

RECEIVED

JUL 27 2015

WV GEOLOGICAL SURVEY
MORGANTOWN, WV



White Unit 1H
Doddridge County WV
Northing: 14252167.78
Easting: 1753980.47
As Drilled

WELL DETAILS: White Unit 1H			
Ground Level:	971.0	Latitude	Longitude
+N/-S	0.0	14252167.78	1753980.47
+E/-W	0.0	14252167.78	1753980.47

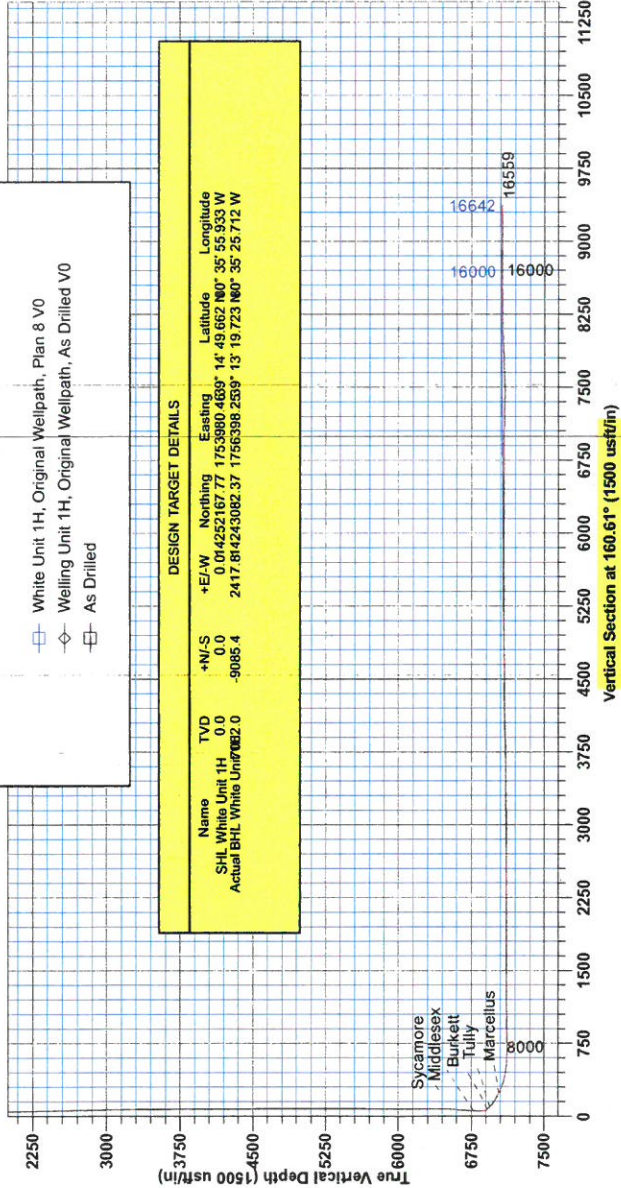
Frontier 3 : White 1H.G1+.23 KB @ 994.0usft
Gr: 971.0

PROJECT DETAILS:Doddridge County WV
Geodetic System: Universal Transverse Mercator (US Survey Feet)
Datum: NAD 1927 (NADCON CONUS)
Ellipsoid: Clarke 1866
Zone: Zone 17N (84 W to 78 W)
System Datum: Mean Sea Level

LEGEND

- White Unit 1H, Original Wellpath, Plan 8 V0
- ◇ Welling Unit 1H, Original Wellpath, As Drilled V0
- As Drilled

DESIGN TARGET DETAILS							
Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
SHL White Unit 1H	0.0	0.0	0.0	014252167.77	1753980.4639	14° 49' 662.80"	35° 55' 933.33" W
Actual BHL White Unit 1H	0.0	-9085.4	0.0	2417.84243082.37	1756398.2539	13° 19' 723.80"	35° 25' 712.33" W

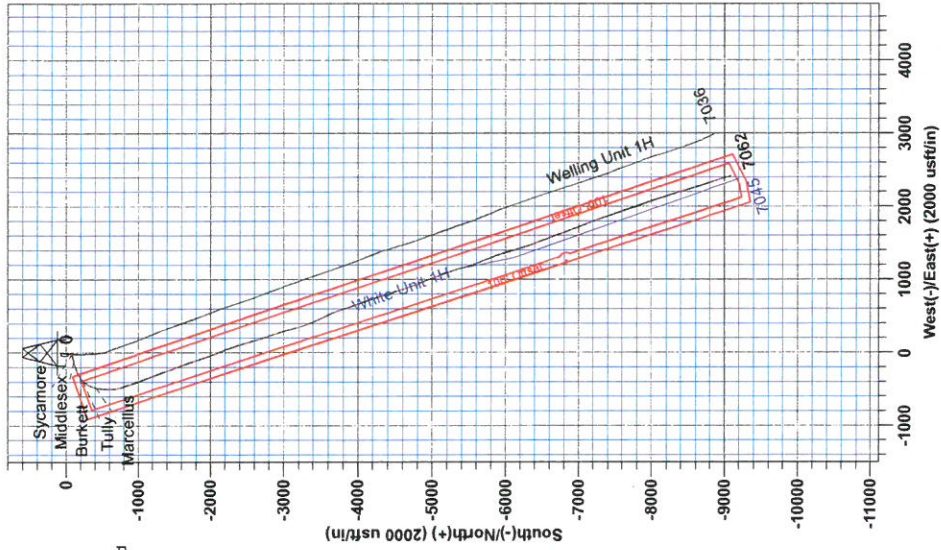


Genie Lightfoot
9/02, October 02 2014
Scientific Drilling
421 South Eagle Lane
Oklahoma City, OK 73128

SITE DETAILS: Flossie / Golden / Welling Pad
Site Centre Northing: 14252125.91
Easting: 1754023.86
Positional Uncertainty: 0.0
Convergence: 0.25
Local North: Grid

Azimuths to Grid North
True North: 0.25°
Magnetic North: -8.65°
Magnetic Field
Strength: 52207.7usT
Dip Angle: 66.81°
Date: 7/10/2014
Model: BGGN2014

To convert Magnetic North to Grid, Subtract 8.65°
To convert True North to Grid, Subtract 0.25°





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WV GEOLOGICAL SURVEY
MORGANTOWN, WV

Antero Resources

Doddridge County WV
Flossie / Golden / Welling Pad
White Unit 1H
Original Wellpath

Design: As Drilled

EOW Completion Report

02 October, 2014





Company:	Antero Resources	Local Co-ordinate Reference:	Well White Unit 1H
Project:	Doddridge County WV	TVD Reference:	Frontier 3 : White 1H 971 GL + 23 KB @ 994.0usf
Site:	Flossie / Golden / Welling Pad	MD Reference:	Frontier 3 : White 1H 971 GL + 23 KB @ 994.0usf
Well:	White Unit 1H	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 Fee	System Datum:	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	Zone 17N (84 W to 78 W)		

Site	Flossie / Golden / Welling Pad				
Site Position:		Northing:	14,252,125.91 usft	Latitude:	39° 14' 49.246 N
From:	Map	Easting:	1,754,023.86 usft	Longitude:	80° 35' 55.384 W
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16"	Grid Convergence:	0.25 °

Well	White Unit 1H					
Well Position	+N/-S	0.0 usft	Northing:	14,252,167.78 usft	Latitude:	39° 14' 49.662 N
	+E/-W	0.0 usft	Easting:	1,753,980.47 usft	Longitude:	80° 35' 55.933 W
Position Uncertainty	2.8 usft		Wellhead Elevation:	994.0 usft	Ground Level:	971.0 usft

Wellbore	Original Wellpath				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	BGGM2014	7/10/2014	-8.59	66.81	52,208

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	160.61	

Survey Program	Date	10/2/2014			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
110.0	6,403.0	Survey #6 Def Gyro to KOP (Original Well	SDI Standard Keeper	Scientific Drilling Intl. Standard Wireline Keeper	
6,403.0	16,559.0	Survey #7 SDI MWD (Original Wellpath)	SDI MWD	Scientific Drilling Intl. MWD - Standard ver 1.0.1	

Survey									
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	0.0	0.00	
110.0	0.06	216.17	110.0	0.0	0.0	0.0	0.0	0.05	
135.0	0.04	174.44	135.0	-0.1	0.0	0.0	0.0	0.16	
160.0	0.15	243.84	160.0	-0.1	-0.1	0.1	0.1	0.56	
185.0	0.08	216.48	185.0	-0.1	-0.1	0.1	0.1	0.35	
210.0	0.15	247.91	210.0	-0.1	-0.1	0.1	0.1	0.37	
235.0	0.17	266.94	235.0	-0.2	-0.2	0.1	0.1	0.23	
260.0	0.10	237.70	260.0	-0.2	-0.3	0.1	0.1	0.38	
285.0	0.10	200.67	285.0	-0.2	-0.3	0.1	0.1	0.25	
310.0	0.12	164.42	310.0	-0.2	-0.3	0.1	0.1	0.28	
335.0	0.30	173.28	335.0	-0.3	-0.3	0.2	0.2	0.73	

Company: Antero Resources
Project: Doddridge County WV
Site: Flossie / Golden / Welling Pad
Well: White Unit 1H
Wellbore: Original Wellpath
Design: As Drilled

Local Co-ordinate Reference: Well White Unit 1H
TVD Reference: Frontier 3 : White 1H 971 GL + 23 KB @ 994.0usft
MD Reference: Frontier 3 : White 1H 971 GL + 23 KB @ 994.0usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: Oklahoma District

Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)
360.0	0.33	189.56	360.0	-0.5	-0.3	0.4	0.38
385.0	0.33	176.18	385.0	-0.6	-0.3	0.5	0.31
410.0	0.29	176.46	410.0	-0.8	-0.3	0.6	0.16
435.0	0.36	179.85	435.0	-0.9	-0.3	0.8	0.29
460.0	0.35	179.78	460.0	-1.0	-0.3	0.9	0.04
485.0	0.38	187.99	485.0	-1.2	-0.3	1.0	0.24
510.0	0.31	179.06	510.0	-1.4	-0.3	1.2	0.35
535.0	0.39	181.57	535.0	-1.5	-0.3	1.3	0.33
560.0	0.32	182.73	560.0	-1.7	-0.3	1.5	0.28
585.0	0.35	175.25	585.0	-1.8	-0.3	1.6	0.21
610.0	0.38	171.17	610.0	-2.0	-0.3	1.8	0.16
635.0	0.36	190.19	635.0	-2.1	-0.3	1.9	0.50
660.0	0.29	174.46	660.0	-2.3	-0.3	2.0	0.45
685.0	0.36	173.10	685.0	-2.4	-0.3	2.2	0.28
710.0	0.35	178.25	710.0	-2.6	-0.3	2.3	0.13
735.0	0.37	178.92	735.0	-2.7	-0.3	2.5	0.08
760.0	0.38	178.76	760.0	-2.9	-0.3	2.6	0.04
785.0	0.43	175.72	785.0	-3.1	-0.3	2.8	0.22
810.0	0.34	168.12	810.0	-3.2	-0.2	3.0	0.41
835.0	0.38	176.35	835.0	-3.4	-0.2	3.1	0.26
860.0	0.42	174.52	860.0	-3.6	-0.2	3.3	0.17
885.0	0.43	176.37	885.0	-3.7	-0.2	3.5	0.07
910.0	0.40	166.91	910.0	-3.9	-0.2	3.6	0.30
935.0	0.45	165.86	935.0	-4.1	-0.1	3.8	0.20
960.0	0.41	179.05	960.0	-4.3	-0.1	4.0	0.43
985.0	0.43	175.04	985.0	-4.5	-0.1	4.2	0.14
1,010.0	0.46	162.36	1,010.0	-4.7	0.0	4.4	0.41
1,035.0	0.52	163.04	1,035.0	-4.9	0.0	4.6	0.24
1,060.0	0.43	170.95	1,060.0	-5.1	0.1	4.8	0.44
1,085.0	0.55	165.42	1,085.0	-5.3	0.1	5.0	0.52
1,110.0	0.51	164.71	1,110.0	-5.5	0.2	5.2	0.16
1,135.0	0.58	159.59	1,135.0	-5.7	0.2	5.5	0.34
1,160.0	0.54	161.94	1,160.0	-6.0	0.3	5.7	0.18
1,185.0	0.71	163.38	1,185.0	-6.2	0.4	6.0	0.68
1,210.0	0.62	167.61	1,210.0	-6.5	0.5	6.3	0.41
1,235.0	0.79	169.05	1,235.0	-6.8	0.5	6.6	0.68
1,260.0	0.73	186.52	1,260.0	-7.1	0.6	6.9	0.95
1,285.0	0.72	164.11	1,285.0	-7.4	0.6	7.2	1.13
1,310.0	0.78	158.01	1,310.0	-7.7	0.7	7.5	0.40
1,335.0	0.82	167.59	1,335.0	-8.1	0.8	7.9	0.56
1,360.0	0.88	165.43	1,360.0	-8.4	0.9	8.2	0.27
1,385.0	0.86	170.85	1,385.0	-8.8	1.0	8.6	0.34
1,410.0	0.87	167.82	1,410.0	-9.2	1.0	9.0	0.19
1,435.0	0.94	166.15	1,435.0	-9.6	1.1	9.4	0.30

Company:	Antero Resources	Local Co-ordinate Reference:	Well White Unit 1H
Project:	Doddridge County WV	TVD Reference:	Frontier 3 : White 1H 971 GL + 23 KB @ 994.0usf
Site:	Flossie / Golden / Welling Pad	MD Reference:	Frontier 3 : White 1H 971 GL + 23 KB @ 994.0usf
Well:	White Unit 1H	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)	EW (usft)	V. Sec (usft)	DLeg (°/100usft)
1,460.0	1.54	180.46	1,459.9	-10.1	1.2	9.9	2.68
1,485.0	2.24	186.76	1,484.9	-10.9	1.1	10.7	2.92
1,510.0	3.20	189.96	1,509.9	-12.1	0.9	11.7	3.89
1,535.0	4.10	189.52	1,534.9	-13.7	0.7	13.1	3.60
1,560.0	4.80	191.76	1,559.8	-15.6	0.3	14.8	2.88
1,585.0	5.86	195.67	1,584.7	-17.8	-0.3	16.7	4.48
1,610.0	6.38	198.02	1,609.5	-20.4	-1.0	18.9	2.31
1,635.0	6.71	199.01	1,634.4	-23.1	-1.9	21.1	1.39
1,660.0	6.68	203.23	1,659.2	-25.8	-3.0	23.3	1.97
1,685.0	6.86	208.00	1,684.0	-28.4	-4.3	25.4	2.36
1,710.0	6.97	209.61	1,708.8	-31.1	-5.7	27.4	0.89
1,735.0	7.06	209.40	1,733.7	-33.7	-7.2	29.4	0.37
1,760.0	7.03	210.02	1,758.5	-36.4	-8.7	31.4	0.33
1,785.0	7.20	209.44	1,783.3	-39.1	-10.3	33.5	0.74
1,810.0	7.23	209.55	1,808.1	-41.8	-11.8	35.5	0.13
1,835.0	7.14	209.44	1,832.9	-44.5	-13.4	37.6	0.36
1,860.0	5.84	206.40	1,857.7	-47.0	-14.7	39.5	5.38
1,885.0	4.75	204.44	1,882.6	-49.1	-15.7	41.1	4.42
1,910.0	3.64	201.93	1,907.5	-50.8	-16.4	42.5	4.50
1,935.0	2.98	200.66	1,932.5	-52.1	-16.9	43.6	2.66
1,960.0	1.91	196.90	1,957.5	-53.1	-17.3	44.4	4.33
1,985.0	1.77	196.50	1,982.5	-53.9	-17.5	45.0	0.56
2,010.0	1.68	195.43	2,007.5	-54.6	-17.7	45.7	0.38
2,035.0	1.70	194.79	2,032.4	-55.3	-17.9	46.3	0.11
2,060.0	1.69	194.19	2,057.4	-56.1	-18.1	46.9	0.08
2,085.0	1.72	195.60	2,082.4	-56.8	-18.3	47.5	0.21
2,110.0	1.62	195.42	2,107.4	-57.5	-18.5	48.1	0.40
2,135.0	1.65	194.23	2,132.4	-58.2	-18.7	48.7	0.18
2,160.0	1.69	195.01	2,157.4	-58.9	-18.9	49.3	0.18
2,185.0	1.69	195.73	2,182.4	-59.6	-19.0	49.9	0.08
2,210.0	1.73	195.96	2,207.4	-60.3	-19.3	50.5	0.16
2,235.0	1.67	194.26	2,232.4	-61.0	-19.4	51.1	0.31
2,260.0	1.66	193.60	2,257.3	-61.7	-19.6	51.7	0.09
2,285.0	1.66	193.04	2,282.3	-62.4	-19.8	52.3	0.06
2,310.0	1.77	194.08	2,307.3	-63.2	-20.0	52.9	0.46
2,335.0	1.76	193.22	2,332.3	-63.9	-20.1	53.6	0.11
2,360.0	1.74	194.28	2,357.3	-64.6	-20.3	54.2	0.15
2,385.0	1.74	190.54	2,382.3	-65.4	-20.5	54.9	0.45
2,410.0	1.69	193.28	2,407.3	-66.1	-20.6	55.5	0.38
2,435.0	1.78	191.71	2,432.3	-66.9	-20.8	56.2	0.41
2,460.0	1.71	192.64	2,457.3	-67.6	-21.0	56.8	0.30
2,485.0	1.69	192.46	2,482.2	-68.3	-21.1	57.4	0.08
2,510.0	1.76	190.96	2,507.2	-69.1	-21.3	58.1	0.33
2,535.0	1.82	188.60	2,532.2	-69.8	-21.4	58.8	0.38
2,560.0	1.67	191.77	2,557.2	-70.6	-21.5	59.4	0.71



Company: Antero Resources
Project: Doddridge County WV
Site: Flossie / Golden / Welling Pad
Well: White Unit 1H
Wellbore: Original Wellpath
Design: As Drilled

Local Co-ordinate Reference: Well White Unit 1H
TVD Reference: Frontier 3 : White 1H 971 GL + 23 KB @ 994.0usf
MD Reference: Frontier 3 : White 1H 971 GL + 23 KB @ 994.0usf
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: Oklahoma District

Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)
2,585.0	1.74	188.67	2,582.2	-71.3	-21.7	60.1	0.46
2,610.0	1.20	201.83	2,607.2	-71.9	-21.8	60.6	2.53
2,635.0	1.39	190.72	2,632.2	-72.5	-22.0	61.1	1.26
2,660.0	1.37	192.90	2,657.2	-73.1	-22.1	61.6	0.22
2,685.0	1.39	190.54	2,682.2	-73.7	-22.2	62.1	0.24
2,710.0	1.32	190.82	2,707.2	-74.2	-22.3	62.6	0.28
2,735.0	1.27	185.94	2,732.2	-74.8	-22.4	63.1	0.48
2,760.0	1.18	188.82	2,757.1	-75.3	-22.5	63.6	0.44
2,785.0	1.00	188.78	2,782.1	-75.8	-22.6	64.0	0.72
2,810.0	0.90	191.42	2,807.1	-76.2	-22.6	64.4	0.44
2,835.0	0.91	189.64	2,832.1	-76.6	-22.7	64.7	0.12
2,860.0	0.94	183.11	2,857.1	-77.0	-22.8	65.1	0.44
2,885.0	0.98	176.89	2,882.1	-77.4	-22.8	65.5	0.45
2,910.0	0.97	180.46	2,907.1	-77.8	-22.7	65.9	0.25
2,935.0	0.98	179.93	2,932.1	-78.3	-22.7	66.3	0.05
2,960.0	0.85	183.46	2,957.1	-78.7	-22.8	66.6	0.57
2,985.0	0.82	180.16	2,982.1	-79.0	-22.8	67.0	0.23
3,010.0	0.90	174.05	3,007.1	-79.4	-22.7	67.3	0.49
3,035.0	0.60	188.97	3,032.1	-79.7	-22.7	67.6	1.42
3,060.0	0.77	174.29	3,057.1	-80.0	-22.7	67.9	0.97
3,085.0	0.75	177.01	3,082.1	-80.3	-22.7	68.2	0.16
3,110.0	0.55	177.14	3,107.1	-80.6	-22.7	68.5	0.80
3,135.0	0.61	180.86	3,132.1	-80.9	-22.7	68.8	0.28
3,160.0	0.64	176.88	3,157.1	-81.2	-22.7	69.0	0.21
3,185.0	0.67	176.66	3,182.1	-81.4	-22.7	69.3	0.12
3,210.0	0.60	174.92	3,207.1	-81.7	-22.7	69.6	0.29
3,235.0	0.57	179.73	3,232.1	-82.0	-22.7	69.8	0.23
3,260.0	0.40	183.02	3,257.1	-82.2	-22.7	70.0	0.69
3,285.0	0.49	179.08	3,282.1	-82.4	-22.7	70.2	0.38
3,310.0	0.59	174.95	3,307.1	-82.6	-22.6	70.4	0.43
3,335.0	0.46	178.54	3,332.1	-82.8	-22.6	70.6	0.54
3,360.0	0.35	179.16	3,357.1	-83.0	-22.6	70.8	0.44
3,385.0	0.42	167.74	3,382.1	-83.2	-22.6	71.0	0.41
3,410.0	0.50	168.15	3,407.1	-83.4	-22.6	71.2	0.32
3,435.0	0.30	168.18	3,432.1	-83.6	-22.5	71.3	0.80
3,460.0	0.29	183.52	3,457.1	-83.7	-22.5	71.5	0.32
3,485.0	0.40	165.93	3,482.1	-83.8	-22.5	71.6	0.61
3,510.0	0.43	160.42	3,507.1	-84.0	-22.5	71.8	0.20
3,535.0	0.30	164.15	3,532.1	-84.1	-22.4	71.9	0.53
3,560.0	0.45	164.81	3,557.1	-84.3	-22.4	72.1	0.60
3,585.0	0.47	160.96	3,582.1	-84.5	-22.3	72.3	0.15
3,610.0	0.32	166.05	3,607.1	-84.7	-22.2	72.5	0.62
3,635.0	0.43	158.83	3,632.1	-84.8	-22.2	72.6	0.48
3,660.0	0.55	154.59	3,657.1	-85.0	-22.1	72.9	0.50

JUL 27 2015

Company:	Antero Resources	Local Co-ordinate Reference:	Well White Unit 1H
Project:	Doddridge County WV	TVD Reference:	Frontier 3 : White 1H 971 GL + 23 KB @ 994.0usf
Site:	Flossie / Golden / Welling Pad	MD Reference:	Frontier 3 : White 1H 971 GL + 23 KB @ 994.0usf
Well:	White Unit 1H	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)
3,685.0	0.28	169.16	3,682.1	-85.2	-22.0	73.0	1.15
3,710.0	0.35	162.79	3,707.1	-85.3	-22.0	73.2	0.31
3,735.0	0.40	152.45	3,732.1	-85.5	-22.0	73.3	0.34
3,760.0	0.31	161.23	3,757.1	-85.6	-21.9	73.5	0.42
3,785.0	0.28	159.46	3,782.1	-85.7	-21.8	73.6	0.13
3,810.0	0.42	154.75	3,807.1	-85.9	-21.8	73.8	0.57
3,835.0	0.38	153.56	3,832.1	-86.0	-21.7	73.9	0.16
3,860.0	0.37	149.70	3,857.1	-86.2	-21.6	74.1	0.11
3,885.0	0.35	153.36	3,882.1	-86.3	-21.6	74.3	0.12
3,910.0	0.37	147.94	3,907.1	-86.4	-21.5	74.4	0.16
3,935.0	0.34	141.09	3,932.1	-86.6	-21.4	74.6	0.21
3,960.0	0.39	137.85	3,957.1	-86.7	-21.3	74.7	0.22
3,985.0	0.39	135.55	3,982.1	-86.8	-21.2	74.9	0.06
4,010.0	0.35	129.03	4,007.1	-86.9	-21.1	75.0	0.23
4,035.0	0.30	129.64	4,032.1	-87.0	-20.9	75.1	0.20
4,060.0	0.44	129.92	4,057.1	-87.1	-20.8	75.3	0.56
4,085.0	0.37	120.21	4,082.1	-87.2	-20.7	75.4	0.39
4,110.0	0.43	114.09	4,107.1	-87.3	-20.5	75.5	0.29
4,135.0	0.41	101.74	4,132.1	-87.4	-20.3	75.6	0.37
4,160.0	0.46	97.65	4,157.1	-87.4	-20.2	75.7	0.24
4,185.0	0.36	82.98	4,182.1	-87.4	-20.0	75.8	0.58
4,210.0	0.44	90.26	4,207.1	-87.4	-19.8	75.8	0.38
4,235.0	0.45	86.81	4,232.1	-87.4	-19.6	75.9	0.11
4,260.0	0.56	85.21	4,257.1	-87.4	-19.4	76.0	0.44
4,285.0	0.55	82.39	4,282.1	-87.3	-19.2	76.0	0.12
4,310.0	0.60	85.41	4,307.1	-87.3	-18.9	76.1	0.23
4,335.0	0.57	79.95	4,332.1	-87.3	-18.7	76.1	0.25
4,360.0	0.65	83.28	4,357.1	-87.2	-18.4	76.2	0.35
4,385.0	0.66	82.76	4,382.1	-87.2	-18.1	76.2	0.05
4,410.0	0.66	83.30	4,407.1	-87.2	-17.8	76.3	0.02
4,435.0	0.68	83.73	4,432.1	-87.1	-17.5	76.4	0.08
4,460.0	0.63	80.34	4,457.1	-87.1	-17.2	76.4	0.25
4,485.0	0.63	86.75	4,482.1	-87.1	-17.0	76.5	0.28
4,510.0	0.64	80.18	4,507.1	-87.0	-16.7	76.6	0.29
4,535.0	0.64	81.12	4,532.1	-87.0	-16.4	76.6	0.04
4,560.0	0.65	78.88	4,557.1	-86.9	-16.1	76.6	0.11
4,585.0	0.65	83.30	4,582.1	-86.9	-15.9	76.7	0.20
4,610.0	0.71	86.94	4,607.1	-86.9	-15.6	76.8	0.30
4,635.0	0.76	88.52	4,632.1	-86.9	-15.2	76.9	0.22
4,660.0	0.89	85.83	4,657.0	-86.8	-14.9	77.0	0.54
4,685.0	0.74	81.15	4,682.0	-86.8	-14.5	77.1	0.66
4,710.0	0.87	78.86	4,707.0	-86.7	-14.2	77.1	0.54
4,735.0	0.83	75.11	4,732.0	-86.7	-13.8	77.1	0.27
4,760.0	0.83	76.50	4,757.0	-86.6	-13.5	77.2	0.08

JUL 27 2015



Company: Antero Resources
Project: Doddridge County WV
Site: Flossie / Golden / Welling Pad
Well: White Unit 1H
Wellbore: Original Wellpath
Design: As Drilled

Local Co-ordinate Reference: Well White Unit 1H
TVD Reference: Frontier 3 : White 1H 971 GL + 23 KB @ 994.0usf
MD Reference: Frontier 3 : White 1H 971 GL + 23 KB @ 994.0usf
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: Oklahoma District

Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)
4,785.0	0.84	80.31	4,782.0	-86.5	-13.1	77.2	0.23
4,810.0	0.74	76.25	4,807.0	-86.4	-12.8	77.3	0.46
4,835.0	0.79	85.87	4,832.0	-86.4	-12.5	77.3	0.55
4,860.0	0.91	89.87	4,857.0	-86.4	-12.1	77.5	0.54
4,885.0	0.79	66.84	4,882.0	-86.3	-11.7	77.5	1.44
4,910.0	0.88	87.00	4,907.0	-86.2	-11.4	77.5	1.22
4,935.0	0.94	85.69	4,932.0	-86.2	-11.0	77.7	0.25
4,960.0	1.00	81.52	4,957.0	-86.1	-10.6	77.7	0.37
4,985.0	0.98	82.66	4,982.0	-86.1	-10.1	77.8	0.11
5,010.0	1.00	86.99	5,007.0	-86.0	-9.7	77.9	0.31
5,035.0	0.94	82.81	5,032.0	-86.0	-9.3	78.0	0.37
5,060.0	1.00	84.56	5,057.0	-86.0	-8.9	78.1	0.27
5,085.0	0.94	78.65	5,082.0	-85.9	-8.4	78.2	0.47
5,110.0	0.99	78.80	5,107.0	-85.8	-8.0	78.3	0.20
5,135.0	0.96	78.35	5,132.0	-85.7	-7.6	78.3	0.12
5,160.0	0.95	76.96	5,157.0	-85.6	-7.2	78.4	0.10
5,185.0	0.89	71.10	5,182.0	-85.5	-6.8	78.4	0.45
5,210.0	0.86	73.34	5,207.0	-85.4	-6.5	78.4	0.18
5,235.0	0.87	68.43	5,232.0	-85.3	-6.1	78.4	0.30
5,260.0	0.92	62.34	5,257.0	-85.1	-5.7	78.4	0.43
5,285.0	0.80	54.82	5,282.0	-84.9	-5.4	78.3	0.66
5,310.0	0.78	54.65	5,307.0	-84.7	-5.1	78.2	0.08
5,335.0	0.79	47.55	5,332.0	-84.5	-4.9	78.1	0.39
5,360.0	0.78	44.23	5,357.0	-84.3	-4.6	78.0	0.19
5,385.0	0.78	51.82	5,382.0	-84.1	-4.4	77.8	0.41
5,410.0	0.81	43.39	5,407.0	-83.8	-4.1	77.7	0.48
5,435.0	0.75	48.12	5,432.0	-83.6	-3.9	77.6	0.35
5,460.0	0.74	44.37	5,457.0	-83.4	-3.6	77.4	0.20
5,485.0	0.73	47.46	5,482.0	-83.1	-3.4	77.3	0.16
5,510.0	0.73	50.43	5,507.0	-82.9	-3.2	77.2	0.15
5,535.0	0.76	51.82	5,531.9	-82.7	-2.9	77.1	0.14
5,560.0	0.71	48.25	5,556.9	-82.5	-2.7	77.0	0.27
5,585.0	0.72	49.36	5,581.9	-82.3	-2.4	76.8	0.07
5,610.0	0.66	51.22	5,606.9	-82.1	-2.2	76.7	0.26
5,635.0	0.72	54.95	5,631.9	-81.9	-2.0	76.6	0.30
5,660.0	0.72	49.03	5,656.9	-81.7	-1.7	76.5	0.30
5,685.0	0.71	49.19	5,681.9	-81.5	-1.5	76.4	0.04
5,710.0	0.72	55.33	5,706.9	-81.4	-1.2	76.3	0.31
5,735.0	0.70	52.24	5,731.9	-81.2	-1.0	76.2	0.17
5,760.0	0.75	52.04	5,756.9	-81.0	-0.7	76.1	0.20
5,785.0	0.67	52.66	5,781.9	-80.8	-0.5	76.0	0.32
5,810.0	0.72	51.57	5,806.9	-80.6	-0.3	75.9	0.21
5,835.0	0.73	58.35	5,831.9	-80.4	0.0	75.9	0.35
5,860.0	0.74	59.00	5,856.9	-80.3	0.3	75.8	0.05

JUL 27 2015



WV GEOLOGICAL SURVEY EOW Completion Report
MORGANTOWN, WV



Company: Antero Resources Project: Doddridge County WV Site: Flossie / Golden / Welling Pad Well: White Unit 1H Wellbore: Original Wellpath Design: As Drilled	Local Co-ordinate Reference: Well White Unit 1H TVD Reference: Frontier 3 : White 1H 971 GL + 23 KB @ 994.0usf MD Reference: Frontier 3 : White 1H 971 GL + 23 KB @ 994.0usf North Reference: Grid Survey Calculation Method: Minimum Curvature Database: Oklahoma District	
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Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)
5,885.0	0.76	54.40	5,881.9	-80.1	0.5	75.7	0.25
5,910.0	0.73	55.82	5,906.9	-79.9	0.8	75.6	0.14
5,935.0	0.78	59.85	5,931.9	-79.7	1.1	75.6	0.29
5,960.0	0.71	64.06	5,956.9	-79.6	1.4	75.5	0.36
5,985.0	0.64	64.91	5,981.9	-79.4	1.6	75.5	0.28
6,010.0	0.64	63.95	6,006.9	-79.3	1.9	75.4	0.04
6,035.0	0.61	57.86	6,031.9	-79.2	2.1	75.4	0.29
6,060.0	0.61	60.78	6,056.9	-79.0	2.4	75.3	0.12
6,085.0	0.59	53.33	6,081.9	-78.9	2.6	75.3	0.32
6,110.0	0.58	65.11	6,106.9	-78.8	2.8	75.2	0.48
6,135.0	0.39	66.60	6,131.9	-78.7	3.0	75.2	0.76
6,160.0	0.34	73.95	6,156.9	-78.6	3.1	75.2	0.27
6,185.0	0.24	75.73	6,181.9	-78.6	3.3	75.2	0.40
6,210.0	0.23	78.70	6,206.9	-78.6	3.4	75.2	0.06
6,235.0	0.24	85.54	6,231.9	-78.6	3.5	75.3	0.12
6,260.0	0.17	77.45	6,256.9	-78.5	3.6	75.3	0.30
6,285.0	0.09	29.46	6,281.9	-78.5	3.6	75.3	0.51
6,310.0	0.18	118.52	6,306.9	-78.5	3.6	75.3	0.80
6,335.0	0.09	79.38	6,331.9	-78.5	3.7	75.3	0.50
6,360.0	0.27	95.54	6,356.9	-78.5	3.8	75.3	0.74
6,385.0	0.34	120.79	6,381.9	-78.6	3.9	75.4	0.60
6,403.0	0.18	120.62	6,399.9	-78.6	4.0	75.5	0.89
6,436.0	0.17	230.30	6,432.9	-78.7	4.0	75.5	0.87
6,467.0	2.41	278.36	6,463.9	-78.6	3.3	75.3	7.42
6,499.0	6.11	273.33	6,495.8	-78.4	0.9	74.3	11.61
6,530.0	9.88	271.14	6,526.5	-78.3	-3.4	72.7	12.20
6,547.0	12.26	270.67	6,543.2	-78.2	-6.6	71.6	14.01
Sycamore							
6,561.0	14.22	270.40	6,556.8	-78.2	-9.8	70.5	14.01
6,592.0	18.36	266.98	6,586.6	-78.4	-18.5	67.8	13.70
6,623.0	21.70	263.71	6,615.7	-79.3	-29.1	65.1	11.36
6,654.0	25.00	261.20	6,644.1	-80.9	-41.3	62.6	11.12
6,686.0	28.50	257.77	6,672.7	-83.6	-55.4	60.4	11.95
6,717.0	31.98	255.44	6,699.5	-87.2	-70.6	58.8	11.84
6,749.0	36.18	253.70	6,726.0	-92.0	-87.9	57.6	13.47
6,781.0	40.76	253.99	6,751.0	-97.5	-107.0	56.5	14.32
6,807.0	44.11	254.11	6,770.2	-102.4	-123.9	55.4	12.88
Middlesex							
6,813.0	44.88	254.13	6,774.5	-103.5	-127.9	55.2	12.88
6,844.0	48.38	253.07	6,795.8	-109.9	-149.5	54.0	11.56
6,875.0	52.09	251.85	6,815.6	-117.1	-172.2	53.2	12.34
6,906.0	55.63	251.56	6,833.9	-124.9	-196.0	52.8	11.44
6,937.0	59.36	252.49	6,850.5	-133.0	-220.9	52.1	12.30
6,969.0	62.27	250.28	6,866.1	-141.9	-247.3	51.7	10.91
7,000.0	63.38	245.31	6,880.3	-152.3	-272.9	53.1	14.70



EOW Completion Report



Company: Antero Resources
Project: Doddridge County WV
Site: Flossie / Golden / Welling Pad
Well: White Unit 1H
Wellbore: Original Wellpath
Design: As Drilled

Local Co-ordinate Reference: Well White Unit 1H
TVD Reference: Frontier 3 : White 1H 971 GL + 23 KB @ 994.0usf
MD Reference: Frontier 3 : White 1H 971 GL + 23 KB @ 994.0usf
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: Oklahoma District

Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)
7,032.0	63.65	239.81	6,894.6	-165.5	-298.3	57.1	15.41
7,063.0	64.33	235.15	6,908.2	-180.5	-321.7	63.4	13.69
7,089.0	65.16	231.80	6,919.3	-194.5	-340.6	70.4	12.09
Burkett							
7,094.0	65.33	231.16	6,921.4	-197.3	-344.2	71.9	12.09
7,126.0	66.42	226.22	6,934.5	-216.6	-366.1	82.8	14.49
7,152.0	66.66	222.75	6,944.8	-233.6	-382.8	93.3	12.28
Tully							
7,158.0	66.73	221.95	6,947.2	-237.7	-386.5	95.9	12.28
7,189.0	66.81	219.11	6,959.4	-259.3	-405.0	110.2	8.42
7,221.0	66.37	214.69	6,972.1	-282.8	-422.7	126.4	12.75
7,252.0	66.60	210.18	6,984.5	-306.8	-437.9	144.0	13.36
7,284.0	66.36	205.53	6,997.3	-332.7	-451.6	163.9	13.34
7,315.0	66.29	200.57	7,009.7	-358.8	-462.7	184.9	14.65
7,346.0	66.87	196.59	7,022.1	-385.8	-471.8	207.3	11.93
7,377.0	68.31	193.73	7,033.9	-413.5	-479.3	230.9	9.71
7,378.0	68.34	193.63	7,034.3	-414.4	-479.5	231.7	9.42
Marcellus							
7,409.0	69.34	190.69	7,045.5	-442.6	-485.6	256.3	9.42
7,440.0	70.59	187.48	7,056.1	-471.4	-490.2	281.9	10.53
7,473.0	72.08	183.88	7,066.6	-502.5	-493.3	310.2	11.28
7,504.0	74.03	182.74	7,075.7	-532.1	-495.0	337.6	7.21
7,536.0	75.72	181.92	7,084.0	-562.9	-496.2	366.3	5.83
7,567.0	77.71	180.26	7,091.1	-593.1	-496.8	394.5	8.27
7,599.0	79.80	178.15	7,097.4	-624.5	-496.4	424.3	9.19
7,630.0	81.70	175.15	7,102.4	-655.0	-494.6	453.7	11.35
7,662.0	83.05	171.67	7,106.6	-686.5	-490.9	484.6	11.57
7,693.0	83.77	168.80	7,110.2	-716.9	-485.7	515.0	9.49
7,725.0	84.35	165.27	7,113.5	-747.9	-478.6	546.6	11.12
7,802.0	90.22	160.91	7,117.1	-821.4	-456.2	623.4	9.49
7,833.0	90.40	161.52	7,117.0	-850.8	-446.2	654.4	2.05
7,929.0	90.48	162.05	7,116.2	-942.0	-416.2	750.3	0.56
8,024.0	91.10	160.21	7,114.9	-1,031.8	-385.5	845.3	2.04
8,118.0	90.40	159.50	7,113.7	-1,120.1	-353.1	939.3	1.06
8,211.0	90.54	159.88	7,112.9	-1,207.3	-320.8	1,032.3	0.44
8,305.0	91.36	160.29	7,111.4	-1,295.7	-288.8	1,126.3	0.98
8,399.0	89.60	158.45	7,110.6	-1,383.6	-255.7	1,220.2	2.71
8,494.0	89.52	158.80	7,111.3	-1,472.1	-221.1	1,315.2	0.38
8,589.0	90.57	160.73	7,111.2	-1,561.2	-188.2	1,410.2	2.31
8,684.0	90.84	159.15	7,110.1	-1,650.4	-155.7	1,505.1	1.69
8,779.0	90.31	162.32	7,109.1	-1,740.1	-124.3	1,600.1	3.38
8,874.0	89.78	163.19	7,109.0	-1,830.8	-96.2	1,695.1	1.07
8,968.0	90.13	161.26	7,109.1	-1,920.3	-67.5	1,789.0	2.09
9,063.0	90.31	160.21	7,108.7	-2,010.0	-36.1	1,884.0	1.12
9,158.0	90.22	157.92	7,108.3	-2,098.7	-2.2	1,979.0	2.41

JUL 27 2015



EOW Completion Report



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North Reference: Grid
Survey Calculation Method: Minimum Curvature
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Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)
9,253.0	90.31	158.62	7,107.9	-2,187.0	33.0	2,073.9	0.74
9,347.0	90.04	160.91	7,107.6	-2,275.2	65.5	2,167.9	2.45
9,442.0	89.87	160.78	7,107.7	-2,364.9	96.7	2,262.9	0.23
9,537.0	89.78	163.90	7,107.9	-2,455.4	125.5	2,357.8	3.29
9,632.0	89.60	163.99	7,108.5	-2,546.7	151.8	2,452.7	0.21
9,727.0	89.96	165.04	7,108.8	-2,638.3	177.1	2,547.4	1.17
9,823.0	90.04	160.65	7,108.8	-2,730.0	205.4	2,643.3	4.57
9,918.0	89.96	161.35	7,108.8	-2,819.8	236.4	2,738.3	0.74
10,012.0	90.66	163.55	7,108.3	-2,909.4	264.7	2,832.3	2.46
10,107.0	89.96	160.56	7,107.8	-2,999.8	294.0	2,927.2	3.23
10,202.0	91.19	164.43	7,106.9	-3,090.4	322.5	3,022.2	4.27
10,296.0	90.48	164.43	7,105.5	-3,180.9	347.8	3,115.9	0.76
10,387.0	90.92	166.27	7,104.4	-3,268.9	370.8	3,206.6	2.08
10,477.0	90.48	157.31	7,103.3	-3,354.3	398.9	3,296.5	9.97
10,568.0	90.92	154.58	7,102.2	-3,437.4	436.0	3,387.2	3.04
10,659.0	90.22	152.82	7,101.2	-3,519.0	476.3	3,477.5	2.08
10,749.0	90.92	154.23	7,100.4	-3,599.5	516.4	3,566.8	1.75
10,840.0	89.34	156.43	7,100.1	-3,682.2	554.4	3,657.4	2.98
10,930.0	90.40	160.03	7,100.4	-3,765.8	587.8	3,747.3	4.17
11,021.0	91.36	161.61	7,099.0	-3,851.7	617.6	3,838.3	2.03
11,111.0	92.33	160.73	7,096.1	-3,936.9	646.7	3,928.3	1.45
11,202.0	91.19	161.88	7,093.3	-4,023.0	675.8	4,019.2	1.78
11,292.0	91.45	161.52	7,091.2	-4,108.4	704.1	4,109.2	0.49
11,382.0	91.63	160.56	7,088.8	-4,193.5	733.3	4,199.1	1.08
11,477.0	90.84	161.79	7,086.7	-4,283.4	764.0	4,294.1	1.54
11,572.0	88.81	163.02	7,087.0	-4,374.0	792.7	4,389.1	2.50
11,667.0	89.43	162.40	7,088.5	-4,464.7	820.9	4,484.0	0.92
11,763.0	90.84	160.91	7,088.2	-4,555.8	851.1	4,580.0	2.14
11,858.0	90.75	161.17	7,086.9	-4,645.6	882.0	4,674.9	0.29
11,952.0	91.10	159.68	7,085.4	-4,734.2	913.5	4,768.9	1.63
12,047.0	90.04	159.42	7,084.5	-4,823.2	946.7	4,863.9	1.15
12,141.0	90.75	158.45	7,083.8	-4,910.9	980.4	4,957.9	1.28
12,236.0	90.66	157.57	7,082.6	-4,999.0	1,016.0	5,052.8	0.93
12,331.0	90.66	157.92	7,081.6	-5,086.9	1,052.0	5,147.6	0.37
12,426.0	90.75	159.85	7,080.4	-5,175.5	1,086.2	5,242.6	2.03
12,521.0	89.69	162.84	7,080.0	-5,265.5	1,116.6	5,337.6	3.34
12,616.0	89.43	164.16	7,080.7	-5,356.6	1,143.6	5,432.4	1.42
12,710.0	90.31	163.11	7,081.0	-5,446.8	1,170.1	5,526.3	1.46
12,805.0	89.69	160.91	7,081.0	-5,537.1	1,199.4	5,621.3	2.41
12,899.0	89.78	159.59	7,081.4	-5,625.6	1,231.2	5,715.3	1.41
12,994.0	88.99	156.25	7,082.4	-5,713.6	1,266.9	5,810.1	3.61
13,090.0	90.84	158.80	7,082.6	-5,802.3	1,303.6	5,906.0	3.28
13,185.0	89.34	162.84	7,082.4	-5,892.0	1,334.8	6,001.0	4.54
13,279.0	89.87	162.67	7,083.1	-5,981.8	1,362.6	6,094.9	0.59



Company: Antero Resources
Project: Doddridge County WV
Site: Flossie / Golden / Welling Pad
Well: White Unit 1H
Wellbore: Original Wellpath
Design: As Drilled

Local Co-ordinate Reference: Well White Unit 1H
TVD Reference: Frontier 3 : White 1H 971 GL + 23 KB @ 994.0usf
MD Reference: Frontier 3 : White 1H 971 GL + 23 KB @ 994.0usf
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: Oklahoma District

Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)
13,375.0	90.57	162.32	7,082.7	-6,073.3	1,391.5	6,190.8	0.82
13,469.0	90.22	165.92	7,082.0	-6,163.7	1,417.2	6,284.6	3.85
13,563.0	89.69	161.79	7,082.1	-6,254.0	1,443.3	6,378.5	4.43
13,658.0	90.13	161.09	7,082.3	-6,344.1	1,473.6	6,473.5	0.87
13,753.0	89.25	158.80	7,082.8	-6,433.3	1,506.2	6,568.4	2.58
13,848.0	89.52	160.29	7,083.8	-6,522.3	1,539.4	6,663.4	1.59
13,942.0	89.87	158.10	7,084.3	-6,610.2	1,572.7	6,757.4	2.36
14,037.0	89.78	159.50	7,084.6	-6,698.7	1,607.1	6,852.3	1.48
14,132.0	89.52	160.82	7,085.2	-6,788.1	1,639.3	6,947.3	1.42
14,228.0	89.16	158.62	7,086.3	-6,878.1	1,672.6	7,043.3	2.32
14,322.0	89.43	158.98	7,087.4	-6,965.8	1,706.6	7,137.2	0.48
14,417.0	88.72	157.83	7,089.0	-7,054.1	1,741.6	7,232.2	1.42
14,512.0	88.81	160.03	7,091.0	-7,142.7	1,775.7	7,327.1	2.32
14,606.0	89.25	159.68	7,092.6	-7,230.9	1,808.1	7,421.1	0.60
14,702.0	89.96	161.09	7,093.3	-7,321.4	1,840.3	7,517.1	1.64
14,797.0	92.33	160.82	7,091.4	-7,411.1	1,871.3	7,612.0	2.51
14,892.0	92.77	161.26	7,087.1	-7,500.9	1,902.1	7,706.9	0.65
14,987.0	93.39	160.56	7,082.0	-7,590.5	1,933.1	7,801.8	0.98
15,082.0	91.80	161.17	7,077.7	-7,680.2	1,964.3	7,896.7	1.79
15,177.0	91.80	161.44	7,074.8	-7,770.1	1,994.7	7,991.6	0.28
15,271.0	92.24	160.03	7,071.4	-7,858.8	2,025.7	8,085.6	1.57
15,366.0	90.13	161.52	7,069.5	-7,948.5	2,057.0	8,180.6	2.72
15,460.0	90.57	161.00	7,068.9	-8,037.5	2,087.2	8,274.5	0.72
15,554.0	91.01	160.65	7,067.6	-8,126.3	2,118.0	8,368.5	0.60
15,649.0	90.13	162.67	7,066.7	-8,216.4	2,147.9	8,463.5	2.32
15,744.0	90.31	162.84	7,066.3	-8,307.2	2,176.1	8,558.4	0.26
15,839.0	91.36	162.67	7,064.9	-8,397.9	2,204.2	8,653.4	1.12
15,934.0	89.96	162.93	7,063.8	-8,488.6	2,232.3	8,748.3	1.50
16,029.0	90.40	163.46	7,063.5	-8,579.6	2,259.8	8,843.2	0.73
16,123.0	88.81	163.37	7,064.2	-8,669.7	2,286.6	8,937.1	1.69
16,218.0	89.60	162.32	7,065.5	-8,760.4	2,314.6	9,032.0	1.38
16,313.0	90.66	162.23	7,065.3	-8,850.9	2,343.6	9,126.9	1.12
16,408.0	90.40	161.88	7,064.4	-8,941.3	2,372.8	9,221.9	0.46
16,504.0	90.75	162.93	7,063.4	-9,032.8	2,401.8	9,317.9	1.15
16,559.0	92.15	163.37	7,062.0	-9,085.4	2,417.8	9,372.8	2.67



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North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: Oklahoma District

Design Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
6,547.0	6,543.2	-78.2	-6.6	Sycamore
6,807.0	6,770.2	-102.4	-123.9	Middlesex
7,089.0	6,919.3	-194.5	-340.6	Burkett
7,152.0	6,944.8	-233.6	-382.8	Tully
7,378.0	7,034.3	-414.4	-479.5	Marcellus

Checked By: _____ Approved By: _____ Date: _____

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JUL 27 2015

WV GEOLOGICAL SURVEY
MORGANTOWN, WV