

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

API 47-103-02759 County Wetzel District Green
Quad Pine Grove Pad Name Mills-Wetzel Field/Pool Name Heather
Farm name WV Conservation Commission Well Number #18H
Operator (as registered with the OOG) Stone Energy Corporation
Address 1300 Fort Pierpont Dr. - Suite 201 City Morgantown State WV Zip 26508

As Drilled location NAD 83/UTM Attach an as-drilled plat, profile view, and deviation survey
Top hole Northing 4,373,426 Easting 528,119
Landing Point of Curve Northing 4,373,154 Easting 528,300
Bottom Hole Northing 4,371,557 Easting 529,413

Elevation (ft) 1,293 GL Type of Well New Existing Type of Report Interim Final
Permit Type Deviated Horizontal Horizontal 6A Vertical Depth Type Deep Shallow
Type of Operation Convert Deepen Drill Plug Back Redrilling Rework Stimulate
Well Type Brine Disposal CBM Gas Oil Secondary Recovery Solution Mining Storage Other _____
Type of Completion Single Multiple Fluids Produced Brine Gas NGL Oil Other _____
Drilled with Cable Rotary

Drilling Media Surface hole Air Mud Fresh Water Intermediate hole Air Mud Fresh Water Brine
Production hole Air Mud Fresh Water Brine
Mud Type(s) and Additive(s)
Saturated salt mud which includes Caustic Soda, Barite, Lime, New-Drill, Perma-Lose HT, Xan-Plex D, X-Cide 102, Soda Ash, and Sodium Chloride

Date permit issued 6/13/2012 Date drilling commenced 10/18/2012 Date drilling ceased 5/23/2013
Date completion activities began 9/6/2013 Date completion activities ceased 1/31/2014
Verbal plugging (Y/N) N Date permission granted _____ Granted by _____

Please note: Operator is required to submit a plugging application within 5 days of verbal permission to plug

Freshwater depth(s) ft 65 Open mine(s) (Y/N) depths N
Salt water depth(s) ft 1,600 Void(s) encountered (Y/N) depths N
Coal depth(s) ft 1,020 Cavern(s) encountered (Y/N) depths N
Is coal being mined in area (Y/N) N

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Reviewed by:
A.L. 5/19/15
W.S. 4/21/15
06/12/2015

API 47-103 - 02759 Farm name WV Conservation Commission Well number #18H

CASING STRINGS	Hole Size	Casing Size	Depth	New or Used	Grade wt/ft	Basket Depth(s)	Did cement circulate (Y/ N) * Provide details below*
Conductor	24"	20"	40'	New	LS		Y - GTS
Surface	17.5"	13.375"	1,169'	New	J55	88' & 173'	Y - CTS
Coal	17.5"	13.375"	1,169'	New	J55		Y - CTS
Intermediate 1	12.25"	9.625"	2,797'	New	J55		Y - CTS
Intermediate 2							
Intermediate 3							
Production	8.75"	5.5"	14,101'	New	P110		Y
Tubing	N/A	2.375"	7,621'	New	N80		N/A
Packer type and depth set							

Comment Details 13.375" casing string circulated 36 bbls cement to surface, 9.625" casing cement to surface. 5.5" casing string circulated 1 bbl cement to surface.

CEMENT DATA	Class/Type of Cement	Number of Sacks	Slurry wt (ppg)	Yield (ft ³ /sks)	Volume (ft ³)	Cement Top (MD)	WOC (hrs)
Conductor	Type 1	34	15.6	1.18	40	Surface	24.0
Surface	Class "A"	980	15.6	1.19	1,166	Surface	8.0
Coal	Class "A"	980	15.6	1.19	1,166	Surface	8.0
Intermediate 1	Lead-FlexSeal Tail-Class "A"	Lead-540 Tail-420	Lead-15.0 Tail-15.5	Lead-1.26 Tail-1.19	Lead-680 Tail-500	Surface	12.0
Intermediate 2							
Intermediate 3							
Production	Lead-FlexSeal Tail-Class "A"	Lead-758 Tail-2,136	Lead-15.0 Tail-15.6	Lead-1.26 Tail-1.20	Lead-955 Tail-2,463	Surface	7.0
Tubing							

Drillers TD (ft) 14,113 MD / 7,365 TVD Loggers TD (ft) N/A
 Deepest formation penetrated Marcellus Shale Plug back to (ft) _____
 Plug back procedure _____

Kick off depth (ft) 6,508 MD / 6,496 TVD

Check all wireline logs run caliper density deviated/directional induction
 neutron resistivity gamma ray temperature sonic

Well cored Yes No Conventional Sidewall Were cuttings collected Yes No

DESCRIBE THE CENTRALIZER PLACEMENT USED FOR EACH CASING STRING Surface/Coal casing had bow spring centralizers placed on joints #'s 3, 6, 9, 12, 15, 18, 21 and 24. Intermediate casing had bow spring centralizers placed on joints #'s 5, 8, 11, 14, 17, 20, 23, 26, 29, 32, 35, 38, 41, 44, 47, 50, 53, 56, 59, 62 and 66. The production casing has rigid spiral alternating left/right centralizers placed beginning on joint #1 and then every fourth joint up to the top of curve at joint #177. From there bow spring centralizers were placed beginning on joint #181 and then every third joint to joint #274. A total of 45 rigid left/right centralizers were used and 32 bow spring centralizers were used. The joint numbers begin at TD of each individual casing string and increase as you climb towards the surface.

WAS WELL COMPLETED AS SHOT HOLE Yes No DETAILS _____

WAS WELL COMPLETED OPEN HOLE? Yes No DETAILS _____

WERE TRACERS USED Yes No TYPE OF TRACER(S) USED _____

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FEB 26 2015

API 47- 103 - 02759 Farm name WV Conservation Commission Well number #18H

PERFORATION RECORD

Stage No.	Perforation date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formation(s)
17	12/9/13	9,583	9,782	72	Marcellus Shale
18	12/10/13	9,315	9,508	72	Marcellus Shale
19	12/11/13	9,030	9,246	72	Marcellus Shale
20	12/12/13	8,756	8,958	72	Marcellus Shale
21	12/12/13	8,492	8,684	72	Marcellus Shale
22	12/13/13	8,756	8,958	72	Marcellus Shale
23	12/14/13	7,960	8,157	72	Marcellus Shale
24	12/16/13	7,673	7,891	72	Marcellus Shale

Please insert additional pages as applicable.

STIMULATION INFORMATION PER STAGE

Complete a separate record for each stimulation stage.

Stage No.	Stimulations Date	Ave Pump Rate (BPM)	Ave Treatment Pressure (PSI)	Max Breakdown Pressure (PSI)	ISIP (PSI)	Amount of Proppant (lbs)	Amount of Water (bbls)	Amount of Nitrogen/other (units)
17	12/10/13	80.4	7,320	6,373	4,631	409,500	8,267	
18	12/11/13	80.6	7,155	6,114	4,488	412,040	8,267	
19	12/12/13	75.7	7,979	7,379	5,888	96,260	5,522	
20	12/12/13	80.2	7,416	6,662	5,244	413,380	8,436	
21	12/13/13	80.0	7,394	6,424	5,470	409,660	8,360	
22	12/14/13	80.2	7,236	6,419	5,017	409,360	8,412	
23	12/16/13	80.2	7,296	7,241	4,676	410,940	8,139	
24	12/16/13	79.3	7,266	7,517	4,641	410,260	9,370	

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Office of Oil & Gas
FEB 26 2015

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PERFORATION RECORD

Stage No.	Perforation date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formation(s)
1	9/9/13	13,820	14,011	72	Marcellus Shale
2	11/21/13	13,555	13,749	72	Marcellus Shale
3	11/22/13	13,290	13,483	72	Marcellus Shale
4	11/23/13	13,025	13,221	72	Marcellus Shale
5	11/26/13	12,755	12,957	72	Marcellus Shale
6	11/28/13	12,480	12,683	72	Marcellus Shale
7	11/30/13	12,217	12,417	72	Marcellus Shale
8	12/1/13	11,967	12,146	72	Marcellus Shale
9	12/2/13	11,692	11,886	72	Marcellus Shale
10	12/3/13	11,424	11,622	72	Marcellus Shale
11	12/4/13	11,158	11,356	72	Marcellus Shale
12	12/5/13	10,906	11,092	72	Marcellus Shale
13	12/6/13	10,645	10,836	72	Marcellus Shale
14	12/7/13	10,374	10,576	72	Marcellus Shale
15	12/8/13	10,115	10,306	72	Marcellus Shale
16	12/9/13	9,845	10,043	72	Marcellus Shale

Please insert additional pages as applicable.

STIMULATION INFORMATION PER STAGE

Complete a separate record for each stimulation stage.

Stage No.	Stimulations Date	Ave Pump Rate (BPM)	Ave Treatment Pressure (PSI)	Max Breakdown Pressure (PSI)	ISIP (PSI)	Amount of Proppant (lbs)	Amount of Water (bbls)	Amount of Nitrogen/other (units)
1	11/21/13	84.9	7,991	6,529	4,117	359,340	8,336	
2	11/22/13	84.7	8,379	7,339	4,035	322,020	9,365	
3	11/23/13	82.1	8,204	7,602	4,450	409,903	8,384	
4	11/26/13	85.5	8,170	8,146	3,968	410,840	10,357	
5	11/28/13	85.5	8,015	8,009	3,885	406,880	8,382	
6	11/30/13	85.1	8,362	8,059	4,791	413,780	8,426	
7	12/1/13	84.8	8,132	6,586	4,488	248,000	7,011	
8	12/2/13	85.4	7,885	6,616	4,338	400,220	8,385	
9	12/3/13	80.8	7,592	6,527	4,376	406,820	8,300	
10	12/4/13	80.6	7,534	6,861	4,829	406,700	8,299	
11	12/5/13	78.1	7,905	7,409	4,488	402,780	8,329	
12	12/6/13	79.8	7,485	7,042	4,376	405,860	8,553	
13	12/7/13	79.8	7,558	6,445	5,205	411,000	8,275	
14	12/8/13	79.1	7,869	6,127	4,414	412,640	10,619	
15	12/9/13	84.3	7,615	6,834	4,602	406,440	9,597	
16	12/9/13	80.4	7,553	6,881	4,223	409,300	8,238	

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Received
Office of Oil & Gas

FEB 26 2015

06/12/2015

API 47- 103 - 02759 Farm name WV Conservation Commission Well number #18H

PRODUCING FORMATION(S)	DEPTHS
<u>Marcellus Shale</u>	<u>6,847' to 7,366'</u> TVD <u>6,881' to 14,011'</u> MD
_____	_____
_____	_____
_____	_____

Please insert additional pages as applicable.

GAS TEST Build up Drawdown Open Flow OIL TEST Flow Pump

SHUT-IN PRESSURE Surface 1,809 psi Bottom Hole 4,067 calculated psi DURATION OF TEST 245 hrs

OPEN FLOW Gas 3,499 mcfpd Oil _____ bpd NGL 9.5 bpd Water 305.5 bpd GAS MEASURED BY Estimated Orifice Pilot

LITHOLOGY/ FORMATION	TOP DEPTH IN FT NAME TVD	BOTTOM DEPTH IN FT TVD	TOP DEPTH IN FT MD	BOTTOM DEPTH IN FT MD	DESCRIBE ROCK TYPE AND RECORD QUANTITY AND TYPE OF FLUID (FRESHWATER, BRINE, OIL, GAS, H ₂ S, ETC)
	<u>0</u>		<u>0</u>		
See Attached Sheet	Page 6 of 14				

Please insert additional pages as applicable.

Drilling Contractor Nomac Drilling (top-hole) & Saxon Drilling (horizontal)
Address 171 Locust Ave. Ext. / 9303 New Trails Drive City Mount Morris / The Woodlands State PA / TX Zip 15349 / 77381

Logging Company Scientific Drilling and Schlumberger
Address 116 Vista Dr. / 1178 US HWY 33 East City Charleroi / Weston State PA / WV Zip 15022 / 26452

Cementing Company Schlumberger
Address 1178 US HWY 33 East City Weston State WV Zip 26452

Stimulating Company Schlumberger
Address 1178 US HWY 33 East City Weston / Jane Lew State WV Zip 26452

Please insert additional pages as applicable.

Completed by W. Lee Hornsby Telephone 304-225-1600
Signature *W. Lee Hornsby* Title Drilling Engineer Date 2/24/2015

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FEB 26 2015

Submittal of Hydraulic Fracturing Chemical Disclosure Information Attach copy of FRACFOCUS Registry

MILL-WETZEL #18H

API 47-103-02759

Stone Energy Corporation

	Horizontal		Bottom (ft TVD)	Bottom (ft MD)	
	Top (ft TVD)	Top (ft MD)			
Sandstone & Shale	Surface		*	1,025	FW @ 65'
Coal	1,020		*	1,025	
Sandstone & Shale	1,025		*	2,190	SW @ 1,600'
Little Lime	2,190		*	2,220	
Big Lime	2,220		*	2,365	
Big Injun	2,365		*	2,422	
Sandstone & Shale	2,422		*	2,851	
Berea Sandstone	2,851		*	2,881	
Shale	2,881		*	3,055	
Gordon	3,055		*	3,105	
Undiff Devonian Shale	3,105		*	5,358	
Riley Shale	5,358		*	5,465	
Benson Siltstone	5,465		*	5,713	
Pipe Creek Shale	5,713		*	5,722	
Undiff Devonian Shale	5,722		~	6,495	6,508
Rhinestreet	6,595	6,508		6,789	6,817
Undiff Devonian Shale	6,789	6,817		6,988	7,046
Cashaqua	6,988	7,046		7,014	7,108
Middlesex	7,014	7,108		7,077	7,158
West River	7,077	7,158		7,165	7,293
Geneseo	7,165	7,293		7,192	7,332
Tully Limestone	7,192	7,332		7,216	7,374
Hamilton Shale	7,216	7,374		7,279	7,551
Marcellus	7,279	7,551		7,365	14,133
TD				7,365	14,133

* From Pilot Hole Log and Driller's Log

~ From MWD Gamma Log

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Office of Oil & Gas

FEB 26 2015

06/12/2015

Hydraulic Fracturing Fluid Product Component Information Disclosure

Fracture Date:	12/16/2013
State:	West Virginia
County/Parish:	Wetzel County
API Number:	47-103-02759
Operator Name:	Stone Energy
Well Name and Number:	Mills-Wetzel #18H
Longitude:	528,119
Latitude:	4,373,426
Long/Lat Projection:	
Production Type:	
True Vertical Depth (TVD):	0
Total Water Volume (gal)*:	8552101

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
H015%, Slickwater, WF115, Sapphire VF105	Schlumberger	Corrosion Inhibitor, Bactericide (Myacide GA25), Scale Inhibitor, Surfactant, Acid, Breaker, Gelling Agent, Friction Reducer, Rheology Modifier, Iron Control Agent, Clay Control Agent, Accelerator, Propping Agent, Fluid Loss	Water (Including Mix Water Supplied by Client)*	NA		88.44464%	
			Crystalline silica	14808-60-7	98.21064%	11.34859%	
			Hydrochloric acid	7647-01-0	0.84075%	0.09715%	
			Carbohydrate polymer	Proprietary	0.43414%	0.05017%	
			Ammonium sulfate	Proprietary	0.19226%	0.02222%	
			Calcium chloride	10043-52-4	0.15663%	0.01810%	
			Fatty acid amidoalkyl betaine	Proprietary	0.13790%	0.01594%	
			Propan-2-ol	67-63-0	0.10254%	0.01185%	
			Polyethylene glycol monohexyl ether	31726-34-8	0.06948%	0.00803%	
			Glutaraldehyde	111-30-8	0.05474%	0.00633%	
			Diammonium peroxidisulphate	7727-54-0	0.01934%	0.00223%	
			Polyethoxylated alkanol	Proprietary	0.01683%	0.00194%	
			2-butoxyethanol	111-76-2	0.00841%	0.00097%	
			Dicoco dimethyl quaternary ammonium chloride	61789-77-3	0.00534%	0.00062%	
			Butan-1-ol	71-36-3	0.00365%	0.00042%	
			Methanol	67-56-1	0.00339%	0.00039%	
			Ethane-1,2-diol	107-21-1	0.00338%	0.00039%	
			Trisodium ortho phosphate	7601-54-9	0.00338%	0.00039%	
			Sulfonated polystyrene	Proprietary	0.00334%	0.00039%	
			Polyethoxylated alkanol	Proprietary	0.00280%	0.00032%	
			Sodium erythorbate	6381-77-7	0.00271%	0.00031%	
			Aliphatic acids	Proprietary	0.00255%	0.00029%	
			Aliphatic alcohols, ethoxylated #2	Proprietary	0.00255%	0.00029%	
			Prop-2-yn-1-ol	107-19-7	0.00085%	0.00010%	

* 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%

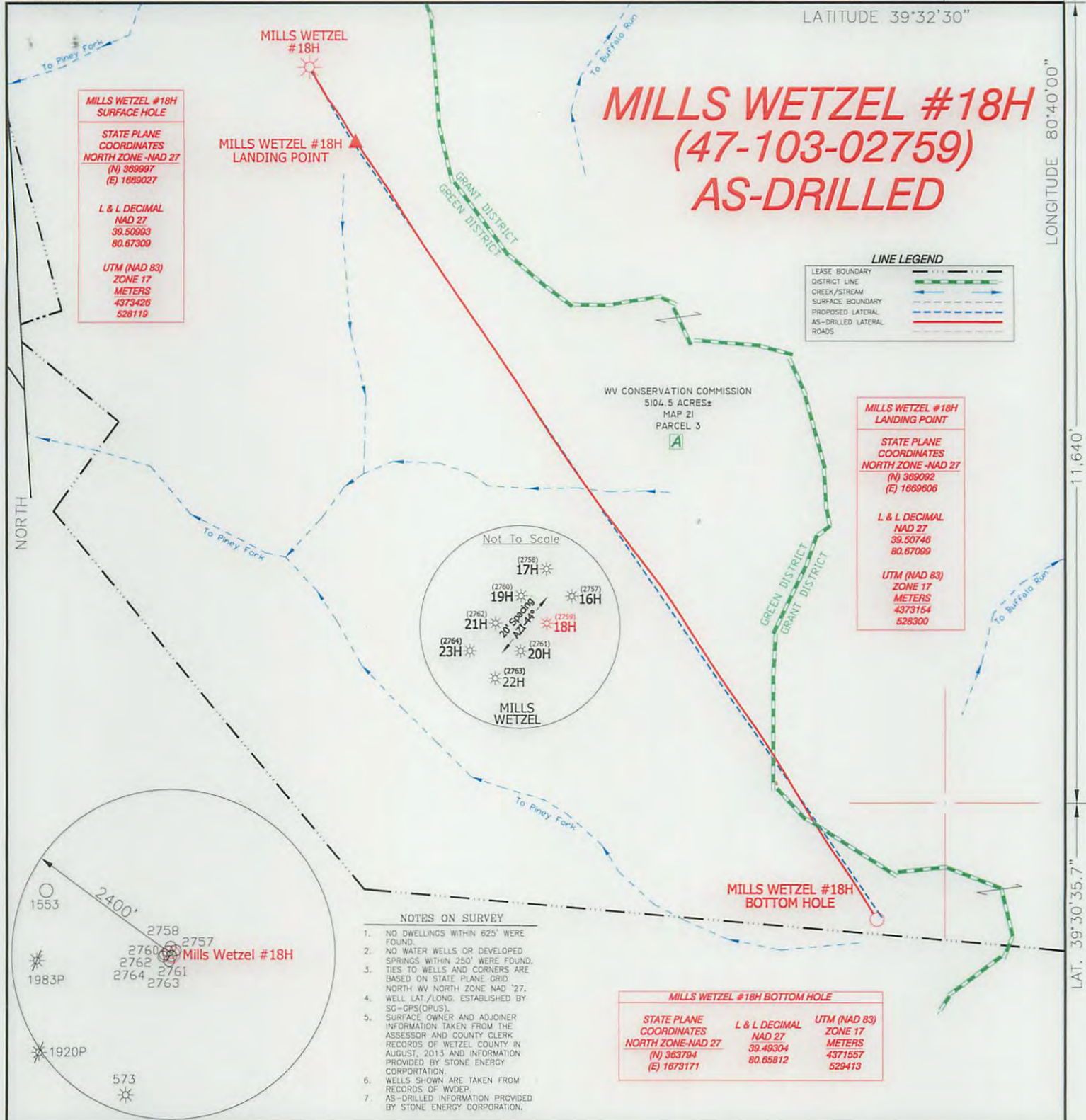
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All component information listed was obtained from the supplier's Material Safety Data Sheets (MSDS). As such, the Operator is not responsible for inaccurate and/or incomplete information. Any questions regarding the content of the MSDS should be directed 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.

06/12/2015



I THE UNDERSIGNED, HEREBY CERTIFY THAT THIS PLAT IS CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF AND SHOWS ALL THE INFORMATION REQUIRED BY LAW AND THE REGULATIONS ISSUED AND PRESCRIBED BY THE DIVISION OF ENVIRONMENTAL PROTECTION.



(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS.
 DATE DECEMBER 16, 20 14
 OPERATORS WELL NO. MILLS WETZEL #18H
 API WELL NO. 47-103-02759
 STATE COUNTY PERMIT

P.S. 834
 HUPP Surveying & Mapping
 P.O. Box 647 Grantsville, WV 26147
 (304) 354-7035 EMAIL: hupp@frontiernet.net

MINIMUM DEGREE OF ACCURACY 1/2500 FILE NO. W1719 (BK75-3)
 PROVEN SOURCE OF ELEVATION SG-GPS (OPUS) SCALE 1" = 1000'

STATE OF WEST VIRGINIA
 DIVISION OF ENVIRONMENTAL PROTECTION
 OFFICE OF OIL AND GAS

WELL TYPE : OIL GAS LIQUID INJECTION WASTE DISPOSAL IF "GAS" PRODUCTION STORAGE DEEP SHALLOW

LOCATION :
 ELEVATION 1293' WATERSHED TRIBUTARY OF PINEY FORK
 DISTRICT GREEN COUNTY WETZEL QUADRANGLE PINE GROVE 7.5'

SURFACE OWNER WEST VIRGINIA CONSERVATION COMMISSION ACREAGE 5104.5 ±
 ROYALTY OWNER MILLS WETZEL LAND Inc. LEASE ACREAGE 5104.5± **06/12/2015**

PROPOSED WORK :
 DRILL CONVERT DRILL DEEPER REDRILL FRACTURE OR STIMULATE PLUG OFF OLD FORMATION PERFORATE NEW FORMATION PLUG AND ABANDON CLEAN OUT AND REPLUG OTHER

PHYSICAL CHANGE IN WELL (SPECIFY) _____ TARGET FORMATION MARCELLUS
 ESTIMATED DEPTH 7,365' TVD 14,113' MD

WELL OPERATOR STONE ENERGY CORPORATION DESIGNATED AGENT TIM MCGREGOR
 ADDRESS P.O. BOX 52807 LAFAYETTE, LA 70508 ADDRESS 1300 FORT PIERPONT DR., SUITE 201 MORGANTOWN, WV 26508