-330.7			1.67
5,312.0	17.64	50.80	5,159.1	616.7	616.3	-340.9			1.38
5,412.0	19.84	47.79	5,253.8	637.6	640.6	-351.2			2.40

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Company:	Antero Resources	Local Co-ordinate Reference:	Well McMillan Unit 2H
Project:	Doddridge County WV	TVD Reference:	Frontier 22: 1115' GL +25' RKB @ 1140.0usft
Site:	Mishka/McMillan/Hoskinson Pad	MD Reference:	Frontier 22: 1115' GL +25' RKB @ 1140.0usft
Well:	McMillan Unit 2H	North Reference:	Grid
Wellbore:	Original Wellpath	Survey Calculation Method:	Minimum Curvature
Design:	As Drilled	Database:	Oklahoma District

Survey								
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	
5,512.0	21.18	46.51	5,347.4	661.5	666.2	-363.7	1.41	
5,612.0	22.07	45.86	5,440.4	687.0	692.8	-377.4	0.92	
5,712.0	22.31	45.50	5,533.0	713.4	719.9	-391.8	0.28	
5,788.0	21.82	44.91	5,603.4	733.5	740.1	-402.8	0.71	
5,850.0	21.13	41.45	5,661.1	750.0	755.6	-412.3	2.33	
5,947.0	21.21	48.91	5,751.6	774.7	780.4	-425.9	2.78	
6,043.0	19.83	52.10	5,841.5	796.1	806.4	-436.0	1.85	
6,139.0	20.54	46.90	5,931.6	817.6	831.5	-446.6	2.01	
6,235.0	22.25	40.85	6,021.0	842.9	855.7	-460.9	2.91	
6,331.0	22.98	42.79	6,109.6	870.4	880.3	-477.2	1.09	
6,427.0	22.94	47.27	6,198.0	896.8	906.8	-491.8	1.82	
6,523.0	22.91	47.84	6,286.4	922.0	934.4	-504.9	0.23	
6,620.0	22.63	44.32	6,375.9	948.1	961.4	-518.9	1.43	
6,703.0	22.67	44.78	6,452.5	970.8	983.9	-531.6	0.22	
6,748.0	22.23	47.01	6,494.1	982.8	996.2	-538.1	2.13	
6,780.0	21.00	54.88	6,523.8	990.2	1,005.3	-541.5	9.83	
6,812.0	20.28	64.11	6,553.8	996.0	1,015.0	-543.2	10.40	
6,844.0	20.12	73.77	6,583.8	999.9	1,025.3	-543.0	10.42	
6,877.0	20.07	85.45	6,614.8	1,002.0	1,036.4	-540.8	12.14	
6,909.0	20.62	94.93	6,644.8	1,001.9	1,047.5	-536.6	10.43	
6,941.0	21.98	102.75	6,674.7	1,000.1	1,058.9	-530.6	9.83	
6,972.0	23.94	109.43	6,703.2	996.7	1,070.5	-523.1	10.51	
7,004.0	26.72	115.74	6,732.1	991.4	1,083.1	-513.5	12.10	
7,017.0	27.56	118.30	6,743.7	988.7	1,088.4	-509.0	11.04	
Middlesex								
7,037.0	28.93	121.95	6,761.3	984.0	1,096.6	-501.5	11.04	
7,069.0	31.79	126.95	6,788.9	974.8	1,109.9	-488.1	11.92	
7,101.0	35.02	130.93	6,815.6	963.7	1,123.6	-472.7	12.19	
7,133.0	38.39	134.14	6,841.3	950.8	1,137.7	-455.4	12.12	
7,166.0	41.99	137.05	6,866.5	935.6	1,152.5	-435.7	12.30	
7,184.0	44.16	138.45	6,879.7	926.5	1,160.8	-424.2	13.16	
Burkett								
7,197.0	45.73	139.40	6,888.9	919.6	1,166.8	-415.5	13.16	
7,224.0	49.06	141.34	6,907.1	904.2	1,179.5	-398.6	13.42	
Tully								
7,229.0	49.68	141.68	6,910.4	901.3	1,181.9	-392.9	13.42	
7,261.0	53.38	143.79	6,930.3	881.3	1,197.0	-368.7	12.66	
7,293.0	57.27	145.74	6,948.5	859.8	1,212.2	-343.1	13.15	
7,326.0	61.36	147.40	6,965.3	836.2	1,227.8	-315.3	13.13	
7,342.0	63.65	147.94	6,972.7	824.2	1,234.4	-291.4	14.64	
Marcellus								
7,358.0	65.95	148.45	6,979.5	811.9	1,243.0	-287.1	14.64	
7,390.0	70.38	149.60	6,991.4	786.4	1,258.3	-257.8	14.24	
7,422.0	75.05	151.00	7,000.9	759.9	1,273.4	-227.5	15.18	
7,454.0	79.44	152.36	7,008.0	732.4	1,288.2	-196.5	14.33	

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Well:	McMillan Unit 2H	North Reference:	Grid
Wellbore:	Original Wellpath	Survey Calculation Method:	Minimum Curvature
Design:	As Drilled	Database:	Oklahoma District

Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)
7,474.0	82.27	153.22	7,011.2	714.8	1,297.3	-176.8	14.77
7,535.0	89.60	156.51	7,015.5	659.8	1,323.1	-116.1	13.16
7,581.0	89.66	156.31	7,015.8	617.6	1,341.5	-70.1	0.45
7,677.0	91.88	159.09	7,014.5	528.8	1,377.9	25.8	3.71
7,773.0	90.30	156.29	7,012.7	440.1	1,414.3	121.8	3.35
7,869.0	91.68	158.85	7,011.0	351.3	1,451.0	217.8	3.03
7,966.0	92.86	161.07	7,007.2	260.3	1,484.2	314.6	2.59
8,062.0	89.53	159.26	7,005.2	170.0	1,516.7	410.5	3.95
8,158.0	91.75	159.89	7,004.1	80.1	1,550.2	506.5	2.40
8,253.0	89.80	157.14	7,002.8	-8.3	1,585.0	601.5	3.55
8,349.0	92.28	158.78	7,001.1	-97.3	1,621.0	697.4	3.10
8,445.0	92.05	159.80	6,997.4	-187.0	1,655.0	793.3	1.09
8,541.0	89.06	158.90	6,996.5	-276.8	1,688.8	889.3	3.25
8,637.0	89.83	157.79	6,997.4	-366.0	1,724.2	985.3	1.41
8,733.0	90.37	156.84	6,997.3	-454.6	1,761.2	1,081.3	1.14
8,830.0	90.74	157.07	6,996.3	-543.9	1,799.2	1,178.3	0.45
8,926.0	90.03	156.55	6,995.7	-632.1	1,837.0	1,274.2	0.92
9,022.0	92.35	159.25	6,993.7	-721.0	1,873.1	1,370.2	3.71
9,119.0	91.41	156.83	6,990.5	-810.9	1,909.4	1,467.1	2.68
9,215.0	90.77	156.47	6,988.7	-899.0	1,947.4	1,563.1	0.76
9,312.0	90.60	158.00	6,987.5	-988.5	1,984.9	1,660.1	1.59
9,408.0	90.77	156.97	6,986.4	-1,077.2	2,021.7	1,756.1	1.09
9,504.0	91.61	156.67	6,984.4	-1,165.4	2,059.5	1,852.0	0.93
9,601.0	92.75	157.18	6,980.7	-1,254.6	2,097.5	1,948.9	1.29
9,697.0	92.25	157.38	6,976.5	-1,343.0	2,134.5	2,044.8	0.56
9,793.0	91.17	157.36	6,973.6	-1,431.6	2,171.4	2,140.8	1.13
9,890.0	90.84	157.87	6,971.9	-1,521.3	2,208.4	2,237.8	0.63
9,986.0	90.50	156.96	6,970.8	-1,609.9	2,245.2	2,333.8	1.01
10,082.0	89.46	156.80	6,970.9	-1,698.2	2,282.9	2,429.7	1.10
10,179.0	89.26	157.54	6,971.9	-1,787.6	2,320.6	2,526.7	0.79
10,275.0	91.11	160.91	6,971.6	-1,877.3	2,354.6	2,622.7	4.00
10,372.0	88.89	158.82	6,971.6	-1,968.4	2,388.0	2,719.6	3.14
10,468.0	90.91	159.16	6,971.8	-2,058.0	2,422.4	2,815.6	2.13
10,559.0	89.73	156.99	6,971.3	-2,142.4	2,456.4	2,911.6	2.71
10,651.0	90.27	156.36	6,971.3	-2,226.9	2,492.6	3,007.6	2.90
10,741.0	90.17	158.93	6,970.9	-2,310.1	2,527.0	3,088.5	2.86
10,833.0	89.50	160.90	6,971.2	-2,396.5	2,558.6	3,169.5	2.26
10,925.0	89.03	158.80	6,972.4	-2,482.9	2,590.3	3,272.4	2.34
11,016.0	90.40	158.44	6,972.8	-2,567.6	2,623.5	3,363.4	1.56
11,105.0	90.57	158.43	6,972.1	-2,650.4	2,656.2	3,452.4	0.19
11,195.0	88.73	157.38	6,972.6	-2,733.8	2,687.1	3,542.4	2.85
11,287.0	90.20	158.26	6,973.5	-2,818.9	2,724.8	3,634.4	1.86
11,377.0	90.00	157.44	6,973.3	-2,902.3	2,758.7	3,724.4	0.94
11,468.0	89.56	156.48	6,973.7	-2,986.0	2,794.3	3,815.4	1.16

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EOW Completion Report



Company:	Antero Resources	Local Co-ordinate Reference:	Well McMillan Unit 2H
Project:	Doddridge County WV	TVD Reference:	Frontier 22: 1115' GL +25' RKB @ 1140.0usft
Site:	Mishka/McMillan/Hoskinson Pad	MD Reference:	Frontier 22: 1115' GL +25' RKB @ 1140.0usft
Well:	McMillan Unit 2H	North Reference:	Grid
Wellbore:	Original Wellpath	Survey Calculation Method:	Minimum Curvature
Design:	As Drilled	Database:	Oklahoma District

Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)
11,558.0	90.10	156.95	6,974.0	-3,068.7	2,829.9	3,905.4	0.80
11,655.0	89.83	156.44	6,974.0	-3,157.8	2,868.3	4,002.3	0.59
11,751.0	89.33	156.54	6,974.7	-3,245.8	2,906.6	4,098.3	0.53
11,846.0	89.33	158.13	6,975.8	-3,333.5	2,943.2	4,193.3	1.67
11,942.0	90.44	157.84	6,976.0	-3,422.5	2,979.2	4,289.3	1.20
12,038.0	90.64	157.67	6,975.1	-3,511.3	3,015.5	4,385.3	0.27
12,131.0	89.80	158.46	6,974.8	-3,597.6	3,050.3	4,478.3	1.24
12,228.0	89.09	156.14	6,975.7	-3,687.1	3,087.7	4,575.3	2.50
12,324.0	89.13	159.07	6,977.2	-3,775.8	3,124.2	4,671.2	3.05
12,420.0	90.17	159.77	6,977.8	-3,865.7	3,158.0	4,767.2	1.31
12,517.0	90.77	158.59	6,977.0	-3,956.3	3,192.5	4,864.2	1.36
12,613.0	88.49	156.24	6,977.6	-4,045.0	3,229.3	4,960.2	3.41
12,710.0	88.72	159.72	6,980.0	-4,134.8	3,265.7	5,057.1	3.59
12,805.0	88.15	159.27	6,982.6	-4,223.8	3,298.9	5,152.0	0.76
12,901.0	88.35	159.09	6,985.5	-4,313.5	3,333.1	5,248.0	0.28
12,997.0	88.49	158.37	6,988.1	-4,402.9	3,367.9	5,343.9	0.76
13,093.0	88.56	158.20	6,990.6	-4,492.1	3,403.4	5,439.9	0.19
13,188.0	90.44	158.21	6,991.4	-4,580.3	3,438.6	5,534.9	1.98
13,284.0	90.50	158.33	6,990.7	-4,669.4	3,474.2	5,630.9	0.14
13,381.0	90.60	158.56	6,989.7	-4,759.7	3,509.8	5,727.9	0.26
13,477.0	88.49	157.29	6,990.5	-4,848.6	3,545.9	5,823.9	2.57
13,573.0	89.56	156.69	6,992.1	-4,937.0	3,583.4	5,919.8	1.28
13,670.0	89.33	156.66	6,993.1	-5,026.0	3,621.8	6,016.8	0.24
13,766.0	89.56	157.58	6,994.0	-5,114.5	3,659.1	6,112.8	0.99
13,862.0	89.33	157.28	6,994.9	-5,203.1	3,696.0	6,208.8	0.39
13,958.0	89.40	157.37	6,996.0	-5,291.7	3,733.0	6,304.8	0.12
14,053.0	89.93	157.67	6,996.5	-5,379.5	3,769.3	6,399.8	0.64
14,149.0	89.73	156.79	6,996.8	-5,468.0	3,806.5	6,495.7	0.94
14,245.0	89.13	156.46	6,997.8	-5,556.1	3,844.6	6,591.7	0.71
14,342.0	90.64	158.17	6,998.0	-5,645.6	3,882.0	6,688.7	2.35
14,438.0	89.87	157.62	6,997.5	-5,734.5	3,918.1	6,784.7	0.99
14,534.0	89.26	156.22	6,998.3	-5,822.8	3,955.7	6,880.7	1.59
14,631.0	90.10	157.45	6,998.8	-5,912.0	3,993.9	6,977.7	1.54
14,727.0	89.03	158.05	6,999.5	-6,000.9	4,030.2	7,073.6	1.28
14,823.0	89.52	159.08	7,000.8	-6,090.2	4,065.3	7,169.6	1.19
14,920.0	89.97	159.07	7,001.2	-6,180.8	4,099.9	7,266.6	0.46
15,016.0	89.66	158.44	7,001.5	-6,270.3	4,134.7	7,362.6	0.73
15,113.0	89.60	157.58	7,002.1	-6,360.2	4,171.0	7,459.6	0.89
15,209.0	90.30	158.57	7,002.2	-6,449.3	4,206.9	7,555.6	1.26
15,306.0	88.66	153.73	7,003.1	-6,538.0	4,246.1	7,652.5	1.27
15,402.0	90.71	157.69	7,003.6	-6,625.4	4,285.6	7,748.4	1.10
15,498.0	90.47	158.83	7,002.6	-6,714.6	4,321.1	7,844.4	1.21
15,594.0	89.80	158.05	7,002.4	-6,803.9	4,356.4	7,940.4	1.07
15,691.0	90.00	157.66	7,002.6	-6,893.7	4,393.0	8,037.4	0.45
15,787.0	89.63	157.33	7,002.9	-6,982.4	4,429.7	8,133.4	0.52

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Project:	Doddridge County WV	TVD Reference:	Frontier 22: 1115' GL +25' RKB @ 1140.0usft
Site:	Mishka/McMillan/Hoskinson Pad	MD Reference:	Frontier 22: 1115' GL +25' RKB @ 1140.0usft
Well:	McMillan Unit 2H	North Reference:	Grid
Wellbore:	Original Wellpath	Survey Calculation Method:	Minimum Curvature
Design:	As Drilled	Database:	Oklahoma District

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)
15,884.0	89.69	158.29	7,003.5	-7,072.2	4,466.4	8,230.4	0.99
15,980.0	90.71	157.95	7,003.1	-7,161.3	4,502.1	8,326.4	1.12
16,076.0	90.84	159.64	7,001.8	-7,250.8	4,536.8	8,422.4	1.77
16,173.0	90.97	159.81	7,000.3	-7,341.8	4,570.5	8,519.3	0.22
16,269.0	90.79	160.96	6,998.8	-7,432.2	4,602.7	8,615.2	1.21
16,366.0	89.09	160.61	6,998.9	-7,523.8	4,634.6	8,712.1	1.79
16,462.0	89.73	160.19	6,999.9	-7,614.2	4,666.8	8,808.0	0.80
16,559.0	89.03	160.30	7,001.0	-7,705.5	4,699.6	8,904.9	0.73
16,655.0	89.76	160.80	7,002.0	-7,796.0	4,731.6	9,000.8	0.92
16,751.0	89.60	158.62	7,002.5	-7,886.1	4,764.8	9,096.8	2.28
16,848.0	88.99	158.23	7,003.7	-7,976.3	4,800.5	9,193.8	0.75
16,944.0	89.66	158.72	7,004.8	-8,065.6	4,835.7	9,289.8	0.86
17,041.0	87.45	155.96	7,007.3	-8,155.0	4,873.1	9,386.7	3.64
17,137.0	87.85	155.61	7,011.2	-8,242.5	4,912.4	9,482.5	0.55
17,233.0	91.07	159.08	7,012.1	-8,331.1	4,949.4	9,578.5	4.93
17,329.0	90.40	157.46	7,010.9	-8,420.2	4,984.9	9,674.5	1.83
17,388.0	90.40	157.46	7,010.5	-8,474.7	5,007.5	9,733.5	0.00

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
7,017.0	6,743.7	988.7	1,088.4	Middlesex
7,184.0	6,879.7	926.5	1,160.8	Burkett
7,224.0	6,907.1	904.2	1,179.5	Tully
7,342.0	6,972.7	824.2	1,235.4	Marcellus

Checked By: _____ Approved By: _____ Date: _____

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