

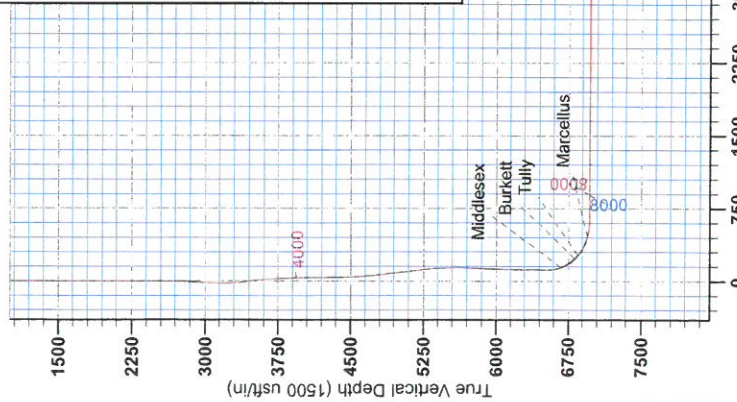
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WV GEOLOGICAL SURVEY  
MORGANTOWN, WV



**Antero Resources**  
**Swisher Unit 2H**  
**Doddrige County WV**  
**Northing: 14238703.51**  
**Easting: 1734910.01**  
**As Drilled**



**WELL DETAILS:** Swisher Unit 2H  
Ground Level: 978.0  
Slot  
+N/-S +E/-W Northing Easting Longitude Slot  
0.0 0.0 14238703.51 1734910.01 39° 12' 37.297 N 80° 39' 59.058 W

**REFERENCE INFORMATION**  
Co-ordinate (NE) Reference: Well Swisher Unit 2H, Grid North  
Vertical (TVD) Reference: Swisher 2H 978 GL + 24KB @ 1000.0usft  
Section (VS) Reference: Slot - (0.0K, 0.0E)  
Measured Depth Reference: Swisher 2H 978 GL + 24KB @ 1000.0usft  
Calculation Method: Minimum Curvature

**PROJECT DETAILS:** Doddridge County WV  
Geologic 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



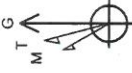
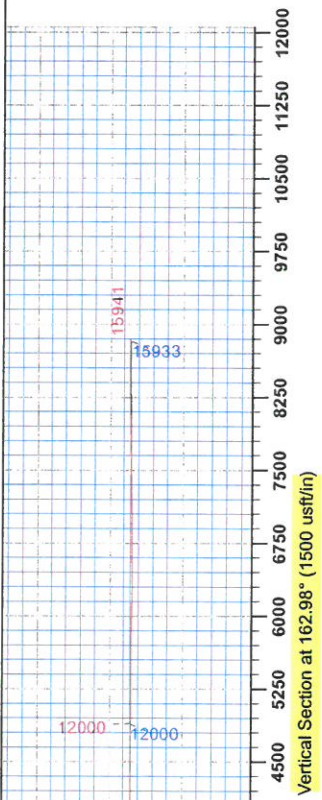
Genie Lightfoot  
14:22, January 09 2014  
Scientific Drilling  
421 South Eagle Lane  
Oklahoma City, OK

**LEGEND**

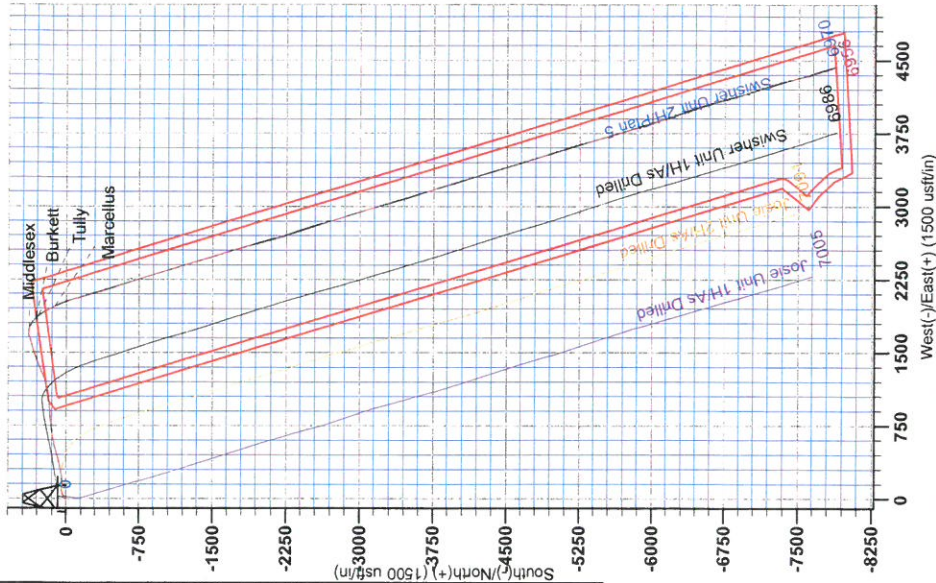
- Swisher Unit 2H, Original Wellpath, Plan 5 V0
- Josie Unit 1H, Original Wellpath, As Drilled V0
- Swisher Unit 1H, Original Wellpath, As Drilled V0
- Josie Unit 2H, Original Wellpath, As Drilled V0
- As Drilled

**DESIGN TARGET DETAILS**

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
SHL Swisher Unit 2H	0.0	0.0	0.0	14238703.51	1734910.01	39° 12' 37.297 N	80° 39' 59.058 W
Actual BHL Swisher Unit 2H	6955.9	-7882.7	4428.9	14238703.51	1734910.01	39° 12' 37.297 N	80° 39' 59.058 W



Asimuths to Grid North  
True North - 0.21°  
Magnetic North - 8.72°  
Magnetic Field  
Strength: 52331.2anT  
Dip Angle: 66.80°  
Date: 1/27/2013  
Model: IGRF2010





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WV GEOLOGICAL SURVEY  
MORGANTOWN, WV

## **Antero Resources**

**Doddridge County WV  
Josie/Swisher/Union Pad  
Swisher Unit 2H  
Original Wellpath**

**Design: As Drilled**

## **EOW Completion Report**

**09 January, 2014**





**Company:** Antero Resources  
**Project:** Doddridge County WV  
**Site:** Josie/Swisher/Union Pad  
**Well:** Swisher Unit 2H  
**Wellbore:** Original Wellpath  
**Design:** As Drilled

**Local Co-ordinate Reference:** Well Swisher Unit 2H  
**TVD Reference:** Swisher 2H 976 GL + 24 KB @ 1000.0usft  
**MD Reference:** Swisher 2H 976 GL + 24 KB @ 1000.0usft  
**North Reference:** Grid  
**Survey Calculation Method:** Minimum Curvature  
**Database:** Oklahoma District

<b>Project</b>	Doddridge County WV, McClellan District		
<b>Map System:</b>	Universal Transverse Mercator (US Survey Feet)	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	NAD 1927 (NADCON CONUS)		
<b>Map Zone:</b>	Zone 17N (84 W to 78 W)		

**Site** Josie/Swisher/Union Pad

**Site Position:**  
**From:** Map  
**Position Uncertainty:** 2.0 usft

**Northing:** 14,238,711.36 usft  
**Easting:** 1,734,928.40 usft  
**Slot Radius:** 13-3/16"

**Latitude:** 39° 12' 37.374 N  
**Longitude:** 80° 39' 58.824 W  
**Grid Convergence:** 0.21 °

**Well** Swisher Unit 2H, Marcellus

**Well Position** +N/-S 0.0 usft  
 +E/-W 0.0 usft  
**Position Uncertainty** 2.0 usft

**Northing:** 14,238,703.51 usft  
**Easting:** 1,734,910.01 usft  
**Wellhead Elevation:** 1,000.0 usft

**Latitude:** 39° 12' 37.297 N  
**Longitude:** 80° 39' 59.058 W  
**Ground Level:** 976.0 usft

**Wellbore** Original Wellpath

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	9/21/2013	-8.51	66.80	52,331

**Design** As Drilled

**Audit Notes:**

**Version:** 1.0  
**Phase:** ACTUAL  
**Tie On Depth:** 0.0

Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.0	0.0	0.0	162.98

**Survey Program** Date 1/9/2014

From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
100.0	5,618.1	Survey #2 Final Gyro (Original Wellpath)	SDI Standard Keeper	Scientific Drilling Intl. Standard Wireline Keeper
5,755.0	15,941.0	Survey #4 MWD (Original Wellpath)	MWD SDI	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	0.00
100.0	1.67	320.30	100.0	1.1	-0.9	-1.3	1.67
200.0	1.40	329.17	200.0	3.3	-2.5	-3.9	0.36
300.0	0.68	330.23	299.9	4.9	-3.4	-5.6	0.72
400.0	0.44	332.59	399.9	5.7	-3.9	-6.6	0.24
500.0	0.25	344.35	499.9	6.3	-4.1	-7.2	0.20
600.0	0.15	320.31	599.9	6.6	-4.3	-7.5	0.13
700.0	0.09	294.44	699.9	6.7	-4.4	-7.7	0.08
800.0	0.07	329.41	799.9	6.8	-4.5	-7.8	0.05
900.0	0.04	298.83	899.9	6.9	-4.6	-7.9	0.04
1,000.0	0.08	277.09	999.9	6.9	-4.7	-8.0	0.05



EOW Completion Report



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**Design:** As Drilled

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**MD Reference:** Swisher 2H 976 GL + 24 KB @ 1000.0usft  
**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)
1,100.0	0.14	246.68	1,099.9	6.8	-4.9	-8.0	0.08
1,200.0	0.02	134.13	1,199.9	6.8	-5.0	-7.9	0.15
1,300.0	0.04	198.49	1,299.9	6.7	-5.0	-7.9	0.04
1,400.0	0.04	210.74	1,399.9	6.7	-5.0	-7.8	0.01
1,500.0	0.09	39.94	1,499.9	6.7	-5.0	-7.9	0.13
1,600.0	0.08	51.90	1,599.9	6.8	-4.8	-7.9	0.02
1,700.0	0.12	28.49	1,699.9	6.9	-4.7	-8.0	0.06
1,800.0	0.14	51.11	1,799.9	7.1	-4.6	-8.1	0.05
1,900.0	0.10	68.86	1,899.9	7.2	-4.4	-8.2	0.05
2,000.0	0.08	94.40	1,999.9	7.2	-4.3	-8.2	0.04
2,100.0	0.07	136.25	2,099.9	7.2	-4.2	-8.1	0.05
2,200.0	0.04	78.30	2,199.9	7.2	-4.1	-8.0	0.06
2,300.0	0.03	165.53	2,299.9	7.1	-4.0	-8.0	0.05
2,400.0	0.07	309.79	2,399.9	7.2	-4.1	-8.0	0.10
2,500.0	0.05	295.04	2,499.9	7.2	-4.2	-8.1	0.03
2,581.1	0.05	134.95	2,581.0	7.2	-4.2	-8.1	0.12
2,600.0	0.03	159.37	2,599.9	7.2	-4.2	-8.1	0.14
2,700.0	0.76	95.76	2,699.9	7.1	-3.5	-7.8	0.75
2,800.0	3.99	68.27	2,799.8	8.3	0.4	-7.8	3.33
2,900.0	7.97	45.56	2,899.3	14.5	8.6	-11.3	4.56
3,000.0	10.11	47.99	2,998.0	25.2	20.1	-18.2	2.17
3,100.0	11.83	67.26	3,096.2	35.0	36.0	-23.0	4.03
3,200.0	15.23	73.78	3,193.4	42.7	58.1	-23.8	3.72
3,300.0	16.56	83.11	3,289.6	48.1	84.9	-21.1	2.88
3,400.0	17.57	98.23	3,385.3	47.6	114.0	-12.2	4.54
3,500.0	17.54	99.67	3,480.6	42.9	143.8	1.0	0.44
3,600.0	19.22	89.50	3,575.5	40.5	175.1	12.5	3.61
3,700.0	22.52	82.05	3,669.0	43.3	210.5	20.2	4.23
3,800.0	26.62	78.40	3,759.9	50.5	251.5	25.3	4.37
3,900.0	30.05	78.10	3,847.9	60.1	297.9	29.7	3.43
4,000.0	28.43	76.60	3,935.2	70.8	345.6	33.4	1.78
4,100.0	25.45	75.95	4,024.3	81.6	389.6	36.0	2.99
4,200.0	22.84	66.29	4,115.6	94.6	428.2	34.9	4.73
4,300.0	22.38	78.71	4,208.0	106.1	464.7	34.5	4.79
4,400.0	22.24	75.06	4,300.5	114.7	501.6	37.1	1.39
4,500.0	26.54	71.50	4,391.5	126.7	541.1	37.2	4.54
4,600.0	27.99	77.43	4,480.4	138.9	585.2	38.5	3.08
4,700.0	27.15	80.61	4,569.1	147.7	630.7	43.3	1.69
4,800.0	30.25	81.66	4,656.8	155.1	678.1	50.2	3.14
4,900.0	30.38	86.62	4,743.1	160.3	728.3	59.9	2.51
5,000.0	29.12	83.88	4,830.0	164.3	777.7	70.5	1.85
5,100.0	28.43	81.39	4,917.6	170.5	825.4	78.6	1.38
5,200.0	29.52	85.39	5,005.1	176.0	873.5	87.4	2.22
5,300.0	31.41	87.44	5,091.3	179.2	924.1	99.2	2.16

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EOW Completion Report



Company: Antero Resources
Project: Doddridge County WV
Site: Josie/Swisher/Union Pad
Well: Swisher Unit 2H
Wellbore: Original Wellpath
Design: As Drilled

Local Co-ordinate Reference: Well Swisher Unit 2H
TVD Reference: Swisher 2H 976 GL + 24 KB @ 1000.0usft
MD Reference: Swisher 2H 976 GL + 24 KB @ 1000.0usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: Oklahoma District

Survey

Table with 8 columns: MD (usft), Inc (°), Azi (azimuth) (°), TVD (usft), N/S (usft), EW (usft), V. Sec (usft), DLeg (°/100usft). Rows include data for various depths and sections like Middlesex, Burkett, and Tully.



EOW Completion Report



**Company:** Antero Resources  
**Project:** Doddridge County WV  
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**Database:** Oklahoma District

Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	EW (usft)	V. Sec (usft)	DLeg (°/100usft)
7,560.0	74.18	155.73	6,949.3	124.6	1,972.0	458.1	9.18
<b>Marcellus</b>							
7,575.0	75.45	156.27	6,953.2	111.4	1,977.9	472.4	9.18
7,634.0	81.91	158.48	6,964.8	58.0	2,000.2	530.0	11.55
7,640.0	82.47	158.72	6,965.6	52.5	2,002.3	535.9	10.18
7,700.0	88.11	161.08	6,970.6	-3.7	2,022.9	595.6	10.18
7,792.0	90.00	164.92	6,972.1	-91.6	2,049.8	687.6	4.65
7,886.0	89.66	164.91	6,972.4	-182.4	2,074.2	781.5	0.36
7,980.0	89.93	163.79	6,972.7	-272.9	2,099.6	875.5	1.23
8,074.0	90.03	162.98	6,972.7	-363.0	2,126.5	969.5	0.87
8,168.0	89.60	162.86	6,973.0	-452.8	2,154.1	1,063.5	0.47
8,262.0	90.30	161.44	6,973.1	-542.3	2,182.9	1,157.5	1.68
8,356.0	89.50	162.04	6,973.3	-631.5	2,212.3	1,251.4	1.06
8,451.0	90.17	162.12	6,973.5	-721.9	2,241.6	1,346.4	0.71
8,545.0	88.99	161.28	6,974.2	-811.2	2,271.1	1,440.4	1.54
8,639.0	90.57	163.99	6,974.6	-900.9	2,299.1	1,534.4	3.34
8,733.0	89.90	163.15	6,974.2	-991.0	2,325.7	1,628.4	1.14
8,827.0	90.67	162.60	6,973.7	-1,080.9	2,353.4	1,722.4	1.01
8,921.0	90.10	162.29	6,973.1	-1,170.5	2,381.7	1,816.4	0.69
9,016.0	90.17	163.20	6,972.9	-1,261.2	2,409.9	1,911.4	0.96
9,110.0	89.73	162.91	6,973.0	-1,351.1	2,437.3	2,005.4	0.56
9,204.0	89.19	162.92	6,973.9	-1,441.0	2,464.9	2,099.4	0.57
9,295.0	90.67	163.26	6,974.0	-1,528.0	2,491.4	2,190.4	1.67
9,387.0	90.23	162.75	6,973.2	-1,616.0	2,518.3	2,282.4	0.73
9,478.0	89.36	163.24	6,973.6	-1,703.0	2,544.9	2,373.4	1.10
9,570.0	89.80	163.57	6,974.2	-1,791.2	2,571.2	2,465.4	0.60
9,661.0	89.78	165.39	6,974.6	-1,878.9	2,595.5	2,556.3	2.00
9,753.0	90.91	166.69	6,974.0	-1,968.2	2,617.7	2,648.2	1.87
9,844.0	89.40	163.58	6,973.8	-2,056.1	2,641.1	2,739.1	3.80
9,936.0	89.87	164.74	6,974.4	-2,144.6	2,666.2	2,831.1	1.36
10,027.0	89.40	164.63	6,974.9	-2,232.4	2,690.2	2,922.0	0.53
10,119.0	89.43	161.12	6,975.9	-2,320.3	2,717.3	3,014.0	3.82
10,210.0	89.16	159.99	6,977.0	-2,406.1	2,747.6	3,104.9	1.28
10,302.0	90.10	161.79	6,977.6	-2,493.0	2,777.7	3,196.9	2.21
10,396.0	90.03	161.44	6,977.5	-2,582.2	2,807.3	3,290.8	0.38
10,490.0	91.44	161.51	6,976.3	-2,671.3	2,837.2	3,384.8	1.50
10,584.0	90.94	161.95	6,974.3	-2,760.6	2,866.7	3,478.7	0.71
10,678.0	90.71	163.32	6,973.0	-2,850.3	2,894.7	3,572.7	1.48
10,772.0	90.40	161.57	6,972.1	-2,939.9	2,923.1	3,666.7	1.89
10,866.0	90.24	162.41	6,971.5	-3,029.3	2,952.1	3,760.7	0.91
10,960.0	90.50	164.44	6,970.9	-3,119.4	2,978.9	3,854.7	2.18
11,054.0	89.83	164.52	6,970.7	-3,209.9	3,004.1	3,948.7	0.72
11,149.0	90.87	164.21	6,970.1	-3,301.4	3,029.7	4,043.6	1.14
11,243.0	90.34	164.83	6,969.1	-3,392.0	3,054.8	4,137.6	0.87
11,337.0	89.80	161.38	6,969.0	-3,481.9	3,082.1	4,231.6	3.71

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EOW Completion Report



<b>Company:</b>	Antero Resources	<b>Local Co-ordinate Reference:</b>	Well Swisher Unit 2H
<b>Project:</b>	Doddridge County WV	<b>TVD Reference:</b>	Swisher 2H 976 GL + 24 KB @ 1000.0usft
<b>Site:</b>	Josie/Swisher/Union Pad	<b>MD Reference:</b>	Swisher 2H 976 GL + 24 KB @ 1000.0usft
<b>Well:</b>	Swisher Unit 2H	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	Original Wellpath	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	As Drilled	<b>Database:</b>	Oklahoma District

Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	EW (usft)	V. Sec (usft)	DLeg (°/100usft)
11,432.0	89.73	161.72	6,969.4	-3,572.0	3,112.2	4,326.5	0.37
11,526.0	89.87	161.83	6,969.7	-3,661.3	3,141.6	4,420.5	0.19
11,619.0	89.56	161.80	6,970.2	-3,749.7	3,170.6	4,513.5	0.33
11,713.0	90.00	162.44	6,970.5	-3,839.1	3,199.4	4,607.5	0.83
11,807.0	90.37	162.87	6,970.2	-3,928.9	3,227.5	4,701.5	0.60
11,902.0	89.80	162.78	6,970.1	-4,019.6	3,255.5	4,796.5	0.61
11,997.0	90.48	162.67	6,969.8	-4,110.3	3,283.7	4,891.5	0.73
12,091.0	90.10	163.70	6,969.4	-4,200.3	3,310.9	4,985.5	1.17
12,185.0	89.13	163.06	6,970.0	-4,290.4	3,337.8	5,079.5	1.24
12,279.0	90.37	163.35	6,970.4	-4,380.4	3,365.0	5,173.5	1.35
12,373.0	89.63	162.74	6,970.4	-4,470.3	3,392.4	5,267.5	1.02
12,467.0	90.13	163.39	6,970.6	-4,560.2	3,419.8	5,361.5	0.87
12,561.0	89.76	163.29	6,970.7	-4,650.3	3,446.7	5,455.5	0.41
12,655.0	89.36	163.91	6,971.4	-4,740.4	3,473.3	5,549.5	0.78
12,749.0	90.60	163.09	6,971.4	-4,830.6	3,499.9	5,643.5	1.58
12,843.0	90.77	162.69	6,970.3	-4,920.4	3,527.6	5,737.4	0.46
12,938.0	87.31	162.05	6,971.9	-5,010.9	3,556.4	5,832.4	3.70
13,032.0	87.55	161.71	6,976.1	-5,100.2	3,585.6	5,926.3	0.44
13,125.0	89.46	162.60	6,978.6	-5,188.6	3,614.1	6,019.3	2.27
13,220.0	89.87	163.66	6,979.1	-5,279.6	3,641.6	6,114.3	1.20
13,313.0	88.89	164.48	6,980.1	-5,369.0	3,667.2	6,207.2	1.37
13,407.0	90.47	164.98	6,980.6	-5,459.7	3,691.9	6,301.2	1.76
13,501.0	89.70	162.56	6,980.5	-5,549.9	3,718.2	6,395.2	2.70
13,595.0	90.37	162.77	6,980.4	-5,639.6	3,746.2	6,489.2	0.75
13,690.0	90.24	162.72	6,979.9	-5,730.4	3,774.4	6,584.2	0.15
13,784.0	90.31	163.90	6,979.5	-5,820.4	3,801.4	6,678.2	1.26
13,878.0	91.04	163.93	6,978.4	-5,910.7	3,827.4	6,772.1	0.78
13,972.0	90.48	163.19	6,977.1	-6,000.9	3,854.0	6,866.1	0.99
14,066.0	89.74	162.04	6,977.0	-6,090.6	3,882.1	6,960.1	1.45
14,160.0	90.27	161.50	6,976.9	-6,179.8	3,911.5	7,054.1	0.80
14,254.0	90.03	159.75	6,976.7	-6,268.5	3,942.7	7,148.0	1.88
14,349.0	90.40	161.60	6,976.3	-6,358.2	3,974.1	7,242.9	1.99
14,443.0	91.08	162.34	6,975.1	-6,447.5	4,003.2	7,336.9	1.07
14,536.0	90.23	160.46	6,974.1	-6,535.7	4,032.9	7,429.9	2.22
14,631.0	91.21	165.22	6,972.9	-6,626.4	4,060.9	7,524.8	5.12
14,725.0	92.05	165.74	6,970.2	-6,717.4	4,084.4	7,618.7	1.05
14,819.0	91.38	164.80	6,967.4	-6,808.2	4,108.3	7,712.6	1.23
14,913.0	90.84	163.08	6,965.6	-6,898.5	4,134.3	7,806.5	1.92
15,007.0	90.54	162.56	6,964.4	-6,988.3	4,162.1	7,900.5	0.64
15,101.0	91.04	161.44	6,963.1	-7,077.7	4,191.1	7,994.5	1.30
15,196.0	90.30	159.91	6,962.0	-7,167.4	4,222.6	8,089.4	1.79
15,290.0	92.86	163.63	6,959.4	-7,256.6	4,252.0	8,183.3	4.80
15,384.0	91.07	165.61	6,956.2	-7,347.2	4,276.9	8,277.2	2.84
15,478.0	90.40	166.06	6,955.0	-7,438.3	4,299.9	8,371.1	0.86



**Company:** Antero Resources  
**Project:** Doddridge County WV  
**Site:** Josie/Swisher/Union Pad  
**Well:** Swisher Unit 2H  
**Wellbore:** Original Wellpath  
**Design:** As Drilled

**Local Co-ordinate Reference:** Well Swisher Unit 2H  
**TVD Reference:** Swisher 2H 976 GL + 24 KB @ 1000.0usft  
**MD Reference:** Swisher 2H 976 GL + 24 KB @ 1000.0usft  
**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)
15,573.0	90.37	166.62	6,954.4	-7,530.6	4,322.3	8,465.9	0.59
15,666.0	89.87	164.05	6,954.2	-7,620.6	4,345.9	8,558.9	2.82
15,760.0	89.63	162.91	6,954.6	-7,710.7	4,372.6	8,652.9	1.24
15,886.0	89.43	160.81	6,955.6	-7,830.4	4,411.8	8,778.8	1.67
15,941.0	90.00	162.98	6,955.9	-7,882.7	4,428.9	8,833.8	4.08

Design Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
7,104.0	6,673.6	386.4	1,751.5	Middlesex
7,291.0	6,815.2	319.5	1,851.7	Burkett
7,341.0	6,848.3	291.0	1,876.0	Tully
7,560.0	6,949.3	124.6	1,972.0	Marcellus

Checked By: \_\_\_\_\_ Approved By: \_\_\_\_\_ Date: \_\_\_\_\_

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