

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 47-103-02798 County Wetzel District Green
Quad Porters Falls Pad Name Howell Field/Pool Name Mary
Farm name Howell, Charles and Ruth Well Number #1H
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 4,382,913 Easting 517,663
Landing Point of Curve Northing 4,382,967 Easting 516,935
Bottom Hole Northing 4,384,079 Easting 515,937

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 9/26/2012 Date drilling commenced 1/16/2013 Date drilling ceased 9/8/2013
Date completion activities began 1/20/2014 Date completion activities ceased 7/27/2014
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 94 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 1,070 Cavern(s) encountered (Y/N) depths N
Is coal being mined in area (Y/N) N

Reviewed by:
A.L. 5/18/15
W.S. 04/01/15
06/12/2015

API 47-103 - 02798 Farm name Howell, Charles and Ruth Well number #1H

CASING STRINGS	Hole Size	Casing Size	Depth	New or Used	Grade w/ft	Basket Depth(s)	Did cement circulate (Y/N) * Provide details below*
Conductor	24"	20"	65'	New	LS		Y - GTS
Surface	17.5"	13.375"	1,291'	New	J55	126' & 252'	Y - CTS
Coal	17.5"	13.375"	1,291'	New	J55	126' & 252'	Y - CTS
Intermediate 1	12.25"	9.625"	2,444'	New	J55		Y - CTS
Intermediate 2							
Intermediate 3							
Production	8.75"	5.5"	13,038'	New	P110		N - TOC @ 984'
Tubing	N/A	2.375"	7,902'	New	N80		N/A
Packer type and depth set							

Comment Details Circulated 35 bbls cement to surface on the 13-3/8". Circulated 45 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"	1,015	15.6	1.19	1,208	Surface	8.0
Coal	Class "A"	1,015	15.6	1.19	1,208	Surface	8.0
Intermediate 1	Lead-FlexSeal Tail-Class "A"	Lead-427 Tail-420	Lead-15.0 Tail-15.5	Lead-1.26 Tail-1.19	Lead-538 Tail-500	Surface	12.0
Intermediate 2							
Intermediate 3							
Production	Lead-GasStop Tail-HalCem	Lead-851 Tail-1,801	Lead-15.3 Tail-15.6	Lead-1.26 Tail-1.20	Lead-1,072 Tail-2,161'	984'	8.0
Tubing							

Drillers TD (ft) 13,045 MD / 6,947 TVD Loggers TD (ft) N/A
 Deepest formation penetrated Marcellus Shale Plug back to (ft) _____
 Plug back procedure _____

Kick off depth (ft) 5,803 MD/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, and 24. 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 and 57. Production casing had left/right rigid spiral centralizers placed beginning on joint #1 and then every fourth joint up to the top of curve at joint #209. From there bow spring centralizers were placed beginning on joint #200 and then every eighth joint to the calculated top of cement at joint #299. A total of 48 rigid left/right centralizers were used and 11 bow spring centralizers were used. The joint numbers begin at the TD of each individual casing string and increase as you increase as you come up the hole.

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WAS WELL COMPLETED AS SHOT HOLE Yes No DETAILS _____

WAS WELL COMPLETED OPEN HOLE? Yes No DETAILS _____

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

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API 47- 103 - 02798

Farm name Howell, Charles and Ruth

Well number #1H

PERFORATION RECORD

Stage No.	Perforation date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formation(s)
1	2/7/14	12,783	12,946	72	Marcellus Shale
2	2/21/14	12,564	12,709	72	Marcellus Shale
3	2/23/14	12,335	12,493	72	Marcellus Shale
4	2/24/14	12,146	12,288	72	Marcellus Shale
5	2/25/14	11,935	12,075	72	Marcellus Shale
6	2/26/14	11,727	11,686	72	Marcellus Shale
7	2/27/14	11,501	11,657	72	Marcellus Shale
8	2/8/14	11,290	11,428	72	Marcellus Shale
9	3/1/14	11,077	11,221	72	Marcellus Shale
10	3/2/14	10,870	11,003	72	Marcellus Shale
11	3/4/14	10,665	10,804	72	Marcellus Shale
12	3/6/14	10,455	10,591	72	Marcellus Shale
13	3/9/14	10,244	10,387	72	Marcellus Shale
14	3/11/14	10,033	10,178	72	Marcellus Shale
15	3/12/14	9,815	9,963	72	Marcellus Shale
16	3/13/14	9,600	9,748	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	2/21/14	79.9	8,002	6,044	4,716	350,373	380,940	
2	2/23/14	81.1	8,014	6,201	4,746	375,000	329,907	
3	2/24/14	79.1	8,159	6,462	4,660	371,656	363,499	
4	2/25/14	82.4	7,674	5,740	4,977	376,580	321,760	
5	2/26/14	82.7	7,779	5,590	5,045	375,360	318,947	
6	2/27/14	84.8	7,511	5,724	4,831	370,300	321,158	
7	2/28/14	85.5	7,634	5,918	4,889	369,320	323,933	
8	3/1/14	85.1	7,479	5,300	3,886	370,320	317,789	
9	3/2/14	80.0	7,305	5,659	5,032	376,580	371,789	
10	3/4/14	80.3	7,282	5,892	4,603	380,440	320,275	
11	3/6/14	80.5	7,488	6,460	5,693	372,640	310,761	
12	3/9/14	80.1	7,003	5,233	5,489	372,580	322,855	
13	3/10/14	80.4	7,109	5,634	5,177	373,740	314,866	
14	3/12/14	80.3	7,280	6,037	5,376	374,540	324,242	
15	3/13/14	78.8	7,074	6,639	4,861	375,760	317,444	
16	3/14/14	80.0	7,209	5,577	4,633	370,720	319,638	

Please insert additional pages as applicable.

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HOWELL #1H
 API 47-103-02798
 Stone Energy Corporation

	Horizontal			Bottom (ft TVD)	Bottom (ft MD)
	Top (ft TVD)	Top (ft MD)			
Sandstone & Shale	Surface		*	1,070	FW @ 94'
Coal	1,070		*	1,073	
Sandstone & Shale	1,073		*	1,951	No Sw Reported
Little Lime	1,951		*	2,056	
Big Lime	2,056		*	2,250	
Big Injun	2,250		*	2,293	
Sandstone & Shale	2,293		*	2,825	
Berea Sandstone	2,825		*	2,855	
Shale	2,855		*	3,017	
Gordon	3,017		*	3,067	
Undiff Devonian Shale	3,067		*	5,548	
Lower Alexander Shale	5,548		~	5,555	
Undiff Devonian Shale	5,555		~	5,700	5,833
Rhinestreet	5,700	5,833	~	5,814	5,930
Undiff Devonian Shale	5,814	5,930	~	6,601	6,941
Cashaqua	6,601	6,941	~	6,651	7,024
Middlesex	6,651	7,024	~	6,813	7,332
West River	6,813	7,332	~	6,890	7,544
Geneseo	6,890	7,544	~	6,906	7,598
Tully Limestone	6,906	7,598	~	6,938	7,714
Hamilton Shale	6,938	7,714	~	6,982	7,908
Marcellus	6,982	7,908	~	6,947	13,045
TD				6,947	13,045

* 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:	3/25/2014
State:	West Virginia
County/Parish:	Wetzel County
API Number:	
Operator Name:	Stone Energy
Well Name and Number:	Howell 1H
Longitude:	
Latitude:	
Long/Lat Projection:	
Production Type:	
True Vertical Depth (TVD):	0
Total Water Volume (gal)*:	7840635

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, Accelerator, Propping Agent, Fluid Loss	Water (Including Mix Water Supplied by Client)*	NA		87.97339%	RECEIVED Office of Oil and Gas FEB 12 2015 WV Department of Environmental Protection
			Crystalline silica	14808-60-7	98.17931%	11.80764%	
			Hydrochloric acid	7647-01-0	0.88713%	0.10669%	
			Carbohydrate polymer	Proprietary	0.51716%	0.06220%	
			Ammonium sulfate	Proprietary	0.19666%	0.02365%	
			Calcium chloride	10043-52-4	0.12482%	0.01501%	
			Polyethylene glycol monohexyl ether	31726-34-8	0.06500%	0.00782%	
			Glutaraldehyde	111-30-8	0.05643%	0.00679%	
			Diammonium peroxidisulphate	7727-54-0	0.02443%	0.00294%	
			Amine derivative	Proprietary	0.00778%	0.00094%	
			Dicoco dimethyl quaternary ammonium chloride	61789-77-3	0.00500%	0.00060%	
			Ethane-1,2-diol	107-21-1	0.00424%	0.00051%	
			Trisodium ortho phosphate	7601-54-9	0.00424%	0.00051%	
			Methanol	67-56-1	0.00375%	0.00045%	
			Sodium erythorbate	6381-77-7	0.00307%	0.00037%	
			Aliphatic alcohols, ethoxylated #2	Proprietary	0.00281%	0.00034%	
			Aliphatic acids	Proprietary	0.00281%	0.00034%	
			Prop-2-yn-1-ol	107-19-7	0.00094%	0.00011%	
			Polypropylene glycol	25322-69-4	0.00020%	0.00002%	

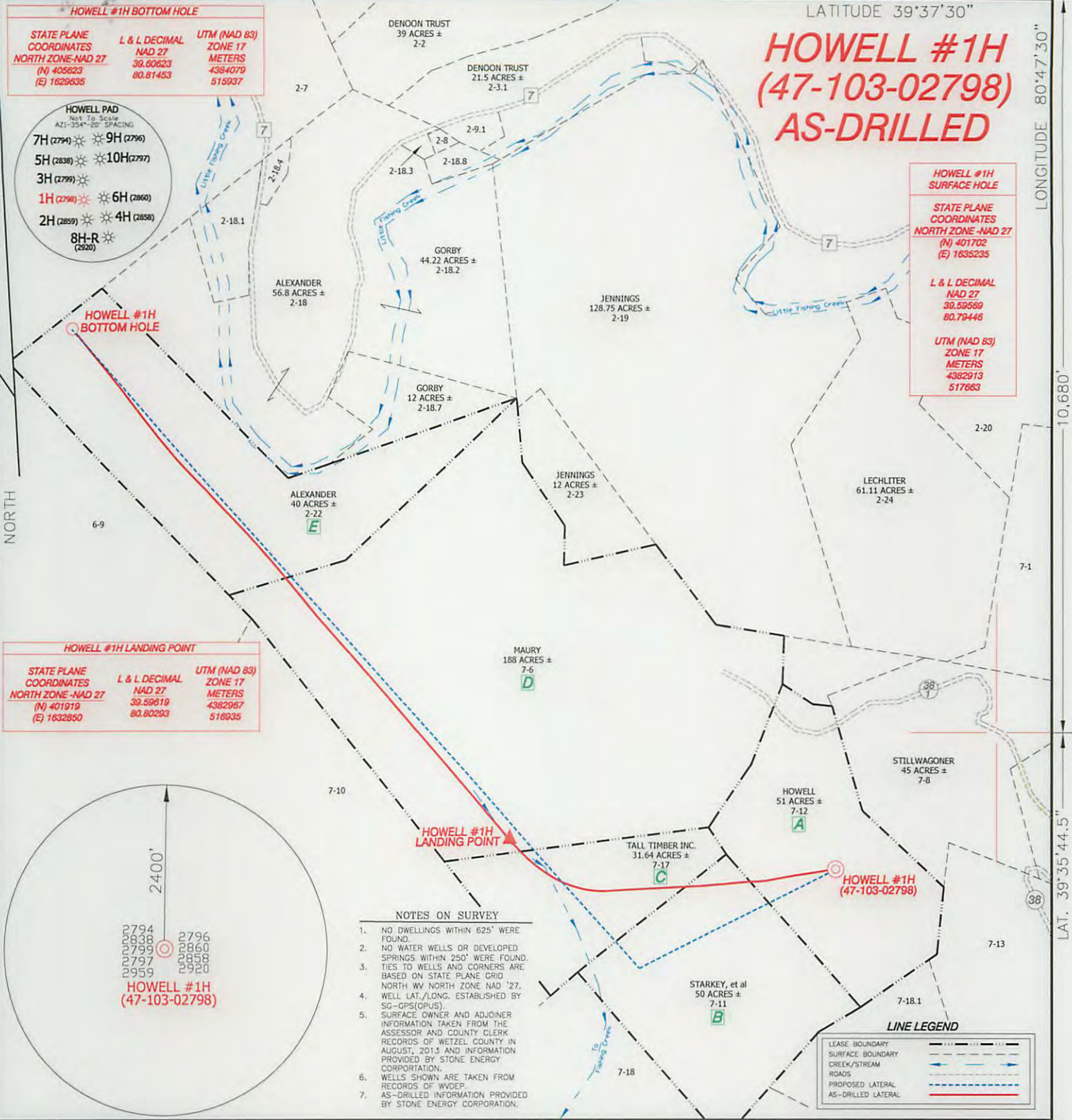
* Total Water Volume sources may include fresh water, produced water, and/or recycled water

** Information is based on the maximum potential for concentration and thus the total may be over 100%

Report ID: RPT-25887 (Generated on 3/31/2014 10:52 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.

06/12/2015



HOWELL #1H BOTTOM HOLE

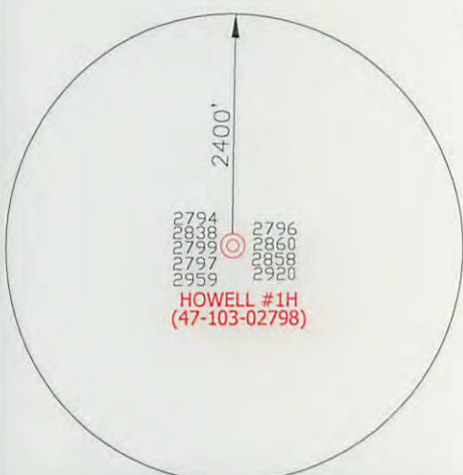
STATE PLANE COORDINATES NORTH ZONE-NAD 27 (N) 405823 (E) 1629635	L & L DECIMAL NAD 27 30.60623 80.81453	UTM (NAD 83) ZONE 17 METERS 4384079 515937
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HOWELL PAD
Not To Scale
AZI-354"-20" SPACING

7H (2794)	9H (2796)
5H (2838)	10H (2797)
3H (2799)	
1H (2790)	6H (2860)
2H (2859)	4H (2858)
8H-R (2020)	

HOWELL #1H LANDING POINT

STATE PLANE COORDINATES NORTH ZONE-NAD 27 (N) 401919 (E) 1632850	L & L DECIMAL NAD 27 39.59619 80.80293	UTM (NAD 83) ZONE 17 METERS 4382967 518935
---	---	--



- 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 WVEP.
 - AS-DRILLED INFORMATION PROVIDED BY STONE ENERGY CORPORATION.

LINE LEGEND

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

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

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



(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS.
DATE OCTOBER 20, 20 14
OPERATORS WELL NO. HOWELL #1H
API WELL NO. 47-103-02798
STATE COUNTY PERMIT

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 360.64± **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 6,947' MD 13,045'

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

COUNTYNAME
PERMIT