

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

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Office of Oil and Gas

FEB 12 2015

WV Department of
Environmental Protection

API 47-103-02794 County Wetzel District Green
Quad Porters Falls Pad Name Howell Field/Pool Name Mar
Farm name Howell, Charles and Ruth Well Number #7H
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 4,382,932 Easting 517,661
Landing Point of Curve Northing 4,383,393 Easting 517,609
Bottom Hole Northing 4,384,573 Easting 516,542

Elevation (ft) 1,302 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 8/23/2013 Date drilling commenced 11/19/2013 Date drilling ceased 12/9/2013
Date completion activities began 1/30/2014 Date completion activities ceased 11/11/2014
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 88 Open mine(s) (Y/N) depths N
Salt water depth(s) ft None Reported Void(s) encountered (Y/N) depths N
Coal depth(s) ft 990 Cavern(s) encountered (Y/N) depths N
Is coal being mined in area (Y/N) N

Reviewed by: A.L. 5/19/15
W.S. 6/01/15
06/12/2015

API 47- 103 - 02794 Farm name Howell, Charles and Ruth Well number #7H

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"	80'	New	LS		Y - GTS
Surface	17.5"	13.375"	1,310' KB 1,295' GL	New	J55	141' & 224'	Y - CTS
Coal	17.5"	13.375"	1,310' KB 1,295' GL	New	J55	141' & 224'	Y - CTS
Intermediate 1	12.25"	9.625"	2,394'	New	J55		Y - CTS
Intermediate 2							
Intermediate 3							
Production	8.75"	5.5"	12,967'	New	P110		N - TOC @ 600'
Tubing	N/A	2.375"	7,510'	New	N80		N/A
Packer type and depth set							

Comment Details Circulated 45 bbls cement to surface on the 13-3/8". Circulated 39 bbls cement to surface on the 9.625". Cement top on the 5.5" production casing is at 600'.

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"	990	15.6	1.19	1,178	Surface	8.0
Coal	Class "A"	990	15.6	1.19	1,178	Surface	8.0
Intermediate 1	Lead-FlexSeal Tail-Class "A"	Lead-600 Tail-433	Lead-15.0 Tail-15.6	Lead-1.27 Tail-1.19	Lead-762 Tail-515	Surface	12.0
Intermediate 2							
Intermediate 3							
Production	Lead-GasStop Tail-Class "A"	Lead-900 Tail-1,750	Lead-15.3 Tail-15.6	Lead-1.25 Tail-1.19	Lead-1,125 Tail-2,083	600'	8.0
Tubing							

Drillers TD (ft) 12,994 MD / 6,946 TVD Loggers TD (ft) N/A
 Deepest formation penetrated Marcellus Shale Plug back to (ft) _____
 Plug back procedure _____

Kick off depth (ft) 5,943 MD / 5,912 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 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28 and 30. Intermediate casing had bow spring centralizers placed on joints #s 5, 8, 10, 12, 14, 16, 19, 21, 24, 26, 28, 30, 32, 35, 38, 43, 46, 49, 52 and 55. Production casing had left/right rigid spiral centralizers were placed beginning on joint #1 and then every fourth joint up to the top of curve at joint #164. From there bow spring centralizers were placed beginning on joint #168 and then every fourth joint up to joint #232. A total of 42 rigid left/right centralizers were used and 17 bow spring centralizers were used. The joint numbers begin at TD of each individual casing string and increase as you increase as you come up the hole.

WAS WELL COMPLETED AS SHOT HOLE Yes No DETAILS RECEIVED Office of Oil and Gas

WAS WELL COMPLETED OPEN HOLE? Yes No DETAILS FEB 12 2015

WERE TRACERS USED Yes No TYPE OF TRACER(S) USED WV Department of Environmental Protection

API 47- 103 - 02794

Farm name Howell, Charles and Ruth

Well number #7H

PERFORATION RECORD

Stage No.	Perforation date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formation(s)
1	2/17/14	12,688	12,880	72	Marcellus Shale
2	2/23/14	12,422	12,613	72	Marcellus Shale
3	2/24/14	12,151	12,343	72	Marcellus Shale
4	2/26/14	11,891	12,083	72	Marcellus Shale
5	2/28/14	11,628	11,821	72	Marcellus Shale
6	3/1/14	11,365	11,557	72	Marcellus Shale
7	3/4/14	11,101	11,290	72	Marcellus Shale
8	3/6/14	10,832	11,033	72	Marcellus Shale
9	3/7/14	10,579	10,773	72	Marcellus Shale
10	3/8/14	10,321	10,513	72	Marcellus Shale
11	3/9/14	10,065	10,253	72	Marcellus Shale
12	3/11/14	9,801	9,993	72	Marcellus Shale
13	3/12/14	9,530	9,733	72	Marcellus Shale
14	3/15/15	9,271	9,463	72	Marcellus Shale
15	3/16/14	9,010	9,203	72	Marcellus Shale
16	3/17/14	8,751	8,943	72	Marcellus Shale

Please insert additional pages as applicable.

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STIMULATION INFORMATION PER STAGE

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Complete a separate record for each stimulation stage.

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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 Gas (units)
1	2/23/14	82.5	8,415	7,394	6,105	358,620	357,928	
2	2/24/14	80.1	8,214	5,507	5,393	410,820	356,319	
3	2/26/14	82.4	8,084	6,248	5,490	406,080	350,967	
4	2/28/14	85.5	8,082	6,666	4,458	407,400	348,800	
5	3/1/14	85.9	7,897	6,319	4,458	411,300	350,979	
6	3/4/14	84.2	7,971	6,984	4,947	420,300	352,127	
7	3/6/14	79.5	7,953	6,840	5,320	411,220	368,654	
8	3/7/14	80.3	7,528	5,867	5,416	411,160	352,693	
9	3/8/14	80.3	7,617	6,937	5,386	414,580	351,907	
10	3/9/14	80.7	7,674	6,381	6,037	412,320	345,226	
11	3/11/14	80.4	7,734	7,096	5,923	408,500	343,358	
12	3/12/14	80.1	7,593	6,950	4,804	413,140	337,047	
13	3/15/14	79.3	7,412	7,043	5,090	406,220	386,559	
14	3/16/14	81.0	7,362	7,021	4,374	416,115	345,876	
15	3/17/14	80.4	7,406	6,932	4,441	404,415	349,230	
16	3/19/14	79.6	7,330	6,253	5,150	410,177	338,118	

Please insert additional pages as applicable.

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PRODUCING FORMATION(S)	DEPTHS
Marcellus Shale	7,014' to 6,951' TVD 7,678' to 12,880' MD

Please insert additional pages as applicable.

GAS TEST Build up Drawdown Open Flow OIL TEST Flow Pump

SHUT-IN PRESSURE Surface 1,888 psi Bottom Hole 4,182 calculated psi DURATION OF TEST 48 hrs

OPEN FLOW Gas 2,783 mcfpd Oil bpd NGL 174 bpd Water 600 bpd GAS MEASURED BY Estimated Orifice Pilot

LITHOLOGY/ FORMATION	TOP	BOTTOM	TOP	BOTTOM	DESCRIBE ROCK TYPE AND RECORD QUANTITY AND TYPE OF FLUID (FRESHWATER, BRINE, OIL, GAS, H ₂ S, ETC)
	DEPTH IN FT NAME TVD	DEPTH IN FT TVD	DEPTH IN FT MD	DEPTH IN FT MD	
	0		0		
See Attached Sheet	Page 6 of 16				

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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 and Halliburton
Address 1178 US HWY 33 East City Weston / Jane Lew State WV Zip 26452

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

Please insert additional pages as applicable.

Completed by W. Lee Hornsby Telephone 304-225-1600
Signature  Title Drilling Engineer Date 2/3/2015

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

06/12/2015

HOWELL #7H
 API 47-103-02794
 Stone Energy Corporation

	Horizontal				
	Top (ft TVD)	Top (ft MD)	Bottom (ft TVD)	Bottom (ft MD)	
Sandstone & Shale	Surface		*	990	FW @ 88
Coal	990		*	993	
Sandstone & Shale	993		*	2,146	No SW Reported
Little Lime	2,146		*	2,200	
Big Lime	2,200		*	2,253	
Big Injun	2,253		*	2,296	
Sandstone & Shale	2,296		*	2,851	
Berea Sandstone	2,851		*	2,881	
Shale	2,881		*	3,045	
Gordon	3,045		*	3,095	
Undiff Devonian Shale	3,095		*	6,296	6,339
Rhinestreet	6,296	6,339	~	6,627	6,732
Cashaqua	6,627	6,732	~	6,666	6,785
Middlesex	6,666	6,785	~	6,817	7,008
West River	6,817	7,008	~	6,832	7,033
Undiff Devonian Shale	6,832	7,033	~	6,898	7,152
Geneseo	6,898	7,152	~	6,910	7,180
Tully Limestone	6,910	7,180	~	6,921	7,200
Hamilton Shale	6,921	7,200	~	6,995	7,446
Marcellus	6,995	7,446	~	6,946	12,994
TD				6,946	12,994

* From Pilot Hole Log and Driller's Log

~ From MWD Gamma Log

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Hydraulic Fracturing Fluid Product Component Information Disclosure

Fracture Date:	3/24/2014
State:	West Virginia
County/Parish:	Wetzel County
API Number:	
Operator Name:	Stone Energy
Well Name and Number:	Howell 7H
Longitude:	
Latitude:	
Long/Lat Projection:	
Production Type:	
True Vertical Depth (TVD):	0
Total Water Volume (gal)*:	7013953

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	Schlumberger	Corrosion Inhibitor, Bactericide (Myacide GA25), Scale Inhibitor, AntiFoam Agent, Surfactant , Acid, Breaker, Gelling Agent, Friction Reducer, Iron Control Agent, Clay Control Agent, Buffer, Accelerator, Fluid Loss Additive , Propping	Water (Including Mix Water Supplied by Client)*	NA		87.58849%	
			Crystalline silica	14808-60-7	98.35667%	12.20755%	
			Hydrochloric acid	7647-01-0	0.80183%	0.09952%	
			Carbohydrate polymer	Proprietary	0.49383%	0.06129%	
			Ammonium sulfate	Proprietary	0.18000%	0.02234%	
			Polyethylene glycol monohexyl ether	31726-34-8	0.06763%	0.00839%	
			Calcium chloride	10043-52-4	0.06642%	0.00824%	
			Glutaraldehyde	111-30-8	0.05491%	0.00682%	
			Diammonium peroxydisulfate	7727-54-0	0.02272%	0.00282%	
			Sodium carbonate	497-19-8	0.01326%	0.00165%	
			Dicoco dimethyl quaternary ammonium chloride	61789-77-3	0.00520%	0.00065%	
			Ethane-1,2-diol	107-21-1	0.00365%	0.00045%	
			Trisodium ortho phosphate	7601-54-9	0.00365%	0.00045%	
			Methanol	67-56-1	0.00333%	0.00041%	
			Sodium erythorbate	6381-77-7	0.00272%	0.00034%	
			Aliphatic alcohols, ethoxylated #2	Proprietary	0.00250%	0.00031%	
			Aliphatic acids	Proprietary	0.00250%	0.00031%	
			Prop-2-yn-1-ol	107-19-7	0.00083%	0.00010%	
			Polypropylene glycol	25322-69-4	0.00037%	0.00005%	

* 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-25895 (Generated on 3/31/2014 10:58 AM)

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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HOWELL #7H BOTTOM HOLE

STATE PLANE COORDINATES	L & L DECIMAL	UTM (NAD 83)
NORTH ZONE -NAD 27	NAD 27	ZONE 17
(N) 407211	39.61067	4384573
(E) 1631645	80.80748	516542

HOWELL PAD
Not To Scale
AZI-354'-30" SPACING

7H (2794)	9H (2796)
5H (2838)	10H (2797)
3H (2799)	
1H (2798)	6H (2860)
2H (2859)	4H (2858)
8H-R (2920)	

HOWELL #7H (47-103-02794) AS-DRILLED

HOWELL #7H SURFACE HOLE

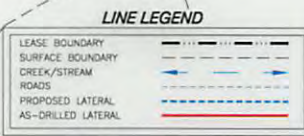
STATE PLANE COORDINATES	L & L DECIMAL	UTM (NAD 83)
NORTH ZONE -NAD 27	NAD 27	ZONE 17
(N) 401763	39.59586	4382932
(E) 1635229	80.79449	517661

HOWELL #7H LANDING POINT

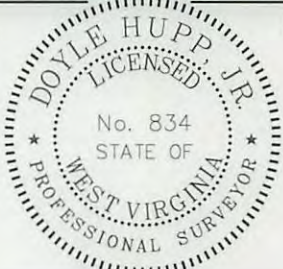
STATE PLANE COORDINATES	L & L DECIMAL	UTM (NAD 83)
NORTH ZONE -NAD 27	NAD 27	ZONE 17
(N) 403280	39.60002	4383393
(E) 1635084	80.79508	517609



- NOTES ON SURVEY**
1. NO DWELLINGS WITHIN 625' WERE FOUND.
 2. NO WATER WELLS OR DEVELOPED SPRINGS WITHIN 250' WERE FOUND.
 3. TIES TO WELLS AND CORNERS ARE BASED ON STATE PLANE GRID NORTH WV NORTH ZONE NAD '27.
 4. WELL LAT./LONG. ESTABLISHED BY SG-GPS(OPUS).
 5. SURFACE OWNER AND ADJOINER INFORMATION TAKEN FROM THE ASSESSOR AND COUNTY CLERK RECORDS OF WETZEL COUNTY IN AUGUST, 2013 AND INFORMATION PROVIDED BY STONE ENERGY CORPORATION.
 6. WELLS SHOWN ARE TAKEN FROM RECORDS OF WVOEP.
 7. AS-DRILLED INFORMATION PROVIDED BY STONE ENERGY CORPORATION.



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 RULES ISSUED AND PRESCRIBED BY THE DEPARTMENT OF ENVIRONMENTAL PROTECTION.



(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS.

DATE OCTOBER 22, 20 14

OPERATORS WELL NO. HOWELL #7H

API WELL NO. 47-103-02794

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. W2208 (BK 64-54)

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 1304' WATERSHED FISHING CREEK

DISTRICT GREEN COUNTY WETZEL QUADRANGLE PORTERS FALLS 7.5'

SURFACE OWNER CHARLES & RUTH HOWELL ACREAGE 51±

ROYALTY OWNER CHARLES & RUTH HOWELL, et al LEASE ACREAGE 332.37± **06/12/2015**

PROPOSED WORK : LEASE NO. _____

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 TVD 6,946' MD 12,994'

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