



Project: Heather Prospect (NAD 27)  
 Site: Mills-Wetzel Pad 3  
 Well: Mills-Wetzel 19H  
 Wellbore: OH  
 Design: As Drilled



WELL DETAILS: Mills-Wetzel 19H

+N/S +E/W Northing Easting  
 0.00 0.00 370004.53 1669013.64  
 29° 30' 35.807" N 80° 40' 23.282" W

REFERENCE INFORMATION

Co-ordinate (N/E) Reference: Well Mills-Wetzel 19H - Slot MW3#19H Grid North  
 Vertical (V/D) Reference: GL 1291 & KD 18 @ 1309.00ft (Sixson 141)  
 Section (V/S) Reference: Slot - MW3#19H(0.00N; 0.00E)  
 Measured Depth Reference: GL 1291 & KD 18 @ 1309.00ft (Sixson 141)  
 Calculation Method: Minimum Curvature

PROJECT DETAILS: Heather Prospect (NAD 27)

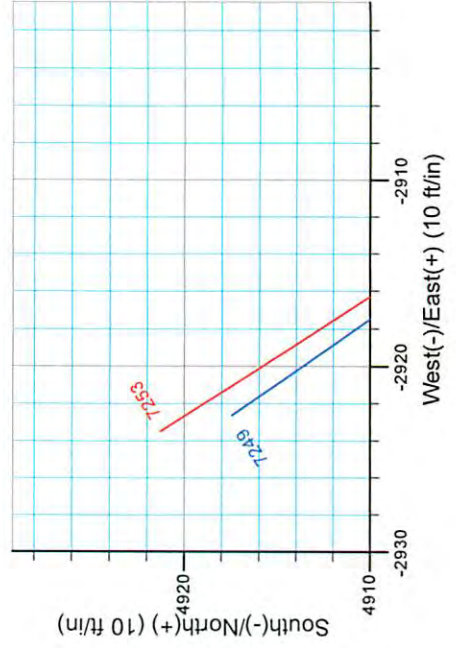
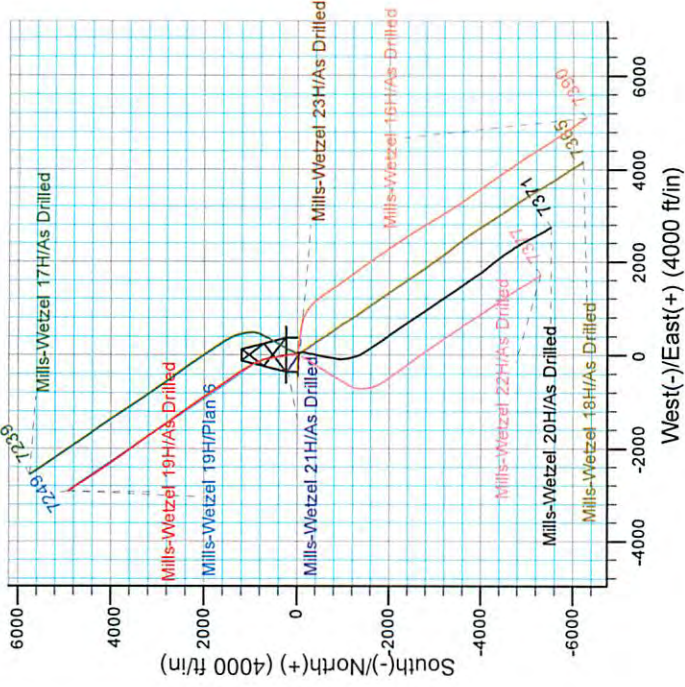
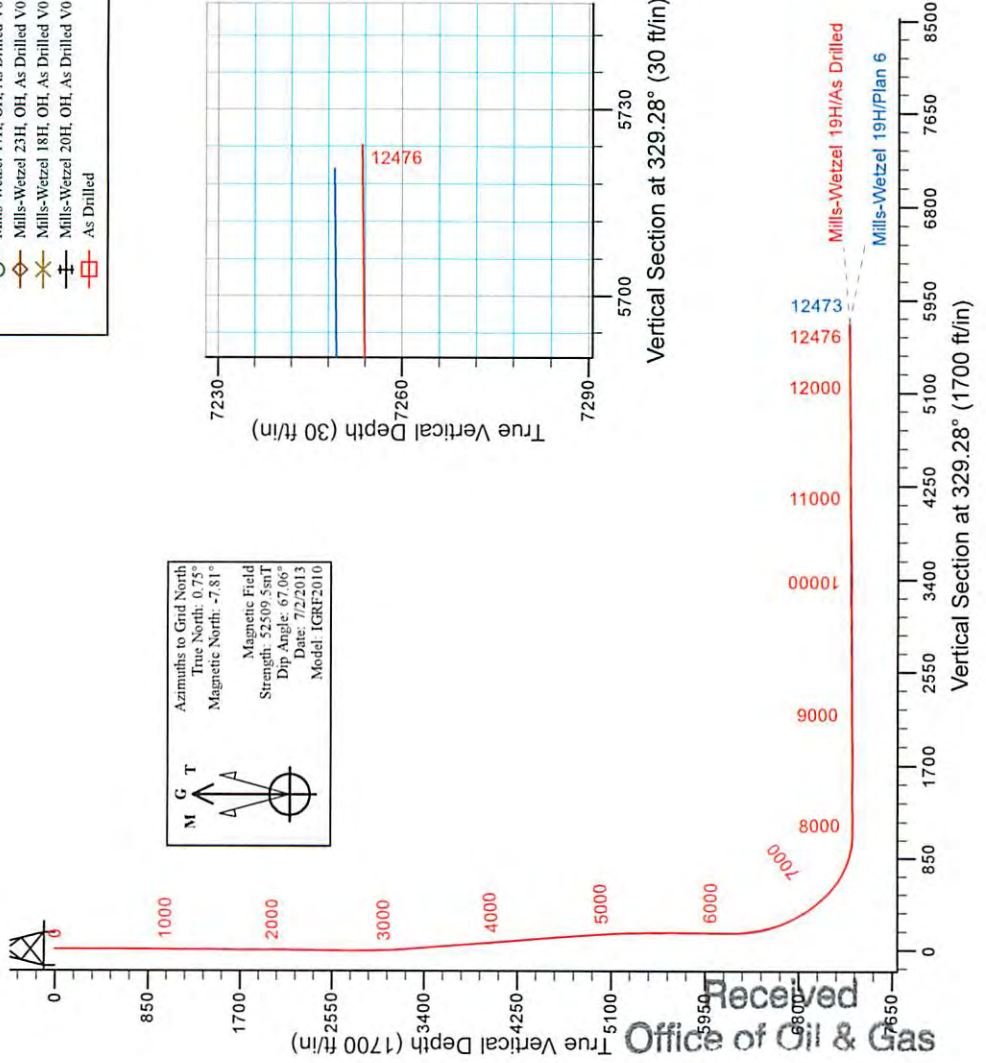
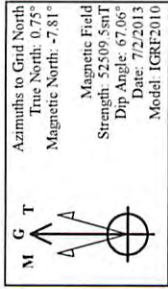
Geodetic System: US State Plane 1927 (Exact solution)  
 Datum: NAD 1927 (NADCON CONUS)  
 Ellipsoid: Clarke 1866  
 Zone: West Virginia North 4701  
 System Datum: Mean Sea Level

SECTION DETAILS

Sec	MD	Inc	Azi	+N-S	+E-W	Dleg	TFace	VSect	Target
16127.18	0.79	139.99	6119.15	177.43	2.68	0.00	0.00	151.16	
26227.18	0.00	0.00	6219.15	176.90	3.12	0.79	180.00	150.48	
37285.78	54.00	349.29	7127.84	631.84	-82.90	5.10	349.29	585.50	
47819.74	90.50	325.45	7290.00	1085.14	-283.83	8.00	-36.58	1077.84	MW19H_LP3
E2472.89	90.50	325.45	7249.00	4917.48	-2922.65	0.00	0.00	6720.44	MW19H_BHL3

LEGEND

- Mills-Wetzel 16H, OH, As Drilled V0
- Mills-Wetzel 19H, OH, Plan 6 V0
- Mills-Wetzel 21H, OH, As Drilled V0
- Mills-Wetzel 22H, OH, As Drilled V0
- Mills-Wetzel 17H, OH, As Drilled V0
- Mills-Wetzel 23H, OH, As Drilled V0
- Mills-Wetzel 18H, OH, As Drilled V0
- Mills-Wetzel 20H, OH, As Drilled V0
- As Drilled



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## Stone Energy

Heather Prospect (NAD 27)

Mills-Wetzel Pad 3

Mills-Wetzel 19H - Slot MW3#19H

OH

Design: As Drilled

## Standard Survey Report

22 July, 2013



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Survey Report



<b>Company:</b>	Stone Energy	<b>Local Co-ordinate Reference:</b>	Well Mills-Wetzel 19H - Slot MW3#19H
<b>Project:</b>	Heather Prospect (NAD 27)	<b>TVD Reference:</b>	GL 1291' & KB 18' @ 1309.00ft (Saxon 141)
<b>Site:</b>	Mills-Wetzel Pad 3	<b>MD Reference:</b>	GL 1291' & KB 18' @ 1309.00ft (Saxon 141)
<b>Well:</b>	Mills-Wetzel 19H	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	OH	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	As Drilled	<b>Database:</b>	Northeast District

<b>Project</b>	Heather Prospect (NAD 27), Wetzel County, West Virginia		
<b>Map System:</b>	US State Plane 1927 (Exact solution)	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	NAD 1927 (NADCON CONUS)		
<b>Map Zone:</b>	West Virginia North 4701		

<b>Site</b>	Mills-Wetzel Pad 3				
<b>Site Position:</b>		<b>Northing:</b>	370,004.38 usft	<b>Latitude:</b>	39° 30' 35.809 N
<b>From:</b>	Map	<b>Easting:</b>	1,669,041.12 usft	<b>Longitude:</b>	80° 40' 22.931 W
<b>Position Uncertainty:</b>	0.00 ft	<b>Slot Radius:</b>	13-3/16 "	<b>Grid Convergence:</b>	-0.75 °

<b>Well</b>	Mills-Wetzel 19H - Slot MW3#19H					
<b>Well Position</b>	<b>+N/-S</b>	0.00 ft	<b>Northing:</b>	370,004.53 usft	<b>Latitude:</b>	39° 30' 35.807 N
	<b>+E/-W</b>	0.00 ft	<b>Easting:</b>	1,669,013.64 usft	<b>Longitude:</b>	80° 40' 23.282 W
<b>Position Uncertainty</b>		0.00 ft	<b>Wellhead Elevation:</b>	ft	<b>Ground Level:</b>	1,291.00 ft

<b>Wellbore</b>	OH				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2010	4/4/2013	-8.55	67.08	52,539
	IGRF2010	7/2/2013	-8.56	67.06	52,510

<b>Design</b>	As Drilled				
<b>Audit Notes:</b>					
<b>Version:</b>	1.0	<b>Phase:</b>	ACTUAL	<b>Tie On Depth:</b>	0.00
<b>Vertical Section:</b>	<b>Depth From (TVD) (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Direction (°)</b>	
	0.00	0.00	0.00		329.28

<b>Survey Program</b>	<b>Date</b>	7/22/2013			
<b>From (ft)</b>	<b>To (ft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>	
18.00	6,127.18	Survey #4 - Gyro (OH)	SDI Standard Keeper 103	SDI Standard Wireline Keeper ver 1.0.3	
6,174.00	12,476.00	Survey 5 - MWD (OH)	MWD SDI	MWD - Standard ver 1.0.1	

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
18.00	0.00	360.00	18.00	0.00	0.00	0.00	0.00	0.00	0.00	
<b>Ground Level</b>										
103.00	0.24	148.87	103.00	-0.15	0.09	-0.18	0.28	0.28	0.00	
<b>First SDI Gyro Survey</b>										
203.00	0.11	142.11	203.00	-0.41	0.26	-0.48	0.13	0.04	-6.76	
303.00	0.08	161.15	303.00	-0.55	0.34	-0.65	0.04	-0.03	19.04	
403.00	0.24	127.90	403.00	-0.74	0.53	-0.91	0.18	0.16	-33.25	

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## Survey Report



<b>Company:</b>	Stone Energy	<b>Local Co-ordinate Reference:</b>	Well Mills-Wetzel 19H - Slot MW3#19H
<b>Project:</b>	Heather Prospect (NAD 27)	<b>TVD Reference:</b>	GL 1291' & KB 18' @ 1309.00ft (Saxon 141)
<b>Site:</b>	Mills-Wetzel Pad 3	<b>MD Reference:</b>	GL 1291' & KB 18' @ 1309.00ft (Saxon 141)
<b>Well:</b>	Mills-Wetzel 19H	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	OH	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	As Drilled	<b>Database:</b>	Northeast District

### Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
503.00	0.24	136.19	503.00	-1.02	0.84	-1.31	0.03	0.00	8.29
603.00	0.11	153.97	603.00	-1.26	1.03	-1.61	0.14	-0.13	17.78
703.00	0.25	129.06	703.00	-1.48	1.24	-1.91	0.16	0.14	-24.91
803.00	0.19	144.43	803.00	-1.76	1.50	-2.28	0.08	-0.06	15.37
903.00	0.23	156.68	903.00	-2.08	1.68	-2.64	0.06	0.04	12.25
1,003.00	0.33	127.11	1,002.99	-2.43	1.99	-3.11	0.17	0.10	-29.57
1,103.00	0.27	127.82	1,102.99	-2.75	2.40	-3.59	0.06	-0.06	0.71
1,203.00	0.44	136.22	1,202.99	-3.17	2.86	-4.19	0.18	0.17	8.40
1,303.00	0.37	65.51	1,302.99	-3.32	3.42	-4.60	0.47	-0.07	-70.71
1,403.00	0.50	121.10	1,402.99	-3.41	4.08	-5.02	0.42	0.13	55.59
1,503.00	0.57	121.61	1,502.98	-3.90	4.88	-5.84	0.07	0.07	0.51
1,603.00	0.57	116.72	1,602.98	-4.38	5.75	-6.70	0.05	0.00	-4.89
1,703.00	0.46	158.42	1,702.97	-4.98	6.34	-7.52	0.38	-0.11	41.70
1,803.00	0.47	159.53	1,802.97	-5.73	6.63	-8.32	0.01	0.01	1.11
1,903.00	0.39	172.55	1,902.97	-6.46	6.82	-9.03	0.13	-0.08	13.02
2,003.00	0.22	246.73	2,002.97	-6.87	6.69	-9.32	0.39	-0.17	74.18
2,103.00	0.28	211.63	2,102.97	-7.15	6.38	-9.41	0.16	0.06	-35.10
2,203.00	0.83	97.53	2,202.96	-7.46	6.97	-9.97	0.98	0.55	-114.10
2,303.00	0.88	91.30	2,302.95	-7.57	8.46	-10.83	0.11	0.05	-6.23
2,403.00	1.05	93.15	2,402.94	-7.64	10.14	-11.75	0.17	0.17	1.85
2,503.00	1.05	88.55	2,502.92	-7.66	11.97	-12.70	0.08	0.00	-4.60
2,603.00	0.92	86.01	2,602.91	-7.58	13.69	-13.51	0.14	-0.13	-2.54
2,703.00	1.01	78.06	2,702.89	-7.35	15.35	-14.16	0.16	0.09	-7.95
2,803.00	0.96	56.22	2,802.88	-6.70	16.91	-14.40	0.38	-0.05	-21.84
2,903.00	1.31	13.01	2,902.86	-5.12	17.86	-13.53	0.90	0.35	-43.21
3,003.00	1.64	4.43	3,002.83	-2.58	18.23	-11.53	0.40	0.33	-8.58
3,103.00	2.72	348.67	3,102.75	1.18	17.88	-8.12	1.23	1.08	-15.76
3,203.00	4.17	344.24	3,202.57	7.00	16.42	-2.37	1.47	1.45	-4.43
3,303.00	4.39	341.45	3,302.29	14.13	14.22	4.88	0.30	0.22	-2.79
3,403.00	4.76	339.05	3,401.97	21.63	11.52	12.71	0.42	0.37	-2.40
3,503.00	5.18	341.26	3,501.60	29.78	8.58	21.22	0.46	0.42	2.21
3,603.00	5.40	340.86	3,601.17	38.50	5.59	30.24	0.22	0.22	-0.40
3,703.00	4.59	333.57	3,700.79	46.53	2.26	38.84	1.03	-0.81	-7.29
3,803.00	4.29	346.06	3,800.49	53.74	-0.42	46.41	1.01	-0.30	12.49
3,903.00	4.21	5.01	3,900.22	61.03	-1.00	52.97	1.40	-0.08	18.95
4,003.00	5.08	5.09	3,999.89	69.10	-0.28	59.54	0.87	0.87	0.08
4,103.00	5.78	5.56	4,099.44	78.52	0.60	67.19	0.70	0.70	0.47
4,203.00	5.75	3.15	4,198.94	88.53	1.36	75.41	0.24	-0.03	-2.41
4,303.00	5.78	359.45	4,298.43	98.57	1.59	83.92	0.37	0.03	-3.70
4,403.00	5.80	357.57	4,397.92	108.65	1.32	92.73	0.19	0.02	-1.88
4,503.00	5.47	354.44	4,497.44	118.45	0.65	101.49	0.45	-0.63	-1.23
4,603.00	5.01	4.23	4,597.02	127.54	0.51	109.38	1.00	0.46	9.79
4,703.00	5.08	3.03	4,696.64	136.32	1.06	116.64	0.13	0.07	-1.20
4,803.00	5.58	4.26	4,796.20	145.59	1.66	124.31	0.51	0.69	1.23

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<b>Well:</b>	Mills-Wetzel 19H	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	OH	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	As Drilled	<b>Database:</b>	Northeast District

Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
4,903.00	5.65	3.79	4,895.72	155.35	2.35	132.35	0.08	0.07	-0.47
5,003.00	4.16	359.85	4,995.35	163.89	2.66	139.52	1.53	-1.49	-3.94
5,103.00	3.42	352.37	5,095.14	170.47	2.26	145.39	0.89	-0.74	-7.48
5,203.00	1.81	351.82	5,195.03	174.99	1.64	149.59	1.61	-1.61	-0.55
5,303.00	0.69	352.29	5,295.00	177.15	1.33	151.61	1.12	-1.12	0.47
5,403.00	0.67	358.30	5,395.00	178.33	1.23	152.67	0.07	-0.02	6.01
5,503.00	0.53	357.59	5,494.99	179.38	1.19	153.59	0.14	-0.14	-0.71
5,603.00	0.18	358.88	5,594.99	180.00	1.17	154.13	0.35	-0.35	1.29
5,703.00	0.02	90.49	5,694.99	180.16	1.19	154.26	0.18	-0.16	91.61
5,803.00	0.23	129.95	5,794.99	180.03	1.36	154.06	0.21	0.21	39.46
5,903.00	0.20	125.25	5,894.99	179.80	1.65	153.71	0.03	-0.03	-4.70
6,003.00	0.67	158.87	5,994.98	179.15	2.01	152.98	0.52	0.47	33.62
6,103.00	1.02	161.52	6,094.97	177.76	2.50	151.53	0.35	0.35	2.65
6,127.18	0.79	139.99	6,119.15	177.43	2.68	151.16	1.68	-0.95	-89.04
<b>Last SDI Gyro Survey</b>									
6,174.00	1.07	157.46	6,165.96	176.78	3.05	150.41	0.84	0.60	37.31
<b>First SDI MWD Survey</b>									
6,205.00	0.95	155.70	6,196.96	176.28	3.27	149.86	0.40	-0.39	-5.68
6,235.00	0.27	1.07	6,226.96	176.12	3.37	149.68	4.00	-2.27	-515.43
6,266.00	2.29	345.99	6,257.95	176.80	3.22	150.33	6.55	6.52	-48.65
6,296.00	4.49	342.26	6,287.89	178.50	2.72	152.05	7.37	7.33	-12.43
6,327.00	6.68	341.38	6,318.75	181.36	1.77	155.00	7.07	7.06	-2.84
6,357.00	8.25	343.14	6,348.49	185.07	0.59	158.79	5.29	5.23	5.87
6,387.00	9.38	345.86	6,378.14	189.50	-0.63	163.23	4.01	3.77	9.07
6,417.00	10.39	346.84	6,407.69	194.51	-1.84	168.15	3.41	3.37	3.27
6,447.00	11.65	346.22	6,437.14	200.09	-3.18	173.62	4.22	4.20	-2.07
6,478.00	13.17	346.19	6,467.41	206.56	-4.77	180.00	4.90	4.90	-0.10
6,508.00	14.07	347.40	6,496.57	213.43	-6.38	186.73	3.15	3.00	4.03
6,538.00	14.89	347.98	6,525.61	220.76	-7.98	193.85	2.78	2.73	1.93
6,568.00	15.99	347.99	6,554.53	228.57	-9.64	201.41	3.67	3.67	0.03
6,598.00	17.49	346.80	6,583.26	237.01	-11.53	209.63	5.13	5.00	-3.97
6,628.00	19.27	346.09	6,611.73	246.20	-13.75	218.67	5.98	5.93	-2.37
6,657.00	21.47	346.73	6,638.91	256.01	-16.12	228.31	7.62	7.59	2.21
6,689.00	23.77	347.40	6,668.45	268.01	-18.87	240.03	7.23	7.19	2.09
6,721.00	25.85	347.66	6,697.49	281.12	-21.77	252.78	6.51	6.50	0.81
6,752.00	26.90	347.31	6,725.27	294.56	-24.75	265.86	3.42	3.39	-1.13
6,784.00	28.14	347.17	6,753.64	308.98	-28.02	279.93	3.88	3.88	-0.44
6,816.00	29.86	348.20	6,781.63	324.14	-31.32	294.64	5.60	5.38	3.22
6,847.00	31.87	349.62	6,808.24	339.74	-34.38	309.62	6.90	6.73	1.58
6,879.00	33.80	350.52	6,835.13	356.83	-37.36	325.84	6.22	6.03	2.81
6,910.00	35.36	350.53	6,860.65	374.19	-40.26	342.23	5.03	5.03	0.03
6,942.00	36.79	351.06	6,886.51	392.79	-43.27	359.76	4.57	4.47	1.66
6,974.00	38.35	351.22	6,911.88	412.07	-46.28	377.87	4.88	4.88	0.50

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<b>Wellbore:</b>	OH	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	As Drilled	<b>Database:</b>	Northeast District

Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
7,006.00	39.57	351.39	6,936.76	431.96	-49.32	396.52	3.83	3.81	0.53
7,037.00	41.09	350.74	6,960.39	451.77	-52.44	415.15	5.09	4.90	-2.10
7,069.00	42.63	350.33	6,984.22	472.84	-55.95	435.05	4.89	4.81	-1.28
7,101.00	44.63	350.23	7,007.38	494.60	-59.68	455.66	6.25	6.25	-0.31
7,133.00	45.83	349.93	7,029.92	516.98	-63.59	476.90	3.81	3.75	-0.94
7,164.00	47.81	349.75	7,051.13	539.23	-67.58	498.06	6.40	6.39	-0.58
7,196.00	49.91	349.69	7,072.18	562.94	-71.88	520.64	6.56	6.56	-0.19
7,228.00	51.82	349.84	7,092.38	587.36	-76.29	543.89	5.98	5.97	0.47
7,260.00	52.76	349.34	7,111.95	612.26	-80.87	567.63	3.19	2.94	-1.56
7,291.00	54.03	348.82	7,130.44	636.69	-85.58	591.05	4.31	4.10	-1.68
7,322.00	56.25	346.76	7,148.15	661.55	-90.97	615.17	9.00	7.16	-6.65
7,354.00	58.51	344.61	7,165.40	687.66	-97.63	641.02	9.05	7.06	-6.72
7,385.00	60.17	343.08	7,181.21	713.27	-105.06	666.83	6.83	5.35	-4.94
7,417.00	62.45	341.54	7,196.58	740.01	-113.59	694.17	8.28	7.13	-4.81
7,449.00	65.05	340.47	7,210.73	767.14	-122.93	722.27	8.66	8.13	-3.34
7,480.00	67.42	339.23	7,223.22	793.78	-132.71	750.16	8.48	7.65	-4.00
7,511.00	69.74	338.20	7,234.54	820.66	-143.18	778.62	8.10	7.48	-3.32
7,542.00	71.79	337.45	7,244.75	847.77	-154.23	807.57	7.00	6.61	-2.42
7,573.00	73.52	336.36	7,253.99	874.98	-165.84	836.89	6.51	5.58	-3.52
7,605.00	75.60	334.97	7,262.51	903.08	-178.55	867.54	7.73	6.50	-4.34
7,636.00	78.23	333.03	7,269.53	930.22	-191.79	897.63	10.45	8.48	-6.26
7,668.00	79.94	332.08	7,275.59	958.10	-206.27	929.00	6.09	5.34	-2.97
7,700.00	81.46	331.69	7,280.76	985.95	-221.15	960.55	4.90	4.75	-1.22
7,732.00	83.46	330.72	7,284.96	1,013.75	-236.43	992.25	6.93	6.25	-3.03
7,763.00	85.83	329.15	7,287.85	1,040.46	-251.89	1,023.11	9.16	7.65	-5.06
7,795.00	87.01	328.30	7,289.85	1,067.76	-268.47	1,055.04	4.54	3.69	-2.66
7,827.00	88.35	328.69	7,291.15	1,095.02	-285.18	1,087.01	4.36	4.19	1.22
7,859.00	90.71	328.10	7,291.41	1,122.27	-301.95	1,119.01	7.60	7.38	-1.84
7,890.00	91.11	326.99	7,290.92	1,148.42	-318.58	1,149.99	3.81	1.29	-3.58
7,922.00	92.52	328.15	7,289.90	1,175.42	-335.73	1,181.96	5.70	4.41	3.63
7,985.00	91.38	326.92	7,287.76	1,228.54	-369.53	1,244.89	2.66	-1.81	-1.95
8,048.00	91.18	326.73	7,286.35	1,281.26	-404.00	1,307.82	0.44	-0.32	-0.30
8,111.00	91.01	326.36	7,285.15	1,333.81	-438.72	1,370.73	0.65	-0.27	-0.59
8,174.00	89.56	325.58	7,284.84	1,386.02	-473.98	1,433.63	2.61	-2.30	-1.24
8,238.00	88.86	325.06	7,285.72	1,438.64	-510.39	1,497.47	1.36	-1.09	-0.81
8,301.00	90.13	325.01	7,286.27	1,490.27	-546.49	1,560.29	2.02	2.02	-0.08
8,365.00	90.57	325.26	7,285.88	1,542.78	-583.07	1,624.12	0.79	0.69	0.39
8,428.00	90.34	325.48	7,285.38	1,594.62	-618.87	1,686.97	0.51	-0.37	0.35
8,492.00	90.13	325.44	7,285.12	1,647.33	-655.16	1,750.83	0.33	-0.33	-0.06
8,555.00	90.57	325.22	7,284.74	1,699.15	-691.00	1,813.68	0.78	0.78	0.78
8,618.00	91.01	325.86	7,283.87	1,751.09	-726.64	1,876.54	1.23	0.70	1.02
8,682.00	90.87	326.32	7,282.82	1,804.19	-762.34	1,940.43	0.75	-0.22	0.72
8,745.00	89.53	326.23	7,282.60	1,856.59	-797.32	2,003.34	2.13	-2.13	0.14
8,808.00	88.82	325.26	7,283.50	1,908.65	-832.77	2,066.22	1.91	-1.13	-1.54

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Survey Report



<b>Company:</b>	Stone Energy	<b>Local Co-ordinate Reference:</b>	Well Mills-Wetzel 19H - Slot MW3#19H
<b>Project:</b>	Heather Prospect (NAD 27)	<b>TVD Reference:</b>	GL 1291' & KB 18' @ 1309.00ft (Saxon 141)
<b>Site:</b>	Mills-Wetzel Pad 3	<b>MD Reference:</b>	GL 1291' & KB 18' @ 1309.00ft (Saxon 141)
<b>Well:</b>	Mills-Wetzel 19H	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	OH	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	As Drilled	<b>Database:</b>	Northeast District

Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
8,871.00	89.66	325.57	7,284.34	1,960.52	-868.53	2,129.07	1.42	1.33	0.49
8,935.00	90.47	325.30	7,284.27	2,013.22	-904.84	2,192.92	1.33	1.27	-0.42
8,998.00	90.44	325.06	7,283.77	2,064.94	-940.81	2,255.76	0.38	-0.05	-0.38
9,062.00	90.34	325.26	7,283.33	2,117.46	-977.37	2,319.59	0.35	-0.16	0.31
9,125.00	90.27	325.16	7,283.00	2,169.20	-1,013.32	2,382.43	0.19	-0.11	-0.16
9,189.00	89.97	325.69	7,282.86	2,221.90	-1,049.64	2,446.29	0.95	-0.47	0.83
9,252.00	91.11	325.34	7,282.27	2,273.82	-1,085.31	2,509.15	1.89	1.81	-0.56
9,315.00	91.01	325.26	7,281.10	2,325.61	-1,121.16	2,571.99	0.20	-0.16	-0.13
9,379.00	90.10	325.04	7,280.48	2,378.13	-1,157.73	2,635.82	1.46	-1.42	-0.34
9,442.00	90.17	325.10	7,280.33	2,429.78	-1,193.81	2,698.65	0.15	0.11	0.10
9,506.00	90.54	325.18	7,279.94	2,482.29	-1,230.39	2,762.48	0.59	0.58	0.13
9,569.00	91.58	325.23	7,278.77	2,534.02	-1,266.33	2,825.31	1.65	1.65	0.08
9,633.00	89.90	324.65	7,277.95	2,586.40	-1,303.09	2,889.12	2.78	-2.63	-0.91
9,696.00	90.71	324.21	7,277.61	2,637.64	-1,339.73	2,951.89	1.46	1.29	-0.70
9,759.00	91.44	324.55	7,276.43	2,688.85	-1,376.42	3,014.65	1.28	1.16	0.54
9,822.00	90.98	324.53	7,275.10	2,740.15	-1,412.96	3,077.42	0.73	-0.73	-0.03
9,885.00	88.52	324.66	7,275.37	2,791.50	-1,449.46	3,140.21	3.91	-3.90	0.21
9,949.00	89.06	324.88	7,276.72	2,843.76	-1,486.37	3,203.99	0.91	0.84	0.34
10,012.00	89.53	325.18	7,277.50	2,895.38	-1,522.47	3,266.82	0.89	0.75	0.48
10,076.00	89.80	324.29	7,277.87	2,947.64	-1,559.42	3,330.61	1.45	0.42	-1.39
10,108.00	90.67	324.23	7,277.74	2,973.61	-1,578.11	3,362.49	2.73	2.72	-0.19
10,140.00	90.30	323.86	7,277.47	2,999.51	-1,596.90	3,394.36	1.64	-1.16	-1.16
10,172.00	91.34	324.13	7,277.01	3,025.40	-1,615.71	3,426.22	3.36	3.25	0.84
10,203.00	91.78	324.06	7,276.17	3,050.50	-1,633.88	3,457.08	1.44	1.42	-0.23
10,235.00	91.88	323.75	7,275.15	3,076.34	-1,652.73	3,488.92	1.02	0.31	-0.97
10,267.00	90.64	323.22	7,274.44	3,102.05	-1,671.76	3,520.75	4.21	-3.88	-1.66
10,330.00	90.47	323.61	7,273.83	3,152.64	-1,709.31	3,583.42	0.68	-0.27	0.62
10,362.00	91.01	324.02	7,273.42	3,178.46	-1,728.20	3,615.27	2.12	1.69	1.28
10,393.00	91.61	324.01	7,272.71	3,203.54	-1,746.41	3,646.13	1.94	1.94	-0.03
10,425.00	92.15	323.92	7,271.66	3,229.40	-1,765.22	3,677.98	1.71	1.69	-0.28
10,457.00	91.38	324.14	7,270.68	3,255.29	-1,784.01	3,709.83	2.50	-2.41	0.69
10,520.00	90.64	325.18	7,269.57	3,306.67	-1,820.45	3,772.61	2.03	-1.17	1.65
10,583.00	91.18	325.10	7,268.57	3,358.36	-1,856.45	3,835.44	0.87	0.86	-0.13
10,647.00	91.11	325.30	7,267.29	3,410.90	-1,892.97	3,899.26	0.33	-0.11	0.31
10,711.00	90.34	325.49	7,266.48	3,463.58	-1,929.31	3,963.11	1.24	-1.20	0.30
10,774.00	90.24	325.46	7,266.16	3,515.48	-1,965.02	4,025.97	0.17	-0.16	-0.05
10,838.00	90.61	324.58	7,265.68	3,567.92	-2,001.71	4,089.79	1.49	0.58	-1.38
10,901.00	90.50	323.82	7,265.07	3,619.01	-2,038.56	4,152.54	1.22	-0.17	-1.21
10,964.00	90.61	323.51	7,264.46	3,669.76	-2,075.88	4,215.24	0.52	0.17	-0.49
11,026.00	90.87	323.37	7,263.66	3,719.55	-2,112.81	4,276.91	0.48	0.42	0.23
11,090.00	89.80	324.39	7,263.29	3,771.25	-2,150.54	4,340.63	2.31	1.67	-1.59
11,153.00	90.07	323.78	7,263.36	3,822.27	-2,187.49	4,403.37	1.06	0.43	-0.97
11,215.00	88.82	324.70	7,263.96	3,872.58	-2,223.72	4,465.12	2.50	-2.02	1.48

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**Scientific Drilling International**  
Survey Report



<b>Company:</b>	Stone Energy	<b>Local Co-ordinate Reference:</b>	Well Mills-Wetzel 19H - Slot MW3#19H
<b>Project:</b>	Heather Prospect (NAD 27)	<b>TVD Reference:</b>	GL 1291' & KB 18' @ 1309.00ft (Saxon 141)
<b>Site:</b>	Mills-Wetzel Pad 3	<b>MD Reference:</b>	GL 1291' & KB 18' @ 1309.00ft (Saxon 141)
<b>Well:</b>	Mills-Wetzel 19H	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	OH	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	As Drilled	<b>Database:</b>	Northeast District

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
11,278.00	89.66	325.03	7,264.80	3,924.10	-2,259.97	4,527.93	1.43	1.33	0.52
11,340.00	90.77	325.37	7,264.56	3,975.01	-2,295.36	4,589.77	1.87	1.79	0.55
11,403.00	91.51	324.88	7,263.31	4,026.68	-2,331.37	4,652.59	1.41	1.17	-0.78
11,467.00	90.94	325.99	7,261.94	4,079.37	-2,367.67	4,716.43	1.95	-0.89	1.73
11,531.00	92.05	326.00	7,260.27	4,132.41	-2,403.45	4,780.31	1.73	1.73	0.02
11,594.00	90.47	325.42	7,258.89	4,184.44	-2,438.94	4,843.17	2.67	-2.51	-0.92
11,657.00	90.97	325.16	7,258.09	4,236.23	-2,474.81	4,906.01	0.89	0.79	-0.41
11,721.00	89.40	326.16	7,257.89	4,289.07	-2,510.91	4,969.88	2.91	-2.45	1.56
11,784.00	90.71	326.25	7,257.83	4,341.42	-2,545.95	5,032.79	2.08	2.08	0.14
11,847.00	90.71	326.05	7,257.05	4,393.74	-2,581.04	5,095.69	0.32	0.00	-0.32
11,910.00	90.37	326.35	7,256.45	4,446.09	-2,616.08	5,158.59	0.72	-0.54	0.48
11,973.00	90.10	325.98	7,256.19	4,498.42	-2,651.16	5,221.50	0.73	-0.43	-0.59
12,036.00	89.97	326.72	7,256.16	4,550.86	-2,686.07	5,284.42	1.19	-0.21	1.17
12,100.00	90.94	327.14	7,255.65	4,604.49	-2,720.99	5,348.36	1.65	1.52	0.66
12,163.00	90.40	327.24	7,254.91	4,657.44	-2,755.13	5,411.32	0.87	-0.86	0.16
12,227.00	90.17	327.19	7,254.59	4,711.24	-2,789.78	5,475.27	0.37	-0.36	-0.08
12,291.00	90.10	327.50	7,254.44	4,765.13	-2,824.31	5,539.24	0.50	-0.11	0.48
12,354.00	89.87	327.85	7,254.46	4,818.36	-2,858.00	5,602.21	0.66	-0.37	0.56
12,414.00	90.63	327.42	7,254.20	4,869.04	-2,890.12	5,662.19	1.46	1.27	-0.71
<b>Last SDI MWD Survey</b>									
12,417.00	90.67	327.40	7,254.16	4,871.57	-2,891.73	5,665.18	1.46	1.27	-0.71
12,476.00	90.67	327.40	7,253.47	4,921.27	-2,923.52	5,724.15	0.00	0.00	0.00
<b>Projection To Bit</b>									

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
18.00	18.00	0.00	0.00	Ground Level
103.00	103.00	-0.15	0.09	First SDI Gyro Survey
6,127.18	6,119.15	177.43	2.68	Last SDI Gyro Survey
6,174.00	6,165.96	176.78	3.05	First SDI MWD Survey
12,414.00	7,254.20	4,869.04	-2,890.12	Last SDI MWD Survey
12,476.00	7,253.47	4,921.27	-2,923.52	Projection To Bit

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

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