

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

API 47-103-02763 County Wetzel District Green
Quad Pine Grove Pad Name Mills-Wetzel Field/Pool Name Heather
Farm name WV Conservation Commission Well Number #22H
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 4,373,417 Easting 528,111
Landing Point of Curve Northing 4,372,833 Easting 527,963
Bottom Hole Northing 4,371,822 Easting 528,664

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 11/15/2012 Date drilling ceased 6/21/2013
Date completion activities began 9/5/2013 Date completion activities ceased 1/19/2014
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 60 Open mine(s) (Y/N) depths N
Salt water depth(s) ft 1,900 Void(s) encountered (Y/N) depths N
Coal depth(s) ft 1,025 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. 6/10/15
06/12/2015

API 47-103 - 02763 Farm name WV Conservation Commission Well number #22H

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"	55'	New	LS		Y - GTS
Surface	17.5"	13.375"	1,288'	New	J55	131' & 217'	Y - CTS
Coal	17.5"	13.375"	1,288'	New	J55	131' & 217'	Y - CTS
Intermediate 1	12.25"	9.625"	2,773'	New	J55		Y - CTS
Intermediate 2							
Intermediate 3							
Production	8.75"	5.5"	12,441'	New	P110		Y
Tubing	N/A	2.375"	7,625'	New	N80		N/A
Packer type and depth set							

Comment Details 13.375" casing string circulated 32 bbls cement to surface, 9.625" casing string circulated 52 bbls cement to surface. 5.5" casing string TOC @ 878'.

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"	977	15.6	1.19	1,163	Surface	8.0
Coal	Class "A"	996	15.6	1.19	1,185	Surface	8.0
Intermediate 1	Lead-FlexSeal Tail-Class "A"	Lead-536 Tail-420	Lead-15.0 Tail-15.5	Lead-1.27 Tail-1.19	Lead-681 Tail-500	Surface	12.0
Intermediate 2							
Intermediate 3							
Production	Lead-FlexSeal Tail-Class "A"	Lead-673 Tail-1,817	Lead-15.0 Tail-15.6	Lead-1.25 Tail-1.19	Lead-841 Tail-2,162	878'	7.0
Tubing							

Drillers TD (ft) 12,442 MD / 7,377 TVD Loggers TD (ft) N/A
 Deepest formation penetrated Marcellus Shale Plug back to (ft) _____
 Plug back procedure _____

Kick off depth (ft) 6,249 MD / 6,214 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 5,7,9, 11, 13, 15, 17, 19, 21, 23, 25, 27 and 29. Intermediate casing had bow spring centralizers placed on joints #'s 3, 6, 9, 12, 15, 18, 21, 24, 27, 30, 33, 36, 39, 42, 45, 48, 51, 54, 57, 60 and 63. 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 #145. From there bow spring centralizers were placed beginning on joint #148 and then every seventh joint to joint #247. A total of 37 rigid left/right centralizers were used and 34 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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PERFORATION RECORD

Stage No.	Perforation date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formation(s)
1	9/11/13	12,055	12,255	72	Marcellus Shale
2	10/3/13	11,780	11,980	72	Marcellus Shale
3	10/4/13	11,511	11,713	72	Marcellus Shale
4	10/5/13	11,242	11,437	72	Marcellus Shale
5	10/6/13	10,963	11,173	72	Marcellus Shale
6	10/8/13	10,688	10,894	72	Marcellus Shale
7	10/9/13	10,407	10,618	72	Marcellus Shale
8	10/9/13	10,141	10,327	72	Marcellus Shale
9	10/10/13	9,876	10,068	72	Marcellus Shale
10	10/10/13	9,617	9,807	72	Marcellus Shale
11	10/11/13	9,355	9,547	72	Marcellus Shale
12	10/11/13	9,093	9,286	72	Marcellus Shale
13	10/12/13	8,833	9,040	72	Marcellus Shale
14	10/12/13	8,560	8,756	72	Marcellus Shale
15	10/13/13	8,360	8,494	72	Marcellus Shale
16	10/13/13	8,151	8,292	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	10/3/13	84.2	8,057	6,059	4,545	352,080	8,012	
2	10/4/13	85.3	7,808	5,929	4,441	410,960	8,314	
3	10/5/13	83.2	7,945	6,012	3,926	411,600	8,219	
4	10/6/13	85.5	7,750	6,123	4,269	408,500	8,340	
5	10/8/13	85.0	7,772	6,852	4,167	403,500	8,182	
6	10/9/13	85.2	7,766	6,980	3,993	412,620	8,269	
7	10/9/13	79.5	7,423	6,175	4,304	281,600	7,305	
8	10/10/13	80.8	7,410	5,670	4,374	406,460	8,137	
9	10/10/13	80.6	6,975	6,402	4,374	411,220	8,298	
10	10/11/13	80.6	7,267	5,520	4,409	409,140	8,171	
11	10/11/13	80.6	7,249	6,062	4,234	408,600	8,206	
12	10/12/13	80.5	7,115	6,445	4,269	409,980	8,215	
13	10/12/13	80.7	6,987	6,138	4,752	411,340	8,172	
14	10/13/13	80.4	6,970	6,444	4,157	412,320	8,495	
15	10/13/13	81.6	7,358	6,996	4,650	380,560	7,417	Received
16	10/14/13	80.6	7,397	6,774	4,650	375,220	7,900	Office of Oil & Gas

Please insert additional pages as applicable.

FEB 26 2015

06/12/2015

MILL-WETZEL #22H

API 47-103-02763

Stone Energy Corporation

	Horizontal		Bottom (ft TVD)	Bottom (ft MD)	
	Top (ft TVD)	Top (ft MD)			
Sandstone & Shale	Surface	*	1,025		FW @ 60'
Coal	1,025	*	1,030		
Sandstone & Shale	1,030	*	2,190		SW @ 1,900'
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	~	6,214	6,249	
Rhinestreet	6,214	6,249	~ 6,841	7,010	
Cashaqua	6,841	7,010	~ 6,903	7,121	
Middlesex	6,903	7,121	~ 7,055	7,443	
West River	7,055	7,443	~ 7,177	7,709	
Geneseo	7,177	7,709	~ 7,193	7,749	
Tully Limestone	7,193	7,749	~ 7,216	7,847	
Hamilton Shale	7,216	7,847	~ 7,279	8,107	
Marcellus	7,279	8,107	~ 7,377	12,442	
TD			7,377	12,442	

* From Pilot Hole Log and Driller's Log

~ From MWD Gamma Log

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FEB 26 2015

06/12/2015

Hydraulic Fracturing Fluid Product Component Information Disclosure

Fracture Date:	10/16/2013
State:	West Virginia
County/Parish:	Wetzel County
API Number:	47-103-02763
Operator Name:	Stone Energy
Well Name and Number:	Mills-Wetzel #22H
Longitude:	528,111
Latitude:	4,373,417
Long/Lat Projection:	
Production Type:	
True Vertical Depth (TVD):	0
Total Water Volume (gal)*:	5447676

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, H015%, WF115, SAPPHIRE VF 105	Schlumberger	Corrosion Inhibitor, Bactericide (Myacide GA25), Scale Inhibitor, AntiFoam Agent, Surfactant, Acid, Breaker, Gelling Agent, Friction Reducer, Rheology Modifier ClearFRAC XT J589, Iron Control Agent, Clay Control Agent, Fluid Loss Additive Propping	Water (Including Mix Water Supplied by Client)*	NA		87.66440%	
			Crystalline silica	14808-60-7	98.54497%	12.15612%	
			Hydrochloric acid	7647-01-0	0.71605%	0.08833%	
			Carbohydrate polymer	Proprietary	0.44021%	0.05430%	
			Ammonium sulfate	Proprietary	0.17339%	0.02139%	
			Polyethylene glycol monohexyl ether	31726-34-8	0.06845%	0.00844%	
			Glutaraldehyde	111-30-8	0.05184%	0.00640%	
			Diammonium peroxodisulfate	7727-54-0	0.02665%	0.00329%	
			Fatty acid amidoalkyl betaine	Proprietary	0.01667%	0.00206%	
			Calcium chloride	10043-52-4	0.01247%	0.00154%	
			Propan-2-ol	67-63-0	0.01179%	0.00145%	
			Polypropylene glycol	25322-69-4	0.00391%	0.00048%	
			Trisodium ortho phosphate	7601-54-9	0.00357%	0.00044%	
			Ethane-1,2-diol	107-21-1	0.00357%	0.00044%	
			Methanol	67-56-1	0.00330%	0.00041%	
			Sodium erythorbate	6381-77-7	0.00266%	0.00033%	
			Aliphatic acids	Proprietary	0.00247%	0.00031%	
			Aliphatic alcohols, ethoxylated #2	Proprietary	0.00247%	0.00031%	
			Prop-2-yn-1-ol	107-19-7	0.00082%	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%

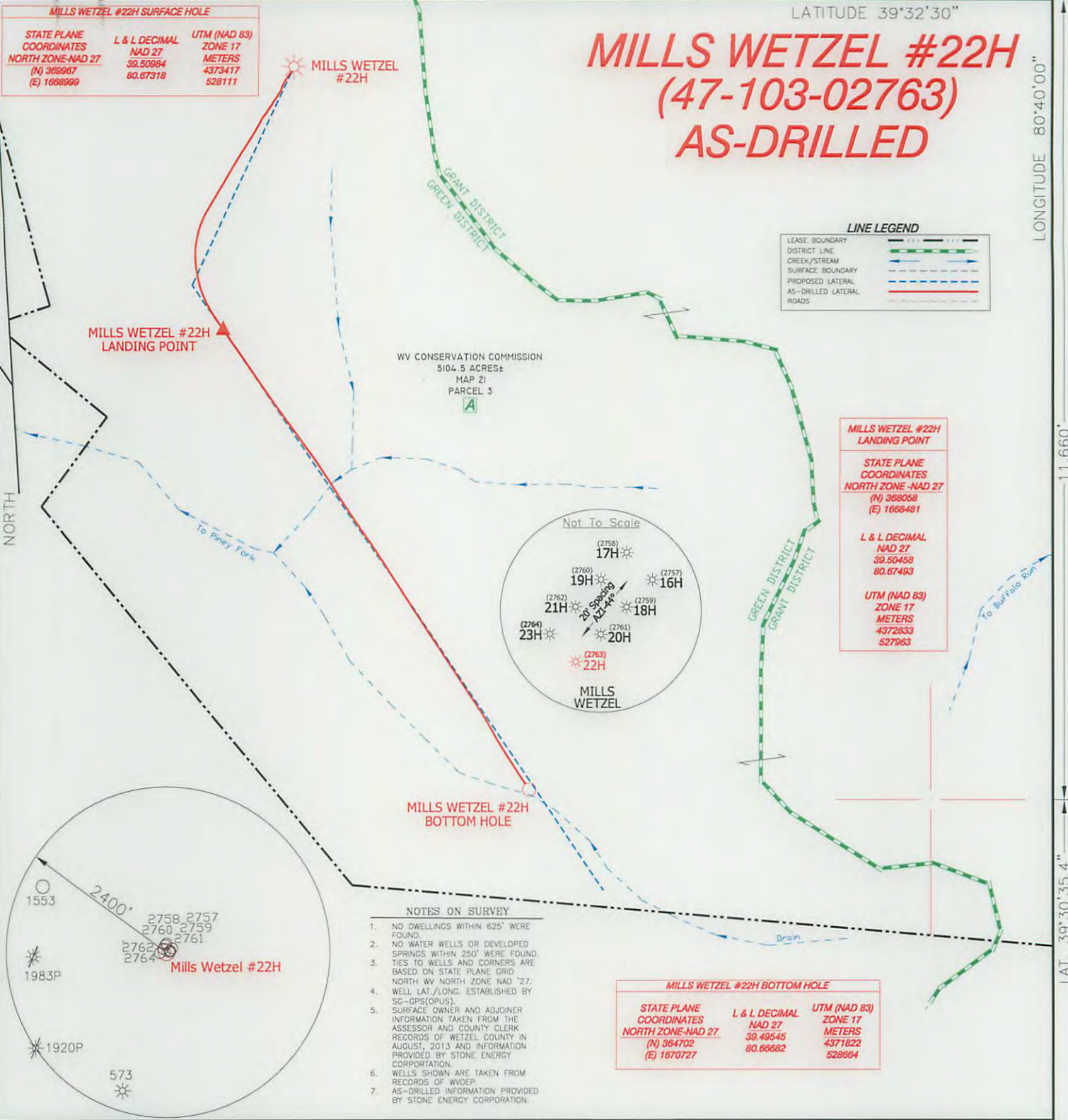
Report ID: RPT-19966 (Generated on 10/23/2013 3:58 PM)

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.

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FEB 26 2015

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.

P.S. 834

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



(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS.
 DATE DECEMBER 18, 2014
 OPERATORS WELL NO. MILLS WETZEL #22H
 API WELL NO. 47-103-02763
 STATE COUNTY PERMIT

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 7.376' TVD 12,442' 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

LONGITUDE 80°40'00" LAT. 39°30'35.4"

COUNTY NAME PERMIT