

Company:	Stone Energy	Local Co-ordinate Reference:	Well Mills Wetzel #10H - Slot MW#10H
Project:	Heather Prospect (NAD 27)	TVD Reference:	18' RKB - 1303' GL @ 1321.0usft (Saxon 141)
Site:	Mills Wetzel Pad 2	MD Reference:	18' RKB - 1303' GL @ 1321.0usft (Saxon 141)
Well:	Mills Wetzel #10H	North Reference:	Grid
Wellbore:	Original Well	Survey Calculation Method:	Minimum Curvature
Design:	As Drilled	Database:	EDM-Chris Testa

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 2				
Site Position:		Northing:	374,564.00 usft	Latitude:	39° 31' 21.507 N
From:	Map	Easting:	1,674,001.00 usft	Longitude:	80° 39' 20.400 W
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "	Grid Convergence:	-0.74 °

Well	Mills Wetzel #10H - Slot MW#10H					
Well Position	+N/-S	0.0 usft	Northing:	373,990.51 usft	Latitude:	39° 31' 15.787 N
	+E/-W	0.0 usft	Easting:	1,673,588.10 usft	Longitude:	80° 39' 25.575 W
Position Uncertainty		0.0 usft	Wellhead Elevation:	usft	Ground Level:	1,303.0 usft

Wellbore	Original Well				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	08/30/12	-8.54	67.15	52,615

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	160.20	

Survey Program	Date	09/10/12			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
108.0	6,008.0	SDI Keeper Gyro 2 (Original Well)	SDI Standard Keeper 103	SDI Standard Wireline Keeper ver 1.0.3	
6,050.0	10,313.0	SDI MWD (Original Well)	MWD SDI	MWD - Standard ver 1.0.1	

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
108.0	0.28	106.12	108.0	-0.1	0.3	0.2	0.26	0.26	0.00
208.0	0.40	157.57	208.0	-0.5	0.6	0.6	0.31	0.12	51.45
308.0	0.24	177.27	308.0	-1.0	0.8	1.2	0.19	-0.16	19.70
408.0	0.09	288.50	408.0	-1.2	0.7	1.3	0.29	-0.15	111.23
508.0	0.16	217.60	508.0	-1.3	0.5	1.4	0.16	0.07	-70.90
608.0	0.11	232.92	608.0	-1.4	0.4	1.5	0.06	-0.05	15.32
708.0	0.05	230.30	708.0	-1.5	0.3	1.5	0.06	-0.06	-2.62
808.0	0.14	252.57	808.0	-1.6	0.1	1.5	0.10	0.09	22.27
908.0	0.09	284.31	908.0	-1.6	-0.1	1.5	0.08	-0.05	31.74

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Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
1,008.0	0.11	227.14	1,008.0	-1.6	-0.2	1.5	0.10	0.02	-57.17
1,108.0	0.12	270.02	1,108.0	-1.7	-0.4	1.5	0.08	0.01	42.88
1,208.0	0.05	253.52	1,208.0	-1.7	-0.5	1.4	0.07	-0.07	-16.50
1,308.0	0.02	200.58	1,308.0	-1.8	-0.6	1.5	0.04	-0.03	-52.94
1,408.0	0.02	251.42	1,408.0	-1.8	-0.6	1.5	0.02	0.00	50.84
1,508.0	0.18	234.26	1,508.0	-1.9	-0.8	1.5	0.16	0.16	-17.16
1,608.0	0.36	243.04	1,608.0	-2.1	-1.2	1.6	0.18	0.18	8.78
1,708.0	0.37	240.93	1,708.0	-2.4	-1.7	1.7	0.02	0.01	-2.11
1,808.0	0.43	227.96	1,808.0	-2.8	-2.3	1.9	0.11	0.06	-12.97
1,908.0	0.43	228.01	1,908.0	-3.3	-2.8	2.2	0.00	0.00	0.05
2,008.0	0.63	205.60	2,008.0	-4.1	-3.4	2.7	0.28	0.20	-22.41
2,108.0	0.38	190.80	2,108.0	-4.9	-3.7	3.4	0.28	-0.25	-14.80
2,208.0	0.24	192.99	2,208.0	-5.4	-3.8	3.8	0.14	-0.14	2.19
2,308.0	0.23	201.20	2,308.0	-5.8	-3.9	4.1	0.04	-0.01	8.21
2,408.0	0.20	205.93	2,408.0	-6.2	-4.0	4.4	0.03	-0.03	4.73
2,508.0	0.12	179.60	2,508.0	-6.4	-4.1	4.6	0.11	-0.08	-26.33
2,608.0	0.10	191.01	2,608.0	-6.6	-4.1	4.8	0.03	-0.02	11.41
2,708.0	0.06	203.22	2,708.0	-6.7	-4.2	4.9	0.04	-0.04	12.21
2,808.0	0.12	293.78	2,808.0	-6.7	-4.3	4.9	0.13	0.06	90.56
2,908.0	0.24	263.76	2,908.0	-6.7	-4.6	4.8	0.15	0.12	-30.02
3,008.0	0.70	205.04	3,008.0	-7.3	-5.1	5.2	0.61	0.46	-58.72
3,108.0	1.79	177.92	3,107.9	-9.4	-5.3	7.1	1.21	1.09	-27.12
3,208.0	3.76	174.03	3,207.8	-14.2	-4.9	11.7	1.98	1.97	-3.89
3,308.0	5.44	180.28	3,307.5	-22.2	-4.5	19.4	1.75	1.68	6.25
3,408.0	6.27	190.09	3,407.0	-32.4	-5.5	28.6	1.30	0.83	9.81
3,508.0	7.04	199.45	3,506.3	-43.5	-8.5	38.1	1.33	0.77	9.36
3,608.0	7.30	205.50	3,605.5	-55.0	-13.3	47.3	0.80	0.26	6.05
3,708.0	8.15	204.08	3,704.6	-67.2	-18.9	56.8	0.87	0.85	-1.42
3,808.0	8.71	201.87	3,803.5	-80.7	-24.6	67.6	0.65	0.56	-2.21
3,908.0	8.59	202.89	3,902.4	-94.6	-30.4	78.8	0.19	-0.12	1.02
4,008.0	8.78	207.47	4,001.3	-108.3	-36.8	89.4	0.72	0.19	4.58
4,108.0	8.48	209.61	4,100.1	-121.5	-43.9	99.4	0.44	-0.30	2.14
4,208.0	8.44	208.74	4,199.0	-134.3	-51.1	109.1	0.13	-0.04	-0.87
4,308.0	8.96	206.91	4,297.9	-147.7	-58.2	119.3	0.59	0.52	-1.83
4,408.0	9.16	205.83	4,396.6	-161.8	-65.2	130.2	0.26	0.20	-1.08
4,508.0	9.55	204.25	4,495.3	-176.5	-72.0	141.7	0.47	0.39	-1.58
4,608.0	9.90	202.66	4,593.9	-192.0	-78.8	154.0	0.44	0.35	-1.59
4,708.0	9.69	203.94	4,692.4	-207.6	-85.5	166.4	0.30	-0.21	1.28
4,808.0	10.29	203.33	4,790.9	-223.5	-92.4	179.0	0.61	0.60	-0.61
4,908.0	10.10	203.01	4,889.3	-239.8	-99.4	192.0	0.20	-0.19	-0.32
5,008.0	9.81	202.31	4,987.8	-255.8	-106.1	204.7	0.31	-0.29	-0.70
5,108.0	9.39	206.47	5,086.4	-270.9	-112.9	216.7	0.81	-0.42	4.16
5,208.0	9.46	204.32	5,185.1	-285.7	-120.0	228.2	0.36	0.07	-2.15

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Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
5,308.0	9.47	203.36	5,283.7	-300.8	-126.6	240.1	0.16	0.01	-0.96	
5,408.0	8.61	204.05	5,382.5	-315.2	-132.9	251.5	0.87	-0.86	0.69	
5,508.0	9.16	205.93	5,481.3	-329.2	-139.4	262.5	0.62	0.55	1.88	
5,608.0	8.77	209.45	5,580.0	-343.0	-146.7	273.0	0.67	-0.39	3.52	
5,708.0	8.73	208.97	5,678.9	-356.2	-154.1	283.0	0.08	-0.04	-0.48	
5,808.0	10.02	205.93	5,777.5	-370.7	-161.6	294.1	1.38	1.29	-3.04	
5,908.0	9.05	212.29	5,876.2	-385.2	-169.6	305.0	1.43	-0.97	6.36	
6,008.0	8.75	214.62	5,975.0	-398.1	-178.1	314.2	0.47	-0.30	2.33	
6,050.0	8.36	203.41	6,016.5	-403.5	-181.1	318.3	4.07	-0.93	-26.69	
6,113.0	7.99	201.47	6,078.8	-411.8	-184.6	324.9	0.73	-0.59	-3.08	
6,176.0	7.18	204.73	6,141.3	-419.4	-187.8	331.0	1.46	-1.29	5.17	
6,240.0	6.98	206.35	6,204.8	-426.6	-191.2	336.6	0.44	-0.31	2.53	
6,303.0	7.39	206.51	6,267.3	-433.6	-194.7	342.0	0.65	0.65	0.25	
6,367.0	7.89	204.97	6,330.7	-441.3	-198.4	348.0	0.84	0.78	-2.41	
6,430.0	9.37	200.92	6,393.0	-450.0	-202.1	354.9	2.54	2.35	-6.43	
6,494.0	11.35	200.54	6,456.0	-460.8	-206.1	363.7	3.10	3.09	-0.59	
6,558.0	12.44	201.11	6,518.6	-473.1	-210.8	373.7	1.71	1.70	0.89	
6,621.0	13.34	201.04	6,580.0	-486.2	-215.9	384.3	1.43	1.43	-0.11	
6,685.0	13.57	196.83	6,642.3	-500.3	-220.7	395.9	1.57	0.36	-6.58	
6,748.0	13.72	193.37	6,703.5	-514.6	-224.6	408.1	1.32	0.24	-5.49	
6,780.0	13.93	191.57	6,734.6	-522.1	-226.2	414.6	1.50	0.66	-5.63	
6,812.0	14.21	187.50	6,765.6	-529.8	-227.5	421.4	3.21	0.88	-12.72	
6,844.0	16.17	181.64	6,796.5	-538.1	-228.1	429.0	7.77	6.13	-18.31	
6,875.0	18.26	177.87	6,826.1	-547.3	-228.1	437.7	7.64	6.74	-12.16	
6,907.0	19.41	173.50	6,856.4	-557.6	-227.3	447.6	5.69	3.59	-13.66	
6,939.0	21.22	171.65	6,886.4	-568.6	-225.9	458.5	6.00	5.66	-5.78	
6,971.0	23.37	169.26	6,916.0	-580.5	-223.8	470.4	7.29	6.72	-7.47	
7,002.0	26.27	165.88	6,944.1	-593.2	-221.0	483.3	10.41	9.35	-10.90	
7,034.0	29.74	162.22	6,972.4	-607.7	-216.9	498.3	12.10	10.84	-11.44	
7,066.0	32.41	160.60	6,999.8	-623.3	-211.6	514.8	8.74	8.34	-5.06	
7,098.0	33.71	158.20	7,026.6	-639.7	-205.4	532.3	5.77	4.06	-7.50	
7,129.0	35.33	156.65	7,052.1	-655.9	-198.7	549.8	5.94	5.23	-5.00	
7,161.0	38.09	155.76	7,077.8	-673.4	-191.0	568.9	8.78	8.63	-2.78	
7,193.0	40.88	153.48	7,102.5	-691.8	-182.2	589.1	9.82	8.72	-7.13	
7,225.0	43.86	151.92	7,126.1	-710.9	-172.3	610.5	9.87	9.31	-4.88	
7,257.0	47.69	151.43	7,148.5	-731.1	-161.5	633.2	12.02	11.97	-1.53	
7,289.0	51.63	151.03	7,169.2	-752.5	-149.7	657.3	12.35	12.31	-1.25	
7,320.0	55.32	151.62	7,187.6	-774.3	-137.8	681.9	12.00	11.90	1.90	
7,352.0	57.59	152.51	7,205.3	-797.9	-125.3	708.3	7.46	7.09	2.78	
7,384.0	60.25	152.73	7,221.8	-822.2	-112.7	735.4	8.33	8.31	0.69	
7,416.0	62.78	153.27	7,237.1	-847.3	-99.9	763.3	8.04	7.91	1.69	
7,448.0	66.21	152.46	7,250.8	-873.0	-86.7	792.0	10.96	10.72	-2.53	
7,480.0	68.77	151.83	7,263.1	-899.1	-72.9	821.2	8.20	8.00	-1.97	

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7,512.0	69.74	151.85	7,274.4	-925.5	-58.8	850.9	3.03	3.03	0.06	
7,543.0	71.67	151.39	7,284.7	-951.2	-44.9	879.8	6.38	6.23	-1.48	
7,575.0	75.36	151.69	7,293.8	-978.2	-30.3	910.1	11.57	11.53	0.94	
7,607.0	78.51	152.33	7,301.0	-1,005.7	-15.7	941.0	10.03	9.84	2.00	
7,639.0	80.72	152.54	7,306.8	-1,033.6	-1.1	972.1	6.94	6.91	0.66	
7,671.0	81.47	152.81	7,311.7	-1,061.7	13.4	1,003.5	2.49	2.34	0.84	
7,702.0	83.57	152.84	7,315.7	-1,089.1	27.5	1,034.0	6.77	6.77	0.10	
7,734.0	87.11	153.05	7,318.3	-1,117.4	42.0	1,065.6	11.08	11.06	0.66	
7,766.0	88.15	153.09	7,319.7	-1,146.0	56.4	1,097.3	3.25	3.25	0.13	
7,829.0	88.82	153.34	7,321.3	-1,202.2	84.8	1,159.8	1.14	1.06	0.40	
7,893.0	89.63	153.80	7,322.2	-1,259.5	113.3	1,223.4	1.46	1.27	0.72	
7,957.0	90.37	154.04	7,322.2	-1,317.0	141.4	1,287.0	1.22	1.16	0.38	
8,020.0	89.46	153.97	7,322.3	-1,373.6	169.1	1,349.6	1.45	-1.44	-0.11	
8,084.0	90.03	153.95	7,322.6	-1,431.1	197.1	1,413.3	0.89	0.89	-0.03	
8,147.0	90.20	153.91	7,322.4	-1,487.7	224.8	1,475.9	0.28	0.27	-0.06	
8,211.0	89.53	153.54	7,322.6	-1,545.1	253.2	1,539.5	1.20	-1.05	-0.58	
8,274.0	90.03	152.88	7,322.8	-1,601.3	281.6	1,602.0	1.31	0.79	-1.05	
8,338.0	89.43	152.66	7,323.1	-1,658.2	310.8	1,665.5	1.00	-0.94	-0.34	
8,401.0	88.19	152.38	7,324.5	-1,714.1	339.9	1,727.9	2.02	-1.97	-0.44	
8,465.0	88.55	151.95	7,326.3	-1,770.7	369.8	1,791.2	0.88	0.56	-0.67	
8,528.0	89.09	151.09	7,327.6	-1,826.0	399.8	1,853.5	1.61	0.86	-1.37	
8,592.0	89.87	150.99	7,328.2	-1,882.0	430.8	1,916.7	1.23	1.22	-0.16	
8,655.0	89.40	150.78	7,328.6	-1,937.1	461.5	1,978.9	0.82	-0.75	-0.33	
8,719.0	88.49	150.78	7,329.7	-1,992.9	492.7	2,042.0	1.42	-1.42	0.00	
8,782.0	88.82	150.59	7,331.2	-2,047.8	523.5	2,104.1	0.60	0.52	-0.30	
8,846.0	89.36	150.69	7,332.2	-2,103.6	554.9	2,167.2	0.86	0.84	0.16	
8,910.0	89.80	151.70	7,332.7	-2,159.7	585.7	2,230.4	1.72	0.69	1.58	
8,973.0	89.09	152.40	7,333.3	-2,215.3	615.3	2,292.8	1.58	-1.13	1.11	
9,037.0	90.91	152.67	7,333.3	-2,272.1	644.8	2,356.2	2.87	2.84	0.42	
9,100.0	90.40	154.96	7,332.6	-2,328.6	672.6	2,418.8	3.72	-0.81	3.63	
9,164.0	88.99	156.63	7,332.9	-2,387.0	698.8	2,482.6	3.41	-2.20	2.61	
9,227.0	88.19	156.65	7,334.5	-2,444.8	723.8	2,545.5	1.27	-1.27	0.03	
9,291.0	88.25	155.99	7,336.5	-2,503.4	749.5	2,609.3	1.04	0.09	-1.03	
9,355.0	88.66	155.51	7,338.2	-2,561.7	775.8	2,673.1	0.99	0.64	-0.75	
9,418.0	89.03	155.33	7,339.5	-2,619.0	802.0	2,735.8	0.65	0.59	-0.29	
9,482.0	89.90	155.53	7,340.1	-2,677.2	828.6	2,799.6	1.39	1.36	0.31	
9,546.0	89.43	155.55	7,340.4	-2,735.5	855.1	2,863.4	0.74	-0.73	0.03	
9,609.0	88.46	155.00	7,341.6	-2,792.7	881.4	2,926.1	1.77	-1.54	-0.87	
9,672.0	89.06	154.77	7,343.0	-2,849.7	908.1	2,988.9	1.02	0.95	-0.37	
9,735.0	89.66	154.89	7,343.7	-2,906.7	934.9	3,051.6	0.97	0.95	0.19	
9,799.0	89.09	154.25	7,344.4	-2,964.5	962.4	3,115.3	1.34	-0.89	-1.00	
9,862.0	88.32	153.18	7,345.8	-3,021.0	990.3	3,177.8	2.09	-1.22	-1.70	
9,926.0	89.13	153.15	7,347.2	-3,078.1	1,019.2	3,241.4	1.27	1.27	-0.05	
9,989.0	89.40	153.09	7,348.0	-3,134.3	1,047.7	3,303.9	0.44	0.43	-0.10	

Company:	Stone Energy	Local Co-ordinate Reference:	Well Mills Wetzel #10H - Slot MW#10H
Project:	Heather Prospect (NAD 27)	TVD Reference:	18' RKB - 1303' GL @ 1321.0usft (Saxon 141)
Site:	Mills Wetzel Pad 2	MD Reference:	18' RKB - 1303' GL @ 1321.0usft (Saxon 141)
Well:	Mills Wetzel #10H	North Reference:	Grid
Wellbore:	Original Well	Survey Calculation Method:	Minimum Curvature
Design:	As Drilled	Database:	EDM-Chris Testa

Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
10,052.0	89.19	151.85	7,348.8	-3,190.1	1,076.8	3,366.3	2.00	-0.33	-1.97
10,116.0	89.83	151.76	7,349.3	-3,246.5	1,107.0	3,429.6	1.01	1.00	-0.14
10,180.0	89.73	151.88	7,349.6	-3,303.0	1,137.3	3,492.9	0.24	-0.16	0.19
10,244.0	89.13	151.18	7,350.2	-3,359.2	1,167.8	3,556.2	1.44	-0.94	-1.09
10,313.0	89.13	151.18	7,351.3	-3,419.7	1,201.0	3,624.3	0.00	0.00	0.00

Checked By: _____ Approved By: _____ Date: _____