WR-35
Rev. 8/23/13

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

API 47 - 103 - 02859 County Wetzel District Green
Quad Porters Falls Pad Name Howell Field/Pool Name Marcellus
Farm name Howell, Charles and Ruth Well Number #2H
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 4,382,907 Easting 517,664
Landing Point of Curve Northing 4,382,368 Easting 517,508
Bottom Hole Northing 4,380,953 Easting 518,466

Elevation (ft) 1,300 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 2/27/2013 Date drilling commenced 3/9/2013 Date drilling ceased 8/28/2013
Date completion activities began 1/23/2014 Date completion activities ceased 6/16/2014
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 110 Open mine(s) (Y/N) depths N
Salt water depth(s) ft 1,302 Void(s) encountered (Y/N) depths N
Coal depth(s) ft 848 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

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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"	93'	New	LS		Y - GTS
Surface	17.5"	13.375"	1,302' KB 1,287' GL	New	J55	127' & 212'	Y - CTS
Coal	17.5"	13.375"	1,302' KB 1,287' GL	New	J55	127' & 212'	Y - CTS
Intermediate 1	12.25"	9.625"	2,351'	New	J55		Y - CTS
Intermediate 2							
Intermediate 3							
Production	8.75"	5.5"	13,364'	New	P110		N - TOC @ 672'
Tubing	N/A	2.375"	7,902'	New	N80		N/A
Packer type and depth set							

Comment Details Circulated 34 bbls cement to surface on the 13-3/8". Circulated 35 bbls cement to surface on the 9.625". Cement top on the 5.5" production is at 984'.

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-430 Tail-345	Lead-15.0 Tail-15.5	Lead-1.27 Tail-1.19	Lead-546 Tail-411	Surface	12.0
Intermediate 2							
Intermediate 3							
Production	Lead-GasStop Tail-HalCem	Lead-1,083 Tail-1,890	Lead-15.3 Tail-15.6	Lead-1.26 Tail-1.20	Lead-1,365 Tail-2,268'	672'	8.0
Tubing							

Drillers TD (ft) 13,391 MD / 6,978 TVD Loggers TD (ft) N/A

Deepest formation penetrated Marcellus Shale Plug back to (ft)

Plug back procedure

Kick off depth (ft) 4967 MD/ 4941 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 and 26. Intermediate casing had bow spring centralizers placed on joints #'s 3, 6, 11, 14, 17, 20, 23, 26, 29, 32, 35, 38, 41, 44, 47 and 50. One straight blade rigid centralizer was placed on joint #53. 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 #192. From there bow spring centralizers were placed beginning on joint #200 and then every eighth joint to the calculated top of cement at joint #298. A total of 50 rigid left/right centralizers were used and 11 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

API 47- 103 - 02859 Farm name Howell, Charles and Ruth Well number #2H

PERFORATION RECORD

Stage No.	Perforation date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formation(s)
1	2/6/14	13,066	13,258	72	Marcellus Shale
2	3/28/14	12,793	12,985	72	Marcellus Shale
3	3/29/14	12,529	12,728	72	Marcellus Shale
4	3/30/14	12,268	12,463	72	Marcellus Shale
5	4/3/14	12,002	12,198	72	Marcellus Shale
6	4/4/14	11,729	11,913	72	Marcellus Shale
7	4/7/14	11,466	11,600	72	Marcellus Shale
8	4/8/14	11,197	11,393	72	Marcellus Shale
9	4/9/14	10,947	11,133	72	Marcellus Shale
10	4/10/14	10,672	10,878	72	Marcellus Shale
11	4/11/14	10,414	10,603	72	Marcellus Shale
12	4/12/14	10,159	10,340	72	Marcellus Shale
13	4/15/14	9,907	10,093	72	Marcellus Shale
14	4/16/14	9,645	9,833	72	Marcellus Shale
15	4/18/14	9,382	9,568	72	Marcellus Shale
16	4/20/14	9,117	9,308	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	3/28/14	85.4	7,926	6,415	4,688	361,120	350,952	
2	3/29/14	84.8	7,873	6,519	4,688	414,105	354,770	
3	3/30/14	85.5	7,787	5,725	4,431	411,665	351,506	
4	4/3/14	85.1	7,627	5,861	5,665	413,580	353,377	
5	4/4/14	85.5	7,580	6,067	4,573	413,460	353,713	
6	4/6/14	68.2	7,949	5,497	4,484	318,182	501,377	
7	4/8/14	82.9	7,564	5,767	5,062	409,480	355,769	
8	4/9/14	78.9	7,486	5,843	4,633	404,760	345,874	
9	4/10/14	80.6	7,231	5,842	4,688	412,712	348,394	
10	4/11/14	80.7	7,121	5,860	4,000	409,806	346,691	
11	4/12/14	79.0	6,862	5,521	3,942	408,764	345,423	
12	4/15/14	80.4	6,741	6,145	4,947	406,581	346,132	
13	4/16/14	80.5	6,869	6,339	4,860	411,595	345,516	
14	4/18/14	80.4	7,254	6,135	5,005	408,220	348,466	
15	4/20/14	80.5	6,515	5,865	5,521	414,860	344,506	
16	4/21/14	80.4	6,243	5,731	5,032	410,140	338,712	

Please insert additional pages as applicable.

API 47- 103 - 02859 Farm name Howell, Charles and Ruth Well number #2H

PERFORATION RECORD

Stage No.	Perforation date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formation(s)
17	4/21/14	8,843	9,041	72	Marcellus Shale
18	4/23/14	8,574	8,770	72	Marcellus Shale
19	4/25/14	8,309	8,503	72	Marcellus Shale
20	4/26/14	8,045	8,241	72	Marcellus Shale
21	4/28/14	7,787	7,978	72	Marcellus Shale
22	4/29/14	7,589	7,715	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	4/23/14	80.5	6,058	6,236	4,308	412,340	345,121	
18	4/25/14	79.1	6,486	6,058	4,575	408,080	344,053	
19	4/26/14	80.0	6,668	6,101	4,460	411,180	345,999	
20	4/28/14	79.3	6,809	6,201	4,605	405,520	371,846	
21	4/29/14	80.0	6,381	6,246	4,747	412,520	346,624	
22	4/30/14	79.8	6,997	6,441	4,344	379,340	372,401	

Please insert additional pages as applicable.

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PRODUCING FORMATION(S)	DEPTHS	
Marcelllus Shale	7,000' to 6,981' TVD	7,720' to 13,384' MD

Please insert additional pages as applicable.

GAS TEST □ Build up □ Drawdown ■ Open Flow OIL TEST ■ Flow □ Pump

SHUT-IN PRESSURE Surface 2,800 psi Bottom Hole 4,868 calculated psi DURATION OF TEST 15 hrs

OPEN FLOW Gas 4,478 mcfpd Oil bpd NGL 21.6 bpd Water bpd GAS MEASURED BY □ Estimated ■ Orifice □ Pilot

LITHOLOGY/ FORMATION NAME	TOP DEPTH IN FT 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_2S, ETC)
	0		0		
See Attached Sheet	Page 6 of 17				

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 Schlumberger / 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 W. Lee Hornsby Title Drilling Engineer Date 2/3/2015

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

06/12/2015

HOWELL #2H
API 47-103-02859
Stone Energy Corporation

	Top (ft TVD)	Horizontal Top (ft MD)		Bottom (ft TVD)	Bottom (ft MD)	
Sandstone & Shale	Surface		*	848		FW @ 110'
Coal	848		*	851		
Sandstone & Shale	851		*	2,146		SW @ 1,302'
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		*	6,275	6,481	
Rhinestreet	6,275	6,481	~	6,371	6,595	
Cashaqua	6,371	6,595	~	6,446	6,685	
Undiff Devonian Shale	6,446	6,685	~	6,485	6,732	
Middlesex	6,485	6,732	~	6,555	6,815	
West River	6,555	6,815	~	6,881	7,275	
Geneseo	6,881	7,275	~	6,899	7,310	
Tully Limestone	6,899	7,310	~	6,930	7,375	
Hamilton Shale	6,930	7,375	~	6,975	7,503	
Marcellus	6,975	7,503	~	6,978	13,391	
TD				6,978	13,391	

* From Pilot Hole Log and Driller's Log
~ From MWD Gamma Log

Hydraulic Fracturing Fluid Product Component Information Disclosure

Fracture Date:	4/30/2014
State:	West Virginia
County/Parish:	Wetzel County
API Number:	
Operator Name:	Stone Energy
Well Name and Number:	Howell 2H
Longitude:	
Latitude:	
Long/Lat Projection:	
Production Type:	
True Vertical Depth (TVD):	0
Total Water Volume (gal)*:	7857222

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, Accelerator, Fluid Loss Additive , Propping Agent	Water (Including Mix Water Supplied by Client)*	NA		88.15991%	
			Crystalline silica	14808-60-7	98.44456%	11.65593%	
			Hydrochloric acid	7647-01-0	0.86164%	0.10202%	
			Carbohydrate polymer	Proprietary	0.48942%	0.05795%	
			Ammonium sulfate	Proprietary	0.14147%	0.01675%	
			Polyethylene glycol monohexyl ether	31726-34-8	0.07069%	0.00837%	
			Glutaraldehyde	111-30-8	0.05442%	0.00644%	
			Distillates (petroleum), hydrotreated light	64742-47-8	0.05066%	0.00600%	
			Calcium chloride	10043-52-4	0.02974%	0.00352%	
			Diammonium peroxidisulphate	7727-54-0	0.02236%	0.00265%	
			Urea	57-13-6	0.01852%	0.00219%	
			Ammonium chloride	12125-02-9	0.01646%	0.00195%	
			Dicoco dimethyl quaternary ammonium chloride	61789-77-3	0.00544%	0.00064%	
			Ethane-1,2-diol	107-21-1	0.00434%	0.00051%	
			Trisodium ortho phosphate	7601-54-9	0.00434%	0.00051%	
			Methanol	67-56-1	0.00342%	0.00040%	
			Sodium erythorbate	6381-77-7	0.00322%	0.00038%	
			Aliphatic acids	Proprietary	0.00256%	0.00030%	
			Aliphatic alcohols, ethoxylated #2	Proprietary	0.00256%	0.00030%	
			Prop-2-yn-1-ol	107-19-7	0.00085%	0.00010%	
			Polypropylene glycol	25322-69-4	0.00017%	0.00002%	

* 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-27077 (Generated on 5/13/2014 3:39 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.

06/12/2015

FORM WW 6

LONG. 80°47'40.0" — 820'

LATITUDE 39°37'30"

HOWELL #2H (47-103-02859) AS-DRILLED

LONGITUDE 80°47'30"

10,700'

LAT. 39°35'44.3"

HOWELL #2H SURFACE HOLE

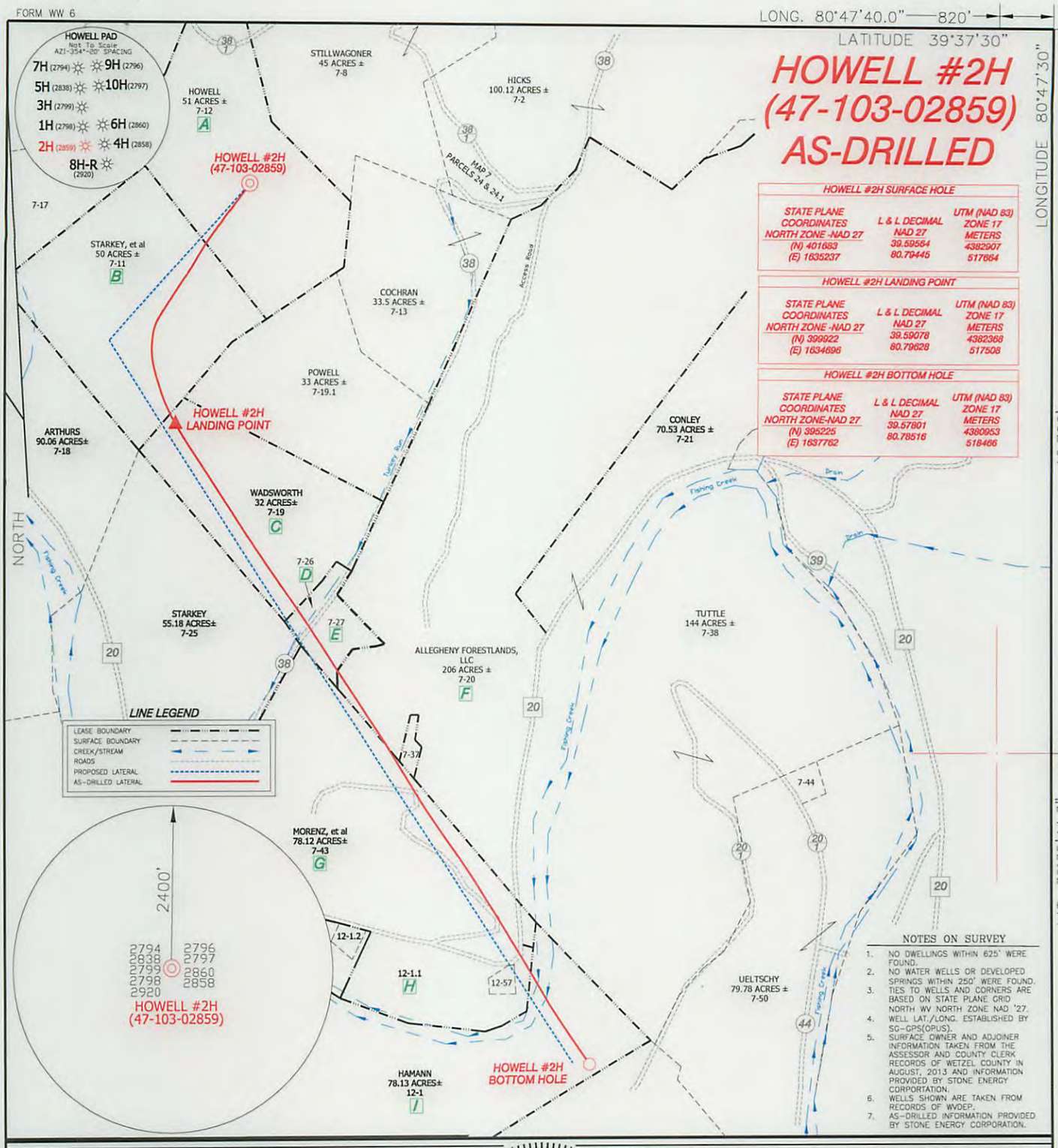
STATE PLANE COORDINATES NORTH ZONE -NAD 27	L & L DECIMAL NAD 27	UTM (NAD 83) ZONE 17 METERS
(N) 401683	39.59564	4382907
(E) 1635237	80.79445	517664

HOWELL #2H LANDING POINT

STATE PLANE COORDINATES NORTH ZONE -NAD 27	L & L DECIMAL NAD 27	UTM (NAD 83) ZONE 17 METERS
(N) 399922	39.59078	4382368
(E) 1634696	80.79628	517508

HOWELL #2H BOTTOM HOLE

STATE PLANE COORDINATES NORTH ZONE-NAD 27	L & L DECIMAL NAD 27	UTM (NAD 83) ZONE 17 METERS
(N) 395225	39.57801	4380953
(E) 1637762	80.78516	518466



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 CORPORTATION.
6. WELLS SHOWN ARE TAKEN FROM RECORDS OF WVDEP.
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.

P.S. 834

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

DOYLE HUPP JR. LICENSED No. 834 STATE OF WEST VIRGINIA PROFESSIONAL SURVEYOR

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

DATE OCTOBER 14 , 20 14

OPERATORS WELL NO. HOWELL #2H

API WELL NO. 47 — 103 — 02859
STATE COUNTY PERMIT

MINIMUM DEGREE OF ACCURACY 1/2500

PROVEN SOURCE OF ELEVATION SG-GPS(OPUS)

FILE NO. W2208 (BK 64-54)

SCALE 1" = 1000'

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

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

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 541.54±

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 6,976' MD 13,391'

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

COUNTY NAME PERMIT

06/12/2015