

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

RECEIVED  
Office of Oil and Gas

FEB 12 2015

WV Department of  
Environmental Protection

API 47-103-02920 County Wetzel District Green  
Quad Porters Falls Pad Name Howell Field/Pool Name Mary  
Farm name Howell, Charles and Ruth Well Number #8H-R  
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 4,382,902 Easting 517,671  
Landing Point of Curve Northing 4,382,754 Easting 518,038  
Bottom Hole Northing 4,381,365 Easting 518,963

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 1/31/2014 Date completion activities ceased 7/28/2014  
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 None Reported 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 None Reported Cavern(s) encountered (Y/N) depths N  
Is coal being mined in area (Y/N) N

Reviewed by:  
AL 5/27/15  
JK W.S. 6/10/15  
**06/12/2015**

API 47- 103 - 02920

Farm name Howell, Charles and Ruth

Well number #8H-R

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"	84'	New	LS		Y - GTS
Surface	17.5"	13.375"	1,304' KB 1,286' GL	New	J55	123' & 205'	Y - CTS
Coal	17.5"	13.375"	1,304' KB 1,286' GL	New	J55	123' & 205'	Y - CTS
Intermediate 1	12.25"	9.625"	2,423'	New	J55		Y - CTS
Intermediate 2							
Intermediate 3							
Production	8.75"	5.5"	13,249'	New	P110		N - TOC @ 370'
Tubing	N/A	2.375"	6,985'	New	N80		N/A
Packer type and depth set		TAM CAP Inflatable set @ 1,200'					

Comment Details Circulated 25 bbls cement to surface on the 13-3/8". Circulated 50 bbls cement to surface on the 9.625". Cement top on the 5.5" production casing is at 370'.

CEMENT DATA	Class/Type of Cement	Number of Sacks	Slurry wt (ppg)	Yield (ft <sup>3</sup> /sks)	Volume (ft <sup>3</sup> )	Cement Top (MD)	WOC (hrs)
Conductor	Type 1	34	15.6	1.18	40	Surface	24.0
Surface	Class "A"	970	15.6	1.20	1,164	Surface	8.0
Coal	Class "A"	970	15.6	1.20	1,164	Surface	8.0
Intermediate 1	Lead-VariCem Tail-Class "A"	Lead-720 Tail-230	Lead-13.0 Tail-15.6	Lead-1.837 Tail-1.21	Lead-1,323 Tail-278	Surface	12.0
Intermediate 2							
Intermediate 3							
Production	Lead-GasStop Tail-Class "A"	Lead-860 Tail-1,750	Lead-15.3 Tail-15.6	Lead-1.26 Tail-1.20	Lead-1,084 Tail-2,208	370'	8.0
Tubing							

Drillers TD (ft) 13,268 MD / 6,988 TVD

Loggers TD (ft) N/A

Deepest formation penetrated Marcellus Shale

Plug back to (ft) \_\_\_\_\_

Plug back procedure \_\_\_\_\_

Kick off depth (ft) 5,870 MD/ 5,867 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 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32 and 34. Intermediate casing had bow spring centralizers placed on joints #s 1, 3, 6, 9, 12, 15, 18, 21, 24, 27, 30, 33, 36, 39, 42, 45, 48, 51, 54, 57 and 60. 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 #176. From there bow spring centralizers were placed beginning on joint #179 and then every fourth joint up to joint #251. A total of 45 rigid left/right centralizers were used and 25 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 \_\_\_\_\_

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	2/10/14	12,988	13,169	72	Marcellus Shale
2	3/30/14	12,711	12,903	72	Marcellus Shale
3	3/31/14	12,444	12,633	72	Marcellus Shale
4	4/2/14	12,181	12,373	72	Marcellus Shale
5	4/3/14	11,921	12,113	72	Marcellus Shale
6	4/5/14	11,649	11,838	72	Marcellus Shale
7	4/6/14	11,385	11,578	72	Marcellus Shale
8	4/8/14	11,125	11,313	72	Marcellus Shale
9	4/10/14	10,866	11,050	72	Marcellus Shale
10	4/11/14	10,598	10,793	72	Marcellus Shale
11	4/13/14	10,345	10,531	72	Marcellus Shale
12	4/16/14	10,078	10,273	72	Marcellus Shale
13	4/17/14	9,803	9,998	72	Marcellus Shale
14	4/18/14	9,540	9,733	72	Marcellus Shale
15	4/20/14	9,281	9,473	72	Marcellus Shale
16	4/21/14	9,021	9,213	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	3/30/14	81.2	7,858	6,291	5,349	357,355	353,448	
2	3/31/14	85.8	7,616	6,382	5,033	405,340	351,939	
3	4/2/14	84.8	7,393	6,458	5,205	407,240	351,280	
4	4/3/14	84.6	7,484	6,655	4,603	409,900	354,006	
5	4/5/14	85.5	6,932	6,288	5,292	411,980	355,107	
6	4/6/14	83.8	7,083	5,729	4,755	410,280	346,494	
7	4/8/14	85.6	7,478	6,068	4,832	408,060	347,715	
8	4/10/14	80.4	7,192	5,547	4,373	403,333	348,343	
9	4/11/14	80.3	6,832	5,857	4,574	408,420	346,255	
10	4/13/14	80.6	6,849	6,169	4,545	412,125	346,048	
11	4/16/14	80.6	6,311	6,928	4,632	406,017	345,039	
12	4/17/14	80.1	6,663	5,591	4,746	409,996	350,634	
13	4/18/14	80.5	6,582	5,564	4,831	414,242	343,098	
14	4/20/14	80.5	6,390	5,912	4,889	410,520	344,712	
15	4/21/14	80.2	6,412	6,788	5,177	410,520	342,093	
16	4/22/14	80.3	6,623	6,240	5,349	411,380	345,340	

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Please insert additional pages as applicable.

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PERFORATION RECORD

Stage No.	Perforation date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formation(s)
17	4/22/14	8,760	8,958	72	Marcellus Shale
18	4/24/14	8,500	8,696	72	Marcellus Shale
19	4/25/14	8,238	8,432	72	Marcellus Shale
20	4/27/14	7,956	8,153	72	Marcellus Shale
21	4/28/14	7,710	7,893	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	4/24/14	79.8	6,192	5,710	5,120	410,860	345,603	
18	4/25/14	79.1	6,489	6,123	5,150	413,580	345,896	
19	4/27/14	79.7	6,584	5,555	5,032	407,820	345,209	
20	4/28/14	79.6	6,108	6,030	4,546	409,980	344,213	
21	4/29/14	80.5	6,236	5,812	4,703	273,360	302,045	

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<u>PRODUCING FORMATION(S)</u>	<u>DEPTHS</u>	
<u>Marcellus Shale</u>	<u>7,016' to 6,989'</u> TVD	<u>7,710' to 13,169'</u> MD
_____	_____	_____
_____	_____	_____
_____	_____	_____

Please insert additional pages as applicable.

GAS TEST  Build up  Drawdown  Open Flow OIL TEST  Flow  Pump

SHUT-IN PRESSURE Surface 2,100 psi Bottom Hole 4,352 calculated psi DURATION OF TEST 102 hrs

OPEN FLOW Gas 5,478 mcfpd Oil \_\_\_\_\_ bpd NGL 272 bpd Water 600 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 <sub>2</sub> S, ETC)
	0		0		
See Attached Sheet	Page 6 of 14				
					RECEIVED Office of Oil and Gas
					FEB 12 2015
					WV Department of Environmental Protection

Please insert additional pages as applicable.

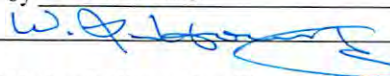
Drilling Contractor Nomac Drilling (top-hole) & Saxon Drilling (horizontal)  
 Address 171 Locust Ave. Ext. / 9303 New Trails Drive City Mount Morris / The Woodlands State PA / TX Zip 15349 / 77381

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 Halliburton  
 Address \_\_\_\_\_ City Jane Lew State WV Zip \_\_\_\_\_

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 #8HR  
API 47-103-02920  
Stone Energy Corporation

	Horizontal				
	Top (ft TVD)	Top (ft MD)			
Sandstone & Shale	Surface		*	990	No FW Reported
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		*	6,294	6,316
Rhinestreet	6,294	6,316	~	6,621	6,740
Cashaqua	6,621	6,740	~	6,821	7,066
Middlesex	6,821	7,066	~	6,837	7,098
West River	6,837	7,098	~	6,897	7,231
Geneseo	6,897	7,231	~	6,914	7,268
Tully Limestone	6,914	7,268	~	6,943	7,341
Hamilton Shale	6,943	7,341	~	7,002	7,573
Marcellus	7,002	7,573	~	6,988	13,268
TD				6,988	13,268

\* 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:	4/29/2014
State:	West Virginia
County/Parish:	Wetzel County
API Number:	
Operator Name:	Stone Energy
Well Name and Number:	Howell 8H
Longitude:	
Latitude:	
Long/Lat Projection:	
Production Type:	
True Vertical Depth (TVD):	0
Total Water Volume (gal)*:	7245518

## 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), Friction Reducer, Scale Inhibitor, AntiFoam Agent, Surfactant, Acid, Breaker, Gelling Agent, Iron Control Agent, Clay Control Agent, Buffer, Fluid Loss Additive, Propping Agent	Water (Including Mix Water Supplied by Client)*	NA		87.62544%	
			Crystalline silica	14808-60-7	98.52650%	12.19222%	
			Hydrochloric acid	7647-01-0	0.81764%	0.10118%	
			Carbohydrate polymer	Proprietary	0.46353%	0.05736%	
			Ammonium sulfate	Proprietary	0.12293%	0.01521%	
			Polyethylene glycol monohexyl ether	31726-34-8	0.06881%	0.00851%	
			Distillates (petroleum), hydrotreated light	64742-47-8	0.05965%	0.00738%	
			Glutaraldehyde	111-30-8	0.05186%	0.00642%	
			Diammonium peroxodisulfate	7727-54-0	0.02230%	0.00276%	
			Ammonium chloride	12125-02-9	0.01939%	0.00240%	
			Urea	57-13-6	0.01590%	0.00197%	
			Calcium chloride	10043-52-4	0.01190%	0.00147%	
			Dicoco dimethyl quaternary ammonium chloride	61789-77-3	0.00529%	0.00065%	
			Sodium carbonate	497-19-8	0.00410%	0.00051%	
			Ethane-1,2-diol	107-21-1	0.00407%	0.00050%	
			Trisodium orthophosphate	7601-54-9	0.00407%	0.00050%	
			Methanol	67-56-1	0.00320%	0.00040%	
			Sodium erythorbate	6381-77-7	0.00309%	0.00038%	
			Aliphatic acids	Proprietary	0.00240%	0.00030%	
			Aliphatic alcohols, ethoxylated #2	Proprietary	0.00240%	0.00030%	
			Prop-2-yn-1-ol	107-19-7	0.00080%	0.00010%	
			Polypropylene glycol	25322-69-4	0.00004%	< 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-27083 (Generated on 5/13/2014 3:45 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.

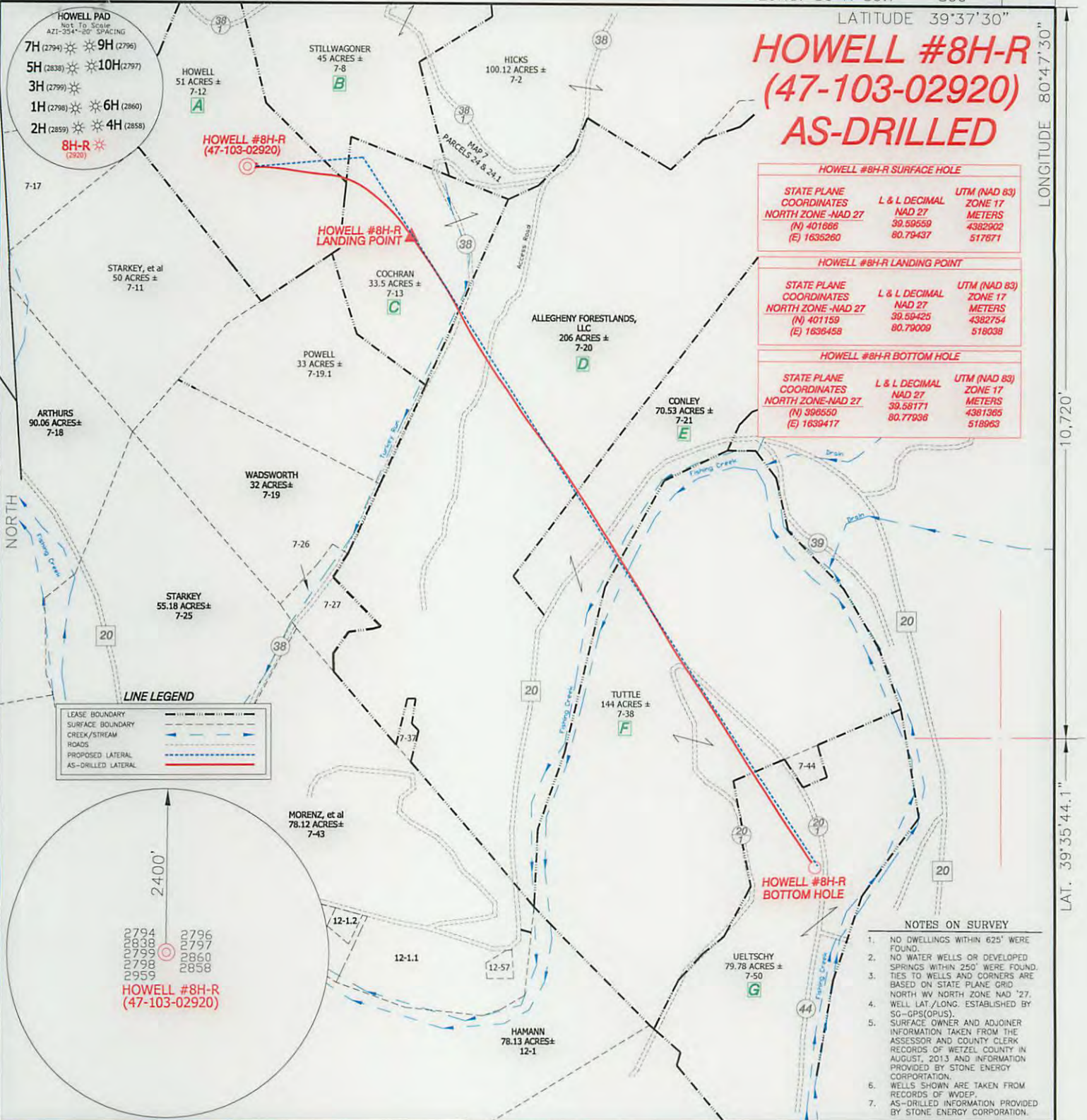
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# HOWELL #8H-R (47-103-02920) AS-DRILLED



HOWELL #8H-R SURFACE HOLE		
STATE PLANE COORDINATES	L & L DECIMAL	UTM (NAD 83)
NORTH ZONE -NAD 27	NAD 27	ZONE 17
(N) 401866	39.59559	4382902
(E) 1636260	80.79437	517671

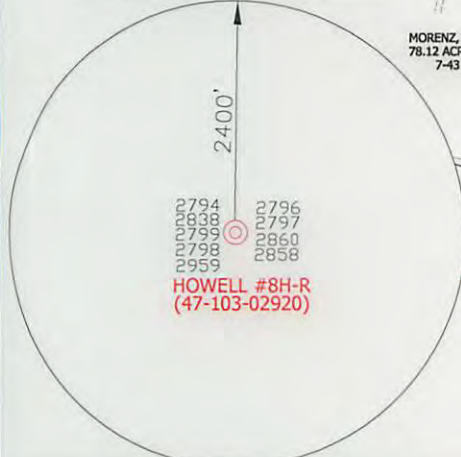
HOWELL #8H-R LANDING POINT		
STATE PLANE COORDINATES	L & L DECIMAL	UTM (NAD 83)
NORTH ZONE -NAD 27	NAD 27	ZONE 17
(N) 401159	39.59425	4382754
(E) 1636458	80.79009	518038

HOWELL #8H-R BOTTOM HOLE		
STATE PLANE COORDINATES	L & L DECIMAL	UTM (NAD 83)
NORTH ZONE -NAD 27	NAD 27	ZONE 17
(N) 396550	39.58171	4381365
(E) 1639417	80.77936	518963

### LINE LEGEND

LEASE BOUNDARY	---
SURFACE BOUNDARY	---
CREEK/STREAM	---
ROADS	---
PROPOSED LATERAL	---
AS-DRILLED LATERAL	---



- #### NOTES ON SURVEY
- NO DWELLINGS WITHIN 625' WERE FOUND.
  - NO WATER WELLS OR DEVELOPED SPRINGS WITHIN 250' WERE FOUND. TIES TO WELLS AND CORNERS ARE BASED ON STATE PLANE GRID NORTH WV NORTH ZONE NAD '27.
  - WELL LAT/LONG ESTABLISHED BY SG-GPS(OPUS).
  - 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.
  - WELLS SHOWN ARE TAKEN FROM RECORDS OF WDEP.
  - 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 15, 20 14  
 OPERATORS WELL NO. HOWELL #8H-R  
 API WELL NO. 47-103-02920  
 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 629.81± 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 6,988' MD 13,268'

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