



WR-35
Rev (9-11)

State of West Virginia
Department of Environmental Protection
Office of Oil and Gas
Well Operator's Report of Well Work

DATE: December 4, 2013
API #: 47-103-02681

Farm name: WV Conservation Commission Operator Well No.: Mills-Wetzel #15

LOCATION: Elevation: 1,313' Quadrangle: Pine Grove

District: Grant County: Wetzel
Latitude: 7.510 Feet South of 39 Deg. 32 Min. 30 Sec.
Longitude 9.050 Feet West of 80 Deg. 37 Min. 30 Sec.

Company: **Stone Energy Corporation**

Address:	Casing & Tubing	Used in drilling	Left in well	Cement fill up Cu. Ft.
6000 Hampton Center, Suite B Morgantown, WV 26505	20"	46'	46'	GTS
Agent: Tim McGregor	13.375"	1,285'	1,285'	1,199- CTS
Inspector: Derek Haught	9.625"	2,783'	2,783'	1,235 CTS
Date Permit Issued: 7/6/2011 & 10/28/2011	5.5"		11,886'	1,140 Lead - 1,676 Tail
Date Well Work Commenced: 3/15/2012	2.375"		7,787'	
Date Well Work Completed: 3/9/2013				
Verbal Plugging:				
Date Permission granted on:				
Rotary <input checked="" type="checkbox"/> Cable <input type="checkbox"/> Rig <input type="checkbox"/>				
Total Vertical Depth (ft): 7,286				
Total Measured Depth (ft): 11,886				
Fresh Water Depth (ft.): 50				
Salt Water Depth (ft.): 1,876				
Is coal being mined in area (N/Y)? No				
Coal Depths (ft.): None Reported				
Void(s) encountered (N/Y) Depth(s) N/A				

OPEN FLOW DATA (If more than two producing formations please include additional data on separate sheet)

Producing formation Marcellus Pay zone depth (ft) 7,855' to 11,803'

Gas: Initial open flow 320 MCF/d Oil: Initial open flow 0 Bbl/d

Final open flow 3,980 MCF/d Final open flow 0 Bbl/d

Time of open flow between initial and final tests 86 Hours

Static rock Pressure 2,392 psig (surface pressure) after 8 Hours

Second producing formation _____ Pay zone depth (ft) _____

Gas: Initial open flow _____ MCF/d Oil: Initial open flow _____ Bbl/d

Final open flow _____ MCF/d Final open flow _____ Bbl/d

Time of open flow between initial and final tests _____ Hours

Static rock Pressure _____ psig (surface pressure) after _____ Hours

RECEIVED
Office of Oil and Gas

DEC 06 2013

WV Department of Environmental Protection

I certify under penalty of law that I have personally examined and am familiar with the information submitted on this document and all the attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information I believe that the information is true, accurate, and complete.

W. J. [Signature]
Signature

12/4/2013
Date

03/07/2014

Were core samples taken? Yes _____ No X

Were cuttings caught during drilling? Yes X No _____

Were Electrical, Mechanical or Geophysical logs recorded on this well? If yes, please list MWD Gamma Ray, Mud Log, and CBL

NOTE: IN THE AREA BELOW PUT THE FOLLOWING: 1). DETAILS OF PERFORATED INTERVALS, FRACTURING OR STIMULATING, PHYSICAL CHANGE, ETC. 2). THE WELL LOG WHICH IS A SYSTEMATIC DETAILED GEOLOGICAL RECORD OF THE TOPS AND BOTTOMS OF ALL FORMATIONS, INCLUDING COAL ENCOUNTERED BY THE WELLBORE FROM SURFACE TO TOTAL DEPTH.

Perforated Intervals, Fracturing, or Stimulating:

Perforated 15 intervals from 11,803' to 7,855'. Performed 15 individual stages of slick water stimulation using 5,169,867 gals fresh water, Sand - 585,748 lbs 100 Mesh and 4,466,734 lbs 40/70. AvBDP = 6,945 psi, AvTP = 7,675 psi, AvMTP = 9,149 psi, AvInjRate = 79.9 bpm, and AvISIP = 4,454 psi.

See Attachment for FracFocus information.

Plug Back Details Including Plug Type and Depth(s):

Formations Encountered:	Top Depth	/	Bottom Depth
Surface:			

See attached sheet for formations encountered and their depths.

MILLS-WETZEL #15H

API 47-103-02681

Stone Energy Corporation

	Top	Horizontal		Bottom (ft	Bottom (ft
	(ft TVD)	Top (ft MD)	(ft MD)	TVD)	MD)
Sandstone & Shale	Surface		*	2300	FW @ 60'
Little Lime	2300		*	2330	SW @ 1876'
Big Lime	2330		*	2454	Oil Odor @ 2367'
Big Injun	2454		*	2554	
Sandstone & Shale	2654		*	2916	
Berea Sandstone	2916		*	2956	
Shale	2956		*	3130	
Gordon	3130		*	3194	
Undiff Devonian Shale	3194		*	5418	
Riley	5418		*	5474	
Undiff Devonian Shale	5474		*	5512	
Benson	5512		*	5550	
Undiff Devonian Shale	5550		*	5753	
Pipe Creek	5753		*	5765	
Lower Alexander	5765		*	5812	
Undiff Devonian Shale	5812		*	6680	6816
Rhinestreet	6680	6816	~	6917	7104
Cashaqua	6917	7104	~	7074	7327
Middlesex	7074	7327	~	7093	7347
West River	7093	7347	~	7182	7503
Geneseo	7182	7503	~	7206	7551
Tully Limestone	7206	7551	~	7274	7710
Hamilton	7274	7710	~	7296	7780
Marcellus	7296	7780	~	7286	11886
TD	7286	11886			

* From Pilot Hole Log and Driller's Log

~ From MWD Gamma Log

Hydraulic Fracturing Fluid Product Component Information Disclosure

Fracture Date:	1/9/2013
State:	West Virginia
County/Parish:	Wetzel County
API Number:	4710302681
Operator Name:	Stone Energy
Well Name and Number:	Mills Wetzel #15H
Longitude:	-80.656955
Latitude:	39.521239
Long/Lat Projection:	NAD27
Production Type:	Gas
True Vertical Depth (TVD):	7323
Total Water Volume (gal)*:	5169867

Hydraulic Fracturing Fluid Composition

Trade Name	Supplier	Purpose	Ingredients	Chemical Abstract Service Number (CAS #)	Maximum Ingredient Concentration in Additive (% by mass)**	Maximum Ingredient Concentration in HF Fluid (% by mass)**	Comments
Slickwater, SAPPHIRE VF	Schlumberger	Corrosion Inhibitor, Bactericide (Myacide GA25), Scale Inhibitor, Antifoam Agent, Surfactant, Acid, Friction Reducer, Rheology Modifier ClearFRAC XT J589, Gelling Agent, Iron Control Agent, Clay Control Agent, Accelerator, Fluid Loss Additive, Propping Agent	Water (Including Mix Water Supplied by Client)*	-		88.67578%	
			Crystalline silica	14808-60-7	98.24736%	11.12574%	
			Hydrochloric acid	7647-01-0	0.88117%	0.09979%	
			Erucic amidopropyl dimethyl betaine	149879-98-1	0.53395%	0.06047%	
			Propan-2-ol	67-63-0	0.38820%	0.04396%	
			Ammonium sulfate	Proprietary	0.30520%	0.03456%	
			Calcium chloride	10043-52-4	0.08840%	0.01001%	
			Glutaraldehyde	111-30-8	0.05159%	0.00584%	
			Polyethylene glycol monohexyl ether	31726-34-8	0.03924%	0.00444%	
			Ethane-1,2-diol	107-21-1	0.00536%	0.00061%	
			Trisodium ortho phosphate	7601-54-9	0.00536%	0.00061%	
			Methanol	67-56-1	0.00417%	0.00047%	
			Sodium erythorbate	6381-77-7	0.00336%	0.00038%	
			Aliphatic acids	Proprietary	0.00313%	0.00035%	
			Aliphatic alcohols, ethoxylated #2	Proprietary	0.00313%	0.00035%	
			Prop-2-yn-1-ol	107-19-7	0.00104%	0.00012%	
			Silicane derivative	Proprietary	0.00009%	0.00001%	

* Total Water Volume sources may include fresh water, produced water, and/or recycled water

** Information is based on the maximum potential for concentration and thus the total may be over 100%

Report ID: RPT-11274 (Generated on 3/5/2013 2:18 PM)

All component information listed was obtained from the supplier's Material Safety Data Sheets (MSDS). As such, the Operator is not responsible for inaccurate and/or incomplete information. Any questions regarding the content of the MSDS should be directed to the supplier who provided it. The Occupational Safety and Health Administration's (OSHA) regulations govern the criteria for the disclosure of this information. Please note that Federal Law protects "proprietary", "trade secret", and "confidential business information" and the criteria for how this information is reported on an MSDS is subject to 29 CFR 1910.1200(i) and Appendix D.

03/07/2014

Company:	Stone Energy	Local Co-ordinate Reference:	Well Mills Wetzel #15H - Slot MW#15H
Project:	Heather Prospect (NAD 27)	TVD Reference:	Saxon 141 @ 1321.0usft (18' RKB - 1303' GL)
Site:	Mills Wetzel Pad 2	MD Reference:	Saxon 141 @ 1321.0usft (18' RKB - 1303' GL)
Well:	Mills Wetzel #15H	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 #15H - Slot MW#15H					
Well Position	+N/-S	0.0 usft	Northing:	374,057.99 usft	Latitude:	39° 31' 16.459 N
	+E/-W	0.0 usft	Easting:	1,673,631.07 usft	Longitude:	80° 39' 25.037 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	05/30/12	-8.53	67.17	52,646

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	347.58	

Survey Program	Date	08/03/12			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
100.0	5,008.1	SDI Keeper Gyro (Original Well)	SDI Standard Keeper 103	SDI Standard Wireline Keeper ver 1.0.3	
5,071.0	11,886.0	SDI MWD (Original Well)	MWD SDI	MWD - Standard ver 1.0.1	

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)	
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00	
100.0	0.30	183.95	100.0	-0.3	0.0	-0.3	0.30	0.30	0.00	
200.0	0.15	197.59	200.0	-0.6	-0.1	-0.6	0.16	-0.15	13.64	
300.0	0.11	355.46	300.0	-0.7	-0.1	-0.6	0.26	-0.04	157.87	
400.0	0.21	197.93	400.0	-0.8	-0.2	-0.7	0.31	0.10	-157.53	
500.0	0.00	163.94	500.0	-0.9	-0.2	-0.9	0.21	-0.21	0.00	
600.0	0.04	250.62	600.0	-0.9	-0.3	-0.9	0.04	0.04	0.00	
700.0	0.09	244.43	700.0	-1.0	-0.4	-0.9	0.05	0.05	-6.19	
800.0	0.20	301.82	800.0	-0.9	-0.6	-0.8	0.17	0.11	57.39	
900.0	0.13	306.42	900.0	-0.8	-0.8	-0.6	0.07	-0.07	4.60	

Company:	Stone Energy	Local Co-ordinate Reference:	Well Mills Wetzel #15H - Slot MW#15H
Project:	Heather Prospect (NAD 27)	TVD Reference:	Saxon 141 @ 1321.0usft (18' RKB - 1303' GL)
Site:	Mills Wetzel Pad 2	MD Reference:	Saxon 141 @ 1321.0usft (18' RKB - 1303' GL)
Well:	Mills Wetzel #15H	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)
1,000.0	0.15	296.02	1,000.0	-0.6	-1.0	-0.4	0.03	0.02	-10.40
1,100.0	0.10	218.56	1,100.0	-0.7	-1.2	-0.4	0.16	-0.05	-77.46
1,200.0	0.15	156.72	1,200.0	-0.8	-1.2	-0.6	0.14	0.05	-61.84
1,300.0	0.01	241.76	1,300.0	-1.0	-1.2	-0.7	0.15	-0.14	85.04
1,400.0	0.08	345.46	1,400.0	-0.9	-1.2	-0.6	0.08	0.07	103.70
1,500.0	0.17	0.73	1,500.0	-0.7	-1.2	-0.4	0.10	0.09	15.27
1,600.0	0.23	109.51	1,600.0	-0.6	-1.0	-0.4	0.33	0.06	108.78
1,700.0	0.27	129.18	1,700.0	-0.8	-0.7	-0.7	0.09	0.04	19.67
1,800.0	0.24	87.87	1,800.0	-1.0	-0.3	-0.9	0.18	-0.03	-41.31
1,900.0	0.28	134.68	1,900.0	-1.1	0.1	-1.1	0.21	0.04	46.81
2,000.0	0.49	154.74	2,000.0	-1.7	0.5	-1.7	0.25	0.21	20.06
2,100.0	0.53	167.58	2,100.0	-2.5	0.8	-2.6	0.12	0.04	12.84
2,200.0	0.59	181.51	2,200.0	-3.5	0.8	-3.6	0.15	0.06	13.93
2,300.0	0.60	201.52	2,300.0	-4.5	0.6	-4.5	0.21	0.01	20.01
2,400.0	0.53	231.13	2,400.0	-5.3	0.1	-5.2	0.30	-0.07	29.61
2,500.0	0.53	247.41	2,500.0	-5.7	-0.7	-5.5	0.15	0.00	16.28
2,600.0	0.19	262.70	2,600.0	-5.9	-1.3	-5.5	0.35	-0.34	15.29
2,700.0	0.33	294.28	2,700.0	-5.8	-1.7	-5.3	0.20	0.14	31.58
2,800.0	0.72	301.24	2,800.0	-5.4	-2.5	-4.7	0.39	0.39	6.96
2,900.0	1.44	342.62	2,899.9	-3.9	-3.4	-3.0	1.02	0.72	41.38
3,000.0	2.49	358.33	2,999.9	-0.5	-3.9	0.3	1.17	1.05	15.71
3,100.0	2.92	356.02	3,099.8	4.2	-4.1	5.0	0.44	0.43	-2.31
3,200.0	3.84	9.46	3,199.6	10.1	-3.7	10.6	1.21	0.92	13.44
3,300.0	3.83	36.57	3,299.4	16.0	-1.2	15.9	1.80	-0.01	27.11
3,400.0	4.58	46.38	3,399.1	21.5	3.7	20.2	1.04	0.75	9.81
3,500.0	5.40	48.83	3,498.7	27.3	10.1	24.5	0.85	0.82	2.45
3,600.0	6.84	49.42	3,598.2	34.3	18.2	29.6	1.44	1.44	0.59
3,700.0	7.83	54.24	3,697.3	42.2	28.2	35.1	1.16	0.99	4.82
3,800.0	8.59	57.59	3,796.3	50.1	40.1	40.4	0.90	0.76	3.35
3,900.0	9.67	56.25	3,895.1	58.8	53.4	46.0	1.10	1.08	-1.34
4,000.0	10.72	53.45	3,993.5	69.0	67.8	52.8	1.16	1.05	-2.80
4,100.0	11.60	58.09	4,091.6	79.9	83.8	60.0	1.26	0.88	4.64
4,200.0	12.84	55.92	4,189.3	91.4	101.6	67.4	1.32	1.24	-2.17
4,300.0	13.39	50.34	4,286.7	105.0	119.7	76.8	1.38	0.55	-5.58
4,400.0	13.32	41.12	4,384.0	121.1	136.2	89.0	2.13	-0.07	-9.22
4,500.0	14.17	39.20	4,481.2	139.3	151.5	103.4	0.96	0.85	-1.92
4,600.0	15.32	37.48	4,577.9	159.2	167.2	119.5	1.23	1.15	-1.72
4,700.0	16.32	37.30	4,674.1	180.9	183.8	137.1	1.00	1.00	-0.18
4,800.0	17.93	38.17	4,769.6	204.2	201.8	156.0	1.63	1.61	0.87
4,900.0	18.95	38.91	4,864.5	228.9	221.5	175.9	1.05	1.02	0.74
5,008.1	19.76	42.51	4,966.5	256.0	244.9	197.4	1.33	0.75	3.33
5,071.0	19.08	41.26	5,025.8	271.6	258.9	209.6	1.27	-1.08	-1.99
5,135.0	17.79	42.88	5,086.5	286.6	272.4	221.3	2.17	-2.02	2.53

Company:	Stone Energy	Local Co-ordinate Reference:	Well Mills Wetzel #15H - Slot MW#15H
Project:	Heather Prospect (NAD 27)	TVD Reference:	Saxon 141 @ 1321.0usft (18' RKB - 1303' GL)
Site:	Mills Wetzel Pad 2	MD Reference:	Saxon 141 @ 1321.0usft (18' RKB - 1303' GL)
Well:	Mills Wetzel #15H	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)
5,196.0	16.27	45.92	5,144.9	299.4	284.9	231.1	2.89	-2.49	4.98
5,257.0	17.59	39.37	5,203.2	312.5	296.9	241.3	3.80	2.16	-10.74
5,318.0	18.83	34.50	5,261.2	327.7	308.3	253.7	3.22	2.03	-7.98
5,380.0	19.45	31.99	5,319.7	344.7	319.5	267.9	1.66	1.00	-4.05
5,442.0	18.88	33.18	5,378.3	361.9	330.4	282.3	1.11	-0.92	1.92
5,503.0	19.19	33.81	5,436.0	378.5	341.4	296.2	0.61	0.51	1.03
5,565.0	19.58	36.72	5,494.4	395.3	353.3	310.0	1.68	0.63	4.69
5,626.0	18.76	43.80	5,552.1	410.5	366.2	322.2	4.04	-1.34	11.61
5,688.0	17.15	45.66	5,611.1	424.1	379.6	332.5	2.76	-2.60	3.00
5,750.0	16.22	44.64	5,670.4	436.7	392.2	342.1	1.57	-1.50	-1.65
5,811.0	16.19	43.36	5,729.0	448.9	404.1	351.5	0.59	-0.05	-2.10
5,871.0	17.25	41.83	5,786.5	461.6	415.7	361.4	1.91	1.77	-2.55
5,933.0	17.28	42.49	5,845.7	475.3	428.1	372.1	0.32	0.05	1.06
5,994.0	16.91	44.37	5,904.0	488.3	440.4	382.1	1.09	-0.61	3.08
6,057.0	16.73	42.83	5,964.3	501.5	453.0	392.3	0.76	-0.29	-2.44
6,118.0	17.15	44.49	6,022.6	514.3	465.3	402.2	1.05	0.69	2.72
6,179.0	17.06	46.27	6,081.0	526.9	478.0	411.8	0.87	-0.15	2.92
6,240.0	16.80	44.30	6,139.3	539.4	490.7	421.3	1.03	-0.43	-3.23
6,304.0	16.71	42.70	6,200.6	552.8	503.4	431.6	0.73	-0.14	-2.50
6,367.0	16.71	40.80	6,260.9	566.3	515.4	442.2	0.87	0.00	-3.02
6,431.0	17.87	38.99	6,322.0	580.9	527.6	453.9	2.00	1.81	-2.83
6,494.0	19.04	38.56	6,381.8	596.5	540.1	466.4	1.87	1.86	-0.68
6,558.0	20.99	35.51	6,441.9	614.0	553.3	480.6	3.46	3.05	-4.77
6,590.0	21.75	35.10	6,471.7	623.5	560.0	488.5	2.42	2.38	-1.28
6,621.0	21.22	34.01	6,500.6	632.8	566.4	496.2	2.14	-1.71	-3.52
6,653.0	21.15	32.78	6,530.4	642.5	572.8	504.3	1.41	-0.22	-3.84
6,685.0	21.73	31.80	6,560.2	652.4	579.0	512.6	2.13	1.81	-3.06
6,717.0	22.73	29.96	6,589.8	662.8	585.3	521.4	3.81	3.13	-5.75
6,749.0	24.31	30.24	6,619.2	673.8	591.7	530.8	4.95	4.94	0.88
6,781.0	26.65	31.14	6,648.0	685.7	598.7	540.8	7.41	7.31	2.81
6,812.0	28.65	31.48	6,675.5	697.9	606.2	551.2	6.47	6.45	1.10
6,844.0	29.92	31.56	6,703.4	711.3	614.4	562.5	3.97	3.97	0.25
6,876.0	31.44	32.23	6,730.9	725.1	623.0	574.2	4.87	4.75	2.09
6,908.0	32.47	31.73	6,758.1	739.5	632.0	586.3	3.32	3.22	-1.56
6,940.0	33.21	32.98	6,785.0	754.2	641.2	598.6	3.14	2.31	3.91
6,972.0	33.56	33.04	6,811.7	768.9	650.8	611.0	1.10	1.09	0.19
7,003.0	34.87	31.94	6,837.3	783.6	660.2	623.3	4.67	4.23	-3.55
7,035.0	37.14	30.79	6,863.2	799.7	670.0	636.9	7.40	7.09	-3.59
7,067.0	38.22	29.20	6,888.5	816.6	679.8	651.3	4.54	3.38	-4.97
7,098.0	39.01	24.12	6,912.8	833.9	688.4	666.3	10.54	2.55	-16.39
7,130.0	38.78	19.39	6,937.7	852.6	695.9	683.0	9.31	-0.72	-14.78
7,162.0	40.08	16.45	6,962.4	871.9	702.1	700.5	7.11	4.06	-9.19
7,193.0	40.89	15.25	6,986.0	891.3	707.6	718.2	3.63	2.61	-3.87

Company:	Stone Energy	Local Co-ordinate Reference:	Well Mills Wetzel #15H - Slot MW#15H
Project:	Heather Prospect (NAD 27)	TVD Reference:	Saxon 141 @ 1321.0usft (18' RKB - 1303' GL)
Site:	Mills Wetzel Pad 2	MD Reference:	Saxon 141 @ 1321.0usft (18' RKB - 1303' GL)
Well:	Mills Wetzel #15H	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)
7,225.0	42.23	15.02	7,009.9	911.8	713.1	737.0	4.21	4.19	-0.72
7,257.0	44.34	14.32	7,033.2	933.0	718.7	756.6	6.76	6.59	-2.19
7,289.0	47.32	13.46	7,055.5	955.3	724.2	777.1	9.51	9.31	-2.69
7,321.0	49.85	11.40	7,076.7	978.7	729.4	798.9	9.26	7.91	-6.44
7,353.0	52.42	8.33	7,096.8	1,003.2	733.6	822.0	10.97	8.03	-9.59
7,385.0	53.34	4.68	7,116.1	1,028.6	736.5	846.1	9.54	2.88	-11.41
7,416.0	55.09	2.24	7,134.2	1,053.7	738.0	870.3	8.52	5.65	-7.87
7,447.0	56.26	359.77	7,151.7	1,079.3	738.5	895.2	7.59	3.77	-7.97
7,479.0	57.31	358.11	7,169.2	1,106.0	738.0	921.4	5.44	3.28	-5.19
7,511.0	59.25	355.45	7,186.0	1,133.2	736.4	948.3	9.31	6.06	-8.31
7,542.0	60.36	354.45	7,201.6	1,159.9	734.1	974.9	4.54	3.58	-3.23
7,573.0	61.66	353.41	7,216.7	1,186.9	731.2	1,001.8	5.12	4.19	-3.35
7,605.0	63.38	352.32	7,231.4	1,215.0	727.7	1,030.1	6.17	5.38	-3.41
7,637.0	65.20	350.76	7,245.3	1,243.5	723.4	1,058.9	7.19	5.69	-4.88
7,669.0	66.91	349.65	7,258.3	1,272.4	718.4	1,088.1	6.21	5.34	-3.47
7,701.0	68.53	347.95	7,270.4	1,301.4	712.7	1,117.7	7.06	5.06	-5.31
7,733.0	70.41	345.99	7,281.6	1,330.6	705.9	1,147.6	8.21	5.88	-6.13
7,765.0	71.99	345.26	7,292.0	1,359.9	698.4	1,177.9	5.39	4.94	-2.28
7,796.0	75.32	344.56	7,300.7	1,388.7	690.7	1,207.6	10.96	10.74	-2.26
7,828.0	77.60	342.79	7,308.2	1,418.5	681.9	1,238.7	8.93	7.13	-5.53
7,860.0	80.96	341.29	7,314.1	1,448.4	672.2	1,269.9	11.47	10.50	-4.69
7,891.0	84.08	339.01	7,318.2	1,477.3	661.8	1,300.4	12.43	10.06	-7.35
7,923.0	85.73	336.57	7,321.0	1,506.8	649.7	1,331.8	9.18	5.16	-7.63
7,955.0	88.55	335.33	7,322.6	1,536.0	636.7	1,363.1	9.62	8.81	-3.88
7,987.0	89.63	334.32	7,323.1	1,565.0	623.1	1,394.3	4.62	3.38	-3.16
8,019.0	90.60	334.50	7,323.0	1,593.8	609.3	1,425.5	3.08	3.03	0.56
8,083.0	90.64	334.22	7,322.3	1,651.5	581.6	1,487.8	0.44	0.06	-0.44
8,146.0	89.06	333.10	7,322.5	1,708.0	553.6	1,548.9	3.07	-2.51	-1.78
8,209.0	90.47	333.30	7,322.8	1,764.2	525.2	1,610.0	2.26	2.24	0.32
8,273.0	92.42	335.32	7,321.2	1,821.9	497.5	1,672.2	4.39	3.05	3.16
8,336.0	92.02	335.03	7,318.7	1,879.0	471.1	1,733.7	0.78	-0.63	-0.46
8,400.0	90.54	334.97	7,317.3	1,937.0	444.0	1,796.1	2.31	-2.31	-0.09
8,463.0	90.97	335.33	7,316.5	1,994.1	417.6	1,857.7	0.89	0.68	0.57
8,526.0	89.09	335.89	7,316.4	2,051.5	391.5	1,919.3	3.11	-2.98	0.89
8,590.0	89.19	336.05	7,317.4	2,110.0	365.5	1,982.0	0.29	0.16	0.25
8,654.0	88.82	335.43	7,318.5	2,168.3	339.2	2,044.6	1.13	-0.58	-0.97
8,717.0	90.27	337.80	7,319.0	2,226.1	314.2	2,106.4	4.41	2.30	3.76
8,781.0	91.31	339.86	7,318.1	2,285.8	291.1	2,169.7	3.61	1.63	3.22
8,845.0	90.81	339.96	7,316.9	2,345.9	269.1	2,233.1	0.80	-0.78	0.16
8,908.0	90.24	338.57	7,316.4	2,404.8	246.8	2,295.4	2.38	-0.90	-2.21
8,972.0	90.34	338.57	7,316.0	2,464.4	223.4	2,358.6	0.16	0.16	0.00
9,035.0	89.26	338.06	7,316.2	2,522.9	200.1	2,420.8	1.90	-1.71	-0.81
9,099.0	89.19	335.63	7,317.1	2,581.7	175.0	2,483.7	3.80	-0.11	-3.80
9,162.0	88.32	332.06	7,318.5	2,638.3	147.2	2,544.9	5.83	-1.38	-5.67

Company:	Stone Energy	Local Co-ordinate Reference:	Well Mills Wetzel #15H - Slot MW#15H
Project:	Heather Prospect (NAD 27)	TVD Reference:	Saxon 141 @ 1321.0usft (18' RKB - 1303' GL)
Site:	Mills Wetzel Pad 2	MD Reference:	Saxon 141 @ 1321.0usft (18' RKB - 1303' GL)
Well:	Mills Wetzel #15H	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)
9,225.0	88.86	330.97	7,320.0	2,693.6	117.2	2,605.4	1.93	0.86	-1.73
9,289.0	89.90	329.81	7,320.7	2,749.3	85.6	2,666.5	2.43	1.63	-1.81
9,352.0	91.28	328.69	7,320.1	2,803.4	53.4	2,726.3	2.82	2.19	-1.78
9,416.0	92.49	328.22	7,318.0	2,857.9	19.9	2,786.8	2.03	1.89	-0.73
9,480.0	92.66	328.48	7,315.1	2,912.3	-13.7	2,847.1	0.49	0.27	0.41
9,544.0	91.11	326.39	7,313.0	2,966.2	-48.1	2,907.2	4.06	-2.42	-3.27
9,608.0	89.87	324.04	7,312.4	3,018.8	-84.6	2,966.3	4.15	-1.94	-3.67
9,671.0	90.67	323.65	7,312.1	3,069.7	-121.8	3,024.0	1.41	1.27	-0.62
9,735.0	91.35	325.61	7,311.0	3,121.8	-158.8	3,082.9	3.24	1.06	3.06
9,798.0	93.33	327.67	7,308.4	3,174.4	-193.4	3,141.7	4.53	3.14	3.27
9,862.0	93.00	327.62	7,304.9	3,228.4	-227.6	3,201.8	0.52	-0.52	-0.08
9,926.0	92.76	329.18	7,301.7	3,282.8	-261.1	3,262.2	2.46	-0.38	2.44
9,989.0	92.31	331.47	7,298.9	3,337.5	-292.3	3,322.3	3.70	-0.71	3.63
10,053.0	91.58	333.61	7,296.7	3,394.3	-321.7	3,384.0	3.53	-1.14	3.34
10,117.0	90.44	332.30	7,295.6	3,451.3	-350.8	3,446.0	2.71	-1.78	-2.05
10,180.0	90.07	331.44	7,295.3	3,506.8	-380.5	3,506.6	1.49	-0.59	-1.37
10,244.0	89.50	333.00	7,295.6	3,563.4	-410.4	3,568.3	2.60	-0.89	2.44
10,307.0	90.34	334.43	7,295.7	3,619.9	-438.3	3,629.5	2.63	1.33	2.27
10,370.0	91.38	334.56	7,294.7	3,676.8	-465.4	3,690.8	1.66	1.65	0.21
10,434.0	91.14	335.04	7,293.3	3,734.7	-492.6	3,753.2	0.84	-0.38	0.75
10,497.0	90.10	335.07	7,292.6	3,791.8	-519.2	3,814.7	1.65	-1.65	0.05
10,561.0	90.54	334.99	7,292.3	3,849.8	-546.2	3,877.2	0.70	0.69	-0.13
10,624.0	90.84	335.35	7,291.5	3,907.0	-572.7	3,938.7	0.74	0.48	0.57
10,687.0	91.11	335.53	7,290.4	3,964.3	-598.9	4,000.3	0.52	0.43	0.29
10,751.0	90.98	334.77	7,289.3	4,022.3	-625.7	4,062.8	1.20	-0.20	-1.19
10,815.0	90.10	336.47	7,288.7	4,080.6	-652.2	4,125.4	2.99	-1.38	2.66
10,878.0	90.40	335.98	7,288.4	4,138.3	-677.6	4,187.2	0.91	0.48	-0.78
10,942.0	89.97	335.32	7,288.2	4,196.6	-703.9	4,249.8	1.23	-0.67	-1.03
11,005.0	89.73	335.24	7,288.3	4,253.8	-730.3	4,311.3	0.40	-0.38	-0.13
11,069.0	90.44	335.93	7,288.3	4,312.1	-756.7	4,373.9	1.55	1.11	1.08
11,132.0	90.44	335.54	7,287.8	4,369.5	-782.6	4,435.6	0.62	0.00	-0.62
11,196.0	90.77	335.00	7,287.1	4,427.6	-809.4	4,498.1	0.99	0.52	-0.84
11,259.0	90.84	335.30	7,286.2	4,484.8	-835.9	4,559.6	0.49	0.11	0.48
11,323.0	90.67	334.74	7,285.4	4,542.8	-862.9	4,622.1	0.91	-0.27	-0.88
11,386.0	89.80	333.51	7,285.1	4,599.5	-890.4	4,683.4	2.39	-1.38	-1.95
11,449.0	89.50	333.51	7,285.5	4,655.9	-918.5	4,744.5	0.48	-0.48	0.00
11,512.0	89.29	332.83	7,286.2	4,712.1	-946.9	4,805.5	1.13	-0.33	-1.08
11,576.0	89.70	333.00	7,286.7	4,769.1	-976.1	4,867.4	0.69	0.64	0.27
11,639.0	89.80	332.79	7,287.0	4,825.2	-1,004.8	4,928.3	0.37	0.16	-0.33
11,703.0	89.97	331.91	7,287.1	4,881.8	-1,034.5	4,990.1	1.40	0.27	-1.38
11,766.0	90.27	332.38	7,287.0	4,937.5	-1,063.9	5,050.8	0.89	0.48	0.75
11,822.0	90.34	331.64	7,286.7	4,987.0	-1,090.2	5,104.8	1.33	0.13	-1.32
11,886.0	90.34	331.64	7,286.3	5,043.3	-1,120.6	5,166.3	0.00	0.00	0.00