

WELL DETAILS: Mills-Wetzel 18H

+N/-S	+E/-W	Northing	Ground Level	1291.00	Longitude	Slot	TVD	MD	Inc	Azi	+N/-S	+E/-W	VSet Departure	Annotation	
0.00	0.00	369989.93	1669027.30	39° 30' 35.664" N	80° 40' 23.105" W	MW3#18H	18.00	18.00	0.00	0.00	0.00	0.00	0.00	Ground Level	
							103.00	103.00	0.13	276.14	0.01	-0.10	-0.06	First SDI Gyro Survey	
							6209.71	6221.01	5.08	145.14	-234.10	138.84	271.70	284.94	Last SDI Gyro Survey
							6209.72	6221.01	5.08	145.14	-234.10	138.84	271.70	284.94	Last SDI MWD Survey
							7365.76	14048.00	90.44	148.35	-6147.82	4109.83	7394.92	7411.63	Last SDI MWD Survey
							7365.26	14113.00	90.44	148.35	-6203.15	4143.93	7459.86	7476.63	Projection to Bit

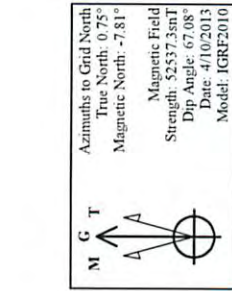
ANNOTATIONS

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

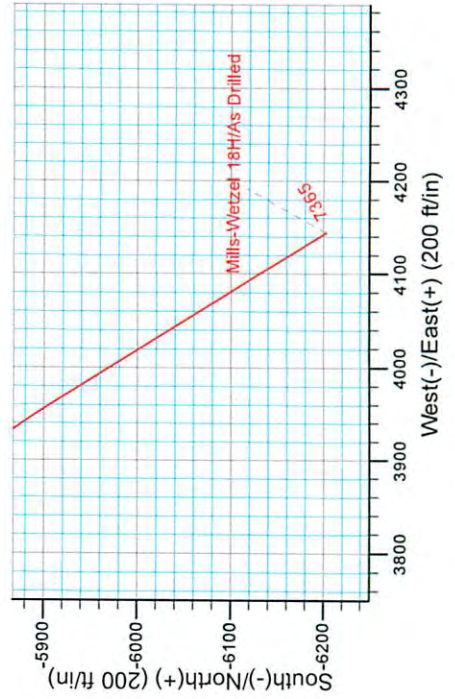
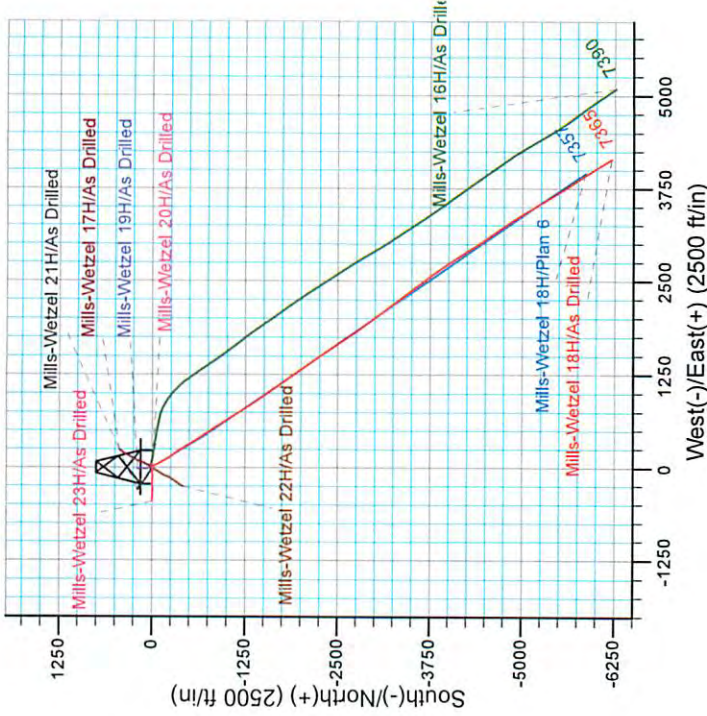
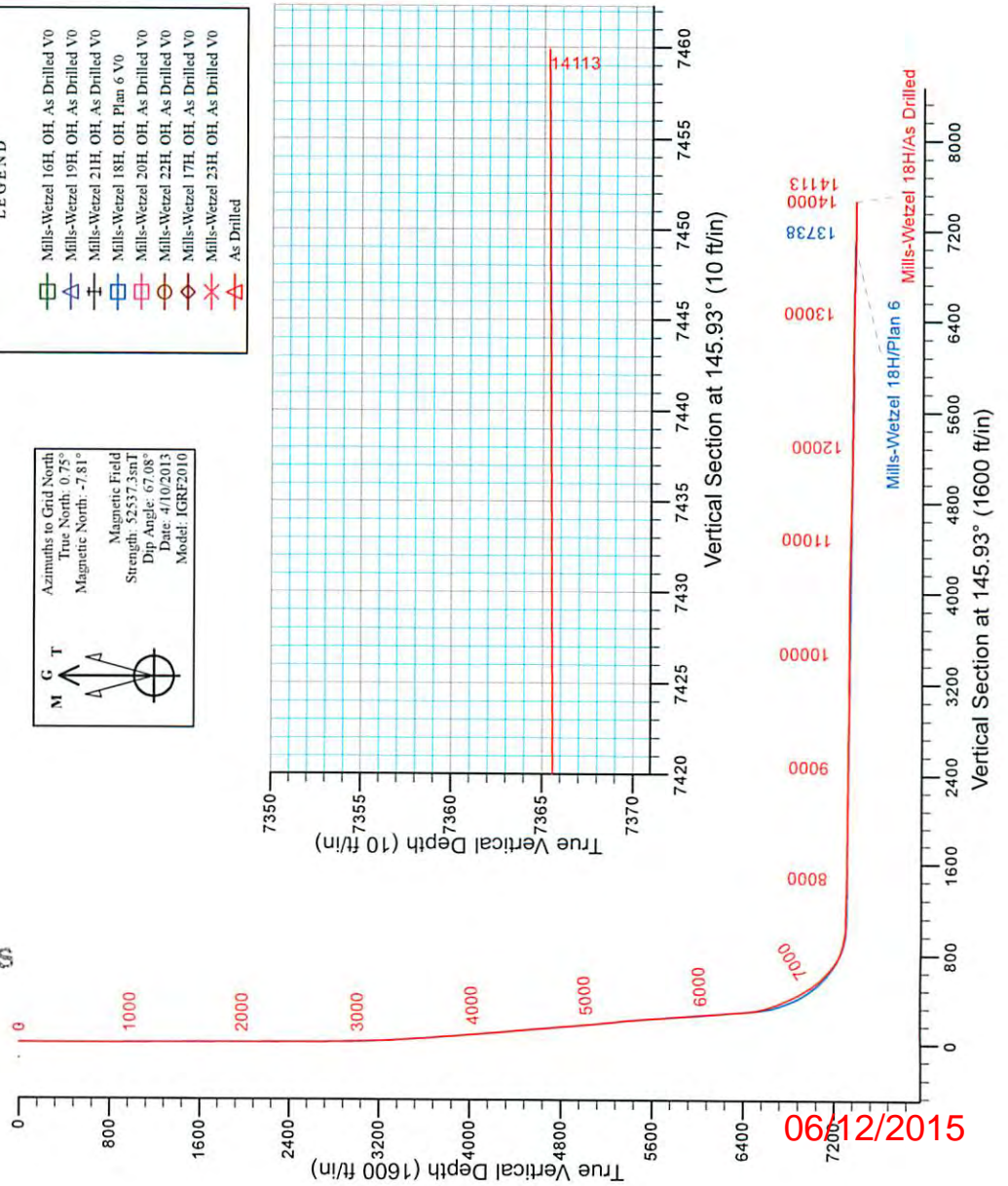
REFERENCE INFORMATION

Coordinate (N/E) Reference: Well Mills-Wetzel 18H - Slot MW3#18H, Grid North
Vertical (TVD) Reference: GL 1291 & KB 18' @ 1309.00ft (Saxon 141)
Section (V/S) Reference: Slot - MW3#18H(0.00N, 0.00E)
Measured Depth Reference: GL 1291 & KB 18' @ 1309.00ft (Saxon 141)
Calculation Method: Minimum Curvature



LEGEND

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



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Stone Energy

Heather Prospect (NAD 27)

Mills-Wetzel Pad 3

Mills-Wetzel 18H - Slot MW3#18H

OH

Design: As Drilled

Standard Survey Report

21 May, 2013

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06/12/2015



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Survey Report



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

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

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

Well	Mills-Wetzel 18H - Slot MW3#18H		
Well Position	+N-S	0.00 ft	Northing: 369,989.93 usft
	+E-W	0.00 ft	Easting: 1,669,027.30 usft
Position Uncertainty		0.00 ft	Wellhead Elevation: ft
			Latitude: 39° 30' 35.664 N
			Longitude: 80° 40' 23.105 W
			Ground Level: 1,291.00 ft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	4/4/2013	-8.55	67.08	52,539
	IGRF2010	4/10/2013	-8.55	67.08	52,537

Design	As Drilled				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)	
	0.00	0.00	0.00	145.93	

Survey Program	Date	5/21/2013			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
18.00	6,221.01	SDI Keeper Gyro (OH)	SDI Standard Keeper 103	SDI Standard Wireline Keeper ver 1.0.3	
6,287.00	14,113.00	Survey 3 - 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	0.00	18.00	0.00	0.00	0.00	0.00	0.00	0.00	
Ground Level										
103.00	0.13	276.14	103.00	0.01	-0.10	-0.06	0.15	0.15	0.00	
First SDI Gyro Survey										
203.00	0.17	327.59	203.00	0.15	-0.29	-0.28	0.14	0.14	51.45	
303.00	0.11	113.32	303.00	0.23	-0.28	-0.35	0.05	0.05	145.73	
403.00	0.13	146.14	403.00	0.10	-0.13	-0.16	0.07	0.02	32.82	

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Survey Report



Company:	Stone Energy	Local Co-ordinate Reference:	Well Mills-Wetzel 18H - Slot MW3#18H
Project:	Heather Prospect (NAD 27)	TVD Reference:	GL 1291' & KB 18' @ 1309.00ft (Saxon 141)
Site:	Mills-Wetzel Pad 3	MD Reference:	GL 1291' & KB 18' @ 1309.00ft (Saxon 141)
Well:	Mills-Wetzel 18H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	As Drilled	Database:	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)
503.00	0.08	140.17	503.00	-0.05	-0.02	0.03	0.05	-0.05	-5.97
603.00	0.09	138.03	603.00	-0.16	0.08	0.17	0.01	0.01	-2.14
703.00	0.13	89.67	703.00	-0.21	0.24	0.31	0.10	0.04	-48.36
803.00	0.11	107.67	803.00	-0.24	0.45	0.45	0.04	-0.02	18.00
903.00	0.19	156.74	903.00	-0.42	0.60	0.69	0.14	0.08	49.07
1,003.00	0.25	101.74	1,003.00	-0.62	0.88	1.01	0.21	0.06	-55.00
1,103.00	0.27	122.90	1,103.00	-0.79	1.30	1.38	0.10	0.02	21.16
1,203.00	0.13	95.34	1,203.00	-0.93	1.61	1.67	0.17	-0.14	-27.56
1,303.00	0.40	118.99	1,302.99	-1.11	2.02	2.06	0.29	0.27	23.65
1,403.00	0.46	127.71	1,402.99	-1.53	2.65	2.75	0.09	0.06	8.72
1,503.00	0.48	98.40	1,502.99	-1.83	3.38	3.41	0.24	0.02	-29.31
1,603.00	0.47	102.03	1,602.99	-1.98	4.19	3.99	0.03	-0.01	3.63
1,703.00	0.48	108.82	1,702.98	-2.20	4.99	4.62	0.06	0.01	6.79
1,803.00	0.45	114.28	1,802.98	-2.50	5.75	5.29	0.05	-0.03	5.46
1,903.00	0.38	109.69	1,902.98	-2.77	6.42	5.89	0.08	-0.07	-4.59
2,003.00	0.13	353.94	2,002.98	-2.77	6.72	6.06	0.45	-0.25	-115.75
2,103.00	0.25	355.44	2,102.98	-2.44	6.69	5.77	0.12	0.12	1.50
2,203.00	0.67	95.95	2,202.97	-2.28	7.25	5.95	0.76	0.42	100.51
2,303.00	1.02	89.59	2,302.96	-2.34	8.72	6.82	0.36	0.35	-6.36
2,403.00	1.12	86.94	2,402.95	-2.28	10.59	7.82	0.11	0.10	-2.65
2,503.00	0.96	88.33	2,502.93	-2.20	12.40	8.77	0.16	-0.16	1.39
2,603.00	0.91	76.77	2,602.92	-2.00	14.01	9.50	0.19	-0.05	-11.56
2,703.00	0.85	77.99	2,702.91	-1.66	15.51	10.06	0.06	-0.06	1.22
2,803.00	0.94	92.75	2,802.89	-1.54	17.06	10.83	0.25	0.09	14.76
2,886.00	0.59	86.74	2,885.89	-1.55	18.16	11.46	0.43	-0.42	-7.24
2,978.00	0.66	174.87	2,977.88	-2.05	18.68	12.17	0.95	0.08	95.79
3,069.00	2.02	170.35	3,068.86	-4.16	19.00	14.09	1.50	1.49	-4.97
3,163.00	2.24	158.55	3,162.79	-7.50	19.95	17.39	0.52	0.23	-12.55
3,256.00	2.95	162.96	3,255.70	-11.48	21.31	21.45	0.79	0.76	4.74
3,347.00	4.38	165.85	3,346.51	-17.09	22.85	26.96	1.58	1.57	3.18
3,439.00	4.40	162.63	3,438.24	-23.86	24.76	33.64	0.27	0.02	-3.50
3,531.00	4.51	156.28	3,529.96	-30.54	27.27	40.58	0.55	0.12	-6.90
3,621.00	4.39	162.94	3,619.69	-37.08	29.71	47.35	0.59	-0.13	7.40
3,716.00	4.20	166.94	3,714.42	-43.94	31.56	54.08	0.37	-0.20	4.21
3,808.01	4.31	161.71	3,806.17	-50.50	33.40	60.55	0.44	0.12	-5.68
3,900.01	4.36	157.32	3,897.91	-57.01	35.84	67.30	0.36	0.05	-4.77
3,992.01	4.13	157.79	3,989.66	-63.31	38.44	73.97	0.25	-0.25	0.51
4,085.01	5.13	153.66	4,082.35	-70.13	41.55	81.37	1.13	1.08	-4.44
4,178.01	5.61	156.36	4,174.94	-78.02	45.22	89.96	0.58	0.52	2.90
4,270.01	5.38	153.29	4,266.52	-86.00	48.96	98.66	0.41	-0.25	15.94
4,364.01	5.60	151.04	4,360.09	-93.95	53.16	107.60	0.33	0.23	-2.39
4,457.01	5.45	147.96	4,452.66	-101.66	57.70	116.53	0.36	-0.16	-3.31
4,549.01	5.25	143.83	4,544.26	-108.76	62.50	125.11	0.47	-0.22	-4.49
4,640.01	5.29	144.59	4,634.87	-115.54	67.39	133.46	0.09	0.04	0.84

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Survey Report



Company:	Stone Energy	Local Co-ordinate Reference:	Well Mills-Wetzel 18H - Slot MW3#18H
Project:	Heather Prospect (NAD 27)	TVD Reference:	GL 1291' & KB 18' @ 1309.00ft (Saxon 141)
Site:	Mills-Wetzel Pad 3	MD Reference:	GL 1291' & KB 18' @ 1309.00ft (Saxon 141)
Well:	Mills-Wetzel 18H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	As Drilled	Database:	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)
4,730.01	5.24	143.65	4,724.49	-122.23	72.23	141.72	0.11	-0.06	-1.04
4,820.01	5.15	140.90	4,814.12	-128.68	77.21	149.85	0.29	-0.10	-3.06
4,916.01	5.39	153.27	4,909.72	-136.05	81.96	158.61	1.21	0.25	12.89
5,008.01	5.34	151.56	5,001.32	-143.67	85.94	167.16	0.18	-0.05	-1.86
5,101.01	5.42	151.18	5,093.91	-151.33	90.12	175.84	0.09	0.09	-0.41
5,195.01	5.45	151.86	5,187.49	-159.15	94.36	184.70	0.08	0.03	0.72
5,289.01	5.67	147.34	5,281.05	-167.00	98.98	193.78	0.52	0.23	-4.81
5,383.01	6.01	148.59	5,374.56	-175.11	104.05	203.34	0.39	0.36	1.33
5,476.01	5.13	152.61	5,467.12	-182.95	108.50	212.33	1.03	-0.95	4.32
5,567.01	5.42	154.66	5,557.73	-190.45	112.21	220.62	0.38	0.32	2.25
5,665.01	4.39	149.63	5,655.37	-197.87	116.09	228.94	1.14	-1.05	-5.13
5,760.01	4.06	152.31	5,750.12	-203.98	119.49	235.91	0.40	-0.35	2.82
5,853.01	4.16	146.89	5,842.88	-209.72	122.86	242.55	0.43	0.11	-5.83
5,945.01	4.10	148.10	5,934.64	-215.31	126.42	249.18	0.11	-0.07	1.32
6,038.01	4.61	146.24	6,027.37	-221.24	130.25	256.24	0.57	0.55	-2.00
6,130.01	4.85	146.84	6,119.06	-227.57	134.44	263.82	0.27	0.26	0.65
6,221.01	5.08	145.14	6,209.72	-234.10	138.84	271.70	0.30	0.25	-1.87
Last SDI Gyro Survey - First SDI MWD Survey									
6,287.00	5.69	144.16	6,275.41	-239.15	142.43	277.89	0.93	0.92	-1.49
6,350.00	5.27	145.50	6,338.13	-244.06	145.90	283.90	0.70	-0.67	2.13
6,414.00	5.51	142.52	6,401.84	-248.92	149.43	289.91	0.58	0.38	-4.66
6,445.00	6.48	139.18	6,432.67	-251.43	151.48	293.13	3.32	3.13	-10.77
6,477.00	6.19	138.67	6,464.48	-254.09	153.80	296.64	0.92	-0.91	-1.59
6,509.00	7.08	139.81	6,496.26	-256.89	156.21	300.31	2.81	2.78	3.56
6,541.00	10.63	142.59	6,527.88	-260.74	159.28	305.22	11.17	11.09	8.69
6,573.00	14.09	144.47	6,559.13	-266.26	163.33	312.06	10.88	10.81	5.88
6,605.00	16.99	144.82	6,589.96	-273.25	168.29	320.63	9.07	9.06	1.09
6,636.00	18.09	145.40	6,619.52	-280.92	173.64	329.97	3.59	3.55	1.87
6,668.00	19.21	144.90	6,649.83	-289.31	179.48	340.20	3.54	3.50	-1.56
6,698.00	20.02	145.10	6,678.09	-297.56	185.26	350.27	2.71	2.70	0.67
6,729.00	20.84	145.20	6,707.14	-306.44	191.44	361.09	2.65	2.65	0.32
6,761.00	21.90	144.86	6,736.94	-316.00	198.13	372.75	3.34	3.31	-1.06
6,792.00	23.76	144.49	6,765.51	-325.81	205.08	384.78	6.02	6.00	-1.19
6,824.00	25.38	144.51	6,794.61	-336.64	212.81	398.08	5.06	5.06	0.06
6,856.00	25.45	144.57	6,823.52	-347.83	220.78	411.81	0.23	0.22	0.19
6,888.00	26.15	145.02	6,852.33	-359.21	228.81	425.73	2.27	2.19	1.41
6,920.00	28.48	147.18	6,880.76	-371.40	236.98	440.41	7.91	7.28	6.75
6,951.00	31.12	149.08	6,907.66	-384.49	245.11	455.80	9.04	8.52	6.13
6,983.00	31.97	150.28	6,934.93	-398.94	253.56	472.51	3.30	2.66	3.75
7,015.00	31.82	150.64	6,962.10	-413.65	261.89	489.36	0.76	-0.47	1.13
7,046.00	32.84	150.77	6,988.29	-428.11	270.01	505.88	3.30	3.23	0.42
7,078.00	35.48	150.31	7,014.77	-443.75	278.84	523.79	8.29	8.25	-1.44
7,110.00	37.98	149.34	7,040.41	-460.29	288.47	542.88	8.02	7.81	-3.03

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Project:	Heather Prospect (NAD 27)	TVD Reference:	GL 1291' & KB 18' @ 1309.00ft (Saxon 141)
Site:	Mills-Wetzel Pad 3	MD Reference:	GL 1291' & KB 18' @ 1309.00ft (Saxon 141)
Well:	Mills-Wetzel 18H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	As Drilled	Database:	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)
7,142.00	40.79	148.02	7,065.14	-477.63	299.03	563.16	9.16	8.78	-4.13
7,173.00	43.31	147.07	7,088.16	-495.15	310.17	583.92	8.38	8.13	-3.06
7,204.00	46.63	147.08	7,110.09	-513.53	322.08	605.82	10.71	10.71	0.03
7,236.00	49.10	146.61	7,131.56	-533.40	335.06	629.54	7.80	7.72	-1.47
7,267.00	50.63	147.84	7,151.54	-553.32	347.88	653.23	5.79	4.94	3.97
7,297.00	51.55	147.32	7,170.38	-573.03	360.40	676.57	3.35	3.07	-1.73
7,327.00	52.64	147.38	7,188.81	-592.96	373.17	700.23	3.64	3.63	0.20
7,357.00	55.29	146.72	7,206.46	-613.31	386.36	724.48	9.01	8.83	-2.20
7,388.00	59.64	146.32	7,223.13	-635.11	400.78	750.61	14.07	14.03	-1.29
7,418.00	65.37	145.96	7,236.97	-657.19	415.60	777.21	19.13	19.10	-1.20
7,448.00	69.65	145.69	7,248.45	-680.12	431.17	804.92	14.29	14.27	-0.90
7,479.00	72.55	145.60	7,258.49	-704.33	447.72	834.25	9.36	9.35	-0.29
7,509.00	74.13	146.74	7,267.09	-728.20	463.72	862.99	6.40	5.27	3.80
7,540.00	76.35	146.52	7,274.98	-753.24	480.20	892.96	7.19	7.16	-0.71
7,570.00	77.04	146.69	7,281.89	-777.61	496.27	922.15	2.37	2.30	0.57
7,601.00	78.19	146.92	7,288.54	-802.95	512.85	952.43	3.78	3.71	0.74
7,632.00	81.12	146.75	7,294.10	-828.47	529.53	982.92	9.47	9.45	-0.55
7,662.00	86.34	146.96	7,297.38	-853.43	545.83	1,012.72	17.41	17.40	0.70
7,723.00	90.30	147.22	7,299.17	-904.61	578.95	1,073.67	6.51	6.49	0.43
7,784.00	89.87	146.95	7,299.08	-955.82	612.10	1,134.66	0.83	-0.70	-0.44
7,845.00	88.22	147.89	7,300.09	-1,007.21	644.94	1,195.63	3.11	-2.70	1.54
7,906.00	87.82	147.63	7,302.20	-1,058.78	677.46	1,256.56	0.78	-0.66	-0.43
7,966.00	88.66	147.52	7,304.04	-1,109.40	709.62	1,316.51	1.41	1.40	-0.18
8,027.00	88.39	147.25	7,305.61	-1,160.76	742.49	1,377.47	0.63	-0.44	-0.44
8,088.00	89.06	146.80	7,306.97	-1,211.92	775.68	1,438.44	1.32	1.10	-0.74
8,149.00	89.80	147.28	7,307.58	-1,263.10	808.86	1,499.43	1.45	1.21	0.79
8,210.00	89.60	146.43	7,307.90	-1,314.17	842.22	1,560.42	1.43	-0.33	-1.39
8,271.00	89.36	145.34	7,308.45	-1,364.67	876.43	1,621.41	1.83	-0.39	-1.79
8,333.00	89.63	145.61	7,309.00	-1,415.75	911.56	1,683.41	0.62	0.44	0.44
8,397.00	88.89	145.56	7,309.82	-1,468.55	947.73	1,747.40	1.16	-1.16	-0.08
8,460.00	89.56	145.48	7,310.67	-1,520.47	983.39	1,810.39	1.07	1.06	-0.13
8,524.00	89.80	145.32	7,311.03	-1,573.15	1,019.74	1,874.39	0.45	0.38	-0.25
8,587.00	88.29	144.97	7,312.08	-1,624.84	1,055.73	1,937.37	2.46	-2.40	-0.56
8,651.00	89.09	144.93	7,313.55	-1,677.22	1,092.48	2,001.35	1.25	1.25	-0.06
8,714.00	90.13	146.32	7,313.97	-1,729.22	1,128.05	2,064.34	2.76	1.65	2.21
8,778.00	90.87	146.22	7,313.42	-1,782.44	1,163.58	2,128.34	1.17	1.16	-0.16
8,841.00	90.00	144.97	7,312.94	-1,834.42	1,199.18	2,191.33	2.42	-1.38	-1.98
8,904.00	90.60	145.03	7,312.61	-1,886.02	1,235.31	2,254.32	0.96	0.95	0.10
8,967.00	89.73	145.38	7,312.43	-1,937.76	1,271.26	2,317.32	1.49	-1.38	0.56
9,030.00	88.45	145.13	7,313.43	-1,989.52	1,307.16	2,380.30	2.07	-2.03	-0.40
9,094.00	89.56	145.67	7,314.54	-2,042.19	1,343.50	2,444.29	1.93	1.73	0.84
9,157.00	90.74	146.26	7,314.37	-2,094.39	1,378.76	2,507.29	2.05	1.87	0.94
9,219.00	90.00	145.77	7,313.97	-2,145.80	1,413.41	2,569.29	1.43	-1.19	-0.79

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Survey Report



Company:	Stone Energy	Local Co-ordinate Reference:	Well Mills-Wetzel 18H - Slot MW3#18H
Project:	Heather Prospect (NAD 27)	TVD Reference:	GL 1291' & KB 18' @ 1309.00ft (Saxon 141)
Site:	Mills-Wetzel Pad 3	MD Reference:	GL 1291' & KB 18' @ 1309.00ft (Saxon 141)
Well:	Mills-Wetzel 18H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	As Drilled	Database:	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)
9,282.00	89.33	145.27	7,314.34	-2,197.73	1,449.08	2,632.28	1.33	-1.06	-0.79
9,345.00	88.15	145.21	7,315.73	-2,249.48	1,484.99	2,695.26	1.88	-1.87	-0.10
9,409.00	89.19	145.67	7,317.21	-2,302.17	1,521.28	2,759.24	1.78	1.63	0.72
9,473.00	89.76	146.95	7,317.80	-2,355.42	1,556.78	2,823.24	2.19	0.89	2.00
9,537.00	88.79	147.48	7,318.61	-2,409.22	1,591.43	2,887.21	1.73	-1.52	0.83
9,600.00	89.56	147.39	7,319.52	-2,462.31	1,625.34	2,950.18	1.23	1.22	-0.14
9,663.00	90.47	147.08	7,319.50	-2,515.28	1,659.43	3,013.17	1.53	1.44	-0.49
9,727.00	90.24	146.37	7,319.10	-2,568.79	1,694.55	3,077.16	1.17	-0.36	-1.11
9,790.00	91.01	146.31	7,318.42	-2,621.22	1,729.46	3,140.15	1.23	1.22	-0.10
9,854.00	89.70	145.42	7,318.02	-2,674.19	1,765.38	3,204.15	2.47	-2.05	-1.39
9,917.00	88.79	145.03	7,318.85	-2,725.93	1,801.30	3,267.14	1.57	-1.44	-0.62
9,980.00	89.80	145.29	7,319.62	-2,777.64	1,837.29	3,330.13	1.66	1.60	0.41
10,044.00	89.90	146.28	7,319.79	-2,830.56	1,873.28	3,394.13	1.55	0.16	1.55
10,107.00	88.92	144.42	7,320.44	-2,882.38	1,909.09	3,457.12	3.34	-1.56	-2.95
10,171.00	89.87	144.65	7,321.12	-2,934.50	1,946.22	3,521.09	1.53	1.48	0.36
10,235.00	90.24	144.31	7,321.05	-2,986.59	1,983.41	3,585.07	0.79	0.58	-0.53
10,298.00	89.09	143.88	7,321.42	-3,037.62	2,020.35	3,648.04	1.95	-1.83	-0.68
10,362.00	89.90	143.96	7,321.99	-3,089.34	2,058.04	3,712.00	1.27	1.27	0.13
10,425.00	90.67	143.79	7,321.67	-3,140.23	2,095.18	3,774.95	1.25	1.22	-0.27
10,487.00	89.56	142.59	7,321.55	-3,189.87	2,132.33	3,836.88	2.64	-1.79	-1.94
10,551.00	89.90	142.38	7,321.85	-3,240.63	2,171.30	3,900.76	0.62	0.53	-0.33
10,615.00	89.39	142.86	7,322.25	-3,291.49	2,210.16	3,964.66	1.09	-0.80	0.75
10,678.00	89.60	143.09	7,322.80	-3,341.78	2,248.09	4,027.57	0.49	0.33	0.37
10,742.00	89.73	143.05	7,323.18	-3,392.94	2,286.54	4,091.49	0.21	0.20	-0.06
10,805.00	88.52	143.07	7,324.14	-3,443.29	2,324.40	4,154.40	1.92	-1.92	0.03
10,868.00	88.99	143.00	7,325.51	-3,493.61	2,362.27	4,217.30	0.75	0.75	-0.11
10,931.00	89.23	142.72	7,326.49	-3,543.83	2,400.31	4,280.21	0.59	0.38	-0.44
10,994.00	88.29	143.10	7,327.85	-3,594.07	2,438.29	4,343.10	1.61	-1.49	0.60
11,058.00	88.82	141.78	7,329.46	-3,644.78	2,477.29	4,406.96	2.22	0.83	-2.06
11,121.00	89.29	141.76	7,330.50	-3,694.27	2,516.27	4,469.79	0.75	0.75	-0.03
11,184.00	89.50	144.13	7,331.17	-3,744.54	2,554.23	4,532.69	3.78	0.33	3.76
11,247.00	88.86	145.53	7,332.07	-3,796.03	2,590.51	4,595.67	2.44	-1.02	2.22
11,311.00	89.46	145.91	7,333.01	-3,848.91	2,626.56	4,659.67	1.11	0.94	0.59
11,374.00	89.02	145.82	7,333.84	-3,901.05	2,661.90	4,722.66	0.71	-0.70	-0.14
11,437.00	89.56	146.80	7,334.62	-3,953.46	2,696.85	4,785.65	1.78	0.86	1.56
11,501.00	87.68	147.32	7,336.17	-4,007.16	2,731.64	4,849.62	3.05	-2.94	0.81
11,565.00	88.55	147.89	7,338.27	-4,061.17	2,765.91	4,913.56	1.62	1.36	0.89
11,628.00	89.19	147.63	7,339.51	-4,114.44	2,799.51	4,976.51	1.10	1.02	-0.41
11,692.00	88.45	147.50	7,340.83	-4,168.45	2,833.83	5,040.47	1.17	-1.16	-0.20
11,755.00	89.09	146.85	7,342.18	-4,221.37	2,867.97	5,103.44	1.45	0.89	-1.03
11,819.00	89.87	146.60	7,342.76	-4,274.88	2,903.08	5,167.43	1.25	0.22	0.88
11,882.00	90.47	146.94	7,342.58	-4,327.58	2,937.60	5,230.43	1.09	0.95	0.54
11,945.00	89.80	146.67	7,342.43	-4,380.29	2,972.10	5,293.42	1.15	0.65	-0.43
12,009.00	90.20	146.72	7,342.43	-4,433.78	3,007.24	5,357.41	0.63	0.63	0.08

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Scientific Drilling International
Survey Report



Company:	Stone Energy	Local Co-ordinate Reference:	Well Mills-Wetzel 18H - Slot MW3#18H
Project:	Heather Prospect (NAD 27)	TVD Reference:	GL 1291' & KB 18' @ 1309.00ft (Saxon 141)
Site:	Mills-Wetzel Pad 3	MD Reference:	GL 1291' & KB 18' @ 1309.00ft (Saxon 141)
Well:	Mills-Wetzel 18H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	As Drilled	Database:	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)
12,072.00	88.69	145.63	7,343.04	-4,486.12	3,042.30	5,420.41	2.96	-2.40	-1.73
12,136.00	89.29	145.42	7,344.17	-4,538.87	3,078.53	5,484.39	0.99	0.94	-0.33
12,199.00	89.66	145.14	7,344.74	-4,590.65	3,114.41	5,547.39	0.74	0.59	-0.44
12,263.00	88.02	144.99	7,346.04	-4,643.10	3,151.05	5,611.36	2.57	-2.56	-0.23
12,326.00	88.82	145.69	7,347.78	-4,694.90	3,186.86	5,674.34	1.69	1.27	1.11
12,390.00	89.60	145.83	7,348.66	-4,747.80	3,222.87	5,738.33	1.24	1.22	0.22
12,453.00	90.24	146.22	7,348.75	-4,800.05	3,258.07	5,801.33	1.19	1.02	0.62
12,517.00	90.00	146.80	7,348.61	-4,853.42	3,293.39	5,865.32	0.98	-0.38	0.91
12,580.00	91.21	146.38	7,347.95	-4,906.01	3,328.08	5,928.32	2.03	1.92	-0.67
12,644.00	89.50	147.96	7,347.55	-4,959.78	3,362.77	5,992.29	3.64	-2.67	2.47
12,708.00	90.17	147.80	7,347.74	-5,013.98	3,396.80	6,056.26	1.08	1.05	-0.25
12,771.00	89.63	147.84	7,347.85	-5,067.31	3,430.35	6,119.22	0.86	-0.86	0.06
12,834.00	88.82	149.26	7,348.70	-5,121.04	3,463.22	6,182.15	2.59	-1.29	2.25
12,897.00	89.33	149.50	7,349.72	-5,175.25	3,495.30	6,245.03	0.89	0.81	0.38
12,960.00	90.40	149.39	7,349.86	-5,229.50	3,527.33	6,307.91	1.71	1.70	-0.17
13,024.00	88.76	149.54	7,350.33	-5,284.63	3,559.84	6,371.78	2.57	-2.56	0.23
13,087.00	88.25	149.14	7,351.98	-5,338.80	3,591.96	6,434.65	1.03	-0.81	-0.63
13,150.00	88.96	149.32	7,353.51	-5,392.91	3,624.18	6,497.53	1.16	1.13	0.29
13,214.00	89.87	149.48	7,354.16	-5,448.00	3,656.75	6,561.40	1.44	1.42	0.25
13,278.00	88.05	147.67	7,355.33	-5,502.60	3,690.11	6,625.32	4.01	-2.84	-2.83
13,341.00	88.76	147.74	7,357.08	-5,555.83	3,723.76	6,688.27	1.13	1.13	0.11
13,405.00	88.08	146.87	7,358.84	-5,609.67	3,758.32	6,752.22	1.72	-1.06	-1.36
13,468.00	88.96	146.98	7,360.47	-5,662.44	3,792.69	6,815.19	1.41	1.40	0.17
13,531.00	89.19	145.84	7,361.49	-5,714.92	3,827.54	6,878.18	1.85	0.37	-1.81
13,595.00	90.34	145.53	7,361.75	-5,767.77	3,863.61	6,942.18	1.86	1.80	-0.48
13,659.00	88.49	144.88	7,362.40	-5,820.33	3,900.13	7,006.17	3.06	-2.89	-1.02
13,722.00	89.66	145.22	7,363.42	-5,871.96	3,936.22	7,069.15	1.93	1.86	0.54
13,785.00	88.59	147.61	7,364.38	-5,924.43	3,971.06	7,132.13	4.16	-1.70	3.79
13,849.00	89.36	148.11	7,365.53	-5,978.61	4,005.10	7,196.09	1.43	1.20	0.78
13,912.00	90.40	148.00	7,365.66	-6,032.07	4,038.43	7,259.04	1.66	1.65	-0.17
13,976.00	89.56	148.47	7,365.68	-6,086.48	4,072.13	7,322.99	1.50	-1.31	0.73
14,039.00	90.20	148.39	7,365.81	-6,140.16	4,105.11	7,385.93	1.02	1.02	-0.13
14,048.00	90.44	148.35	7,365.76	-6,147.82	4,109.83	7,394.92	2.70	2.67	-0.44
Last SDI MWD Survey									
14,113.00	90.44	148.35	7,365.26	-6,203.15	4,143.93	7,459.86	0.00	0.00	0.00
Projection to Bit									

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FEB 26 2015



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

Design Annotations				
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	0.01	-0.10	First SDI Gyro Survey
6,221.01	6,209.71	-234.10	138.84	Last SDI Gyro Survey
6,221.01	6,209.72	-234.10	138.84	First SDI MWD Survey
14,048.00	7,365.76	-6,147.82	4,109.83	Last SDI MWD Survey
14,113.00	7,365.26	-6,203.15	4,143.93	Projection to Bit

Checked By: _____ Approved By: _____ Date: _____

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