

PM

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

API 47 - 103 - 02789 County Wetzel District Magnolia  
Quad New Martinsville Pad Name ZMBG Field/Pool Name Mary  
Farm name Zumpetta, Lawrence et al Well Number #8H  
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 4,387,958 Easting 515,404  
Landing Point of Curve Northing 4,387,873 Easting 515,949  
Bottom Hole Northing 4,386,514 Easting 516,767

Elevation (ft) 1,341 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 7/31/12 & 3/7/14 Date drilling commenced 10/8/2013 Date drilling ceased 6/13/2014  
Date completion activities began 8/6/2014 Date completion activities ceased 2/9/2015  
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 100 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 1,151 Cavern(s) encountered (Y/N) depths N  
Is coal being mined in area (Y/N) N

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10/09/2015

API 47-103 - 02789 Farm name Zumpetta, Lawrence et al Well number #8H

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"	87'	New	LS		N - GTS
Surface	17.5"	13.375"	1,298'	New	J55	116' & 192'	N - GTS
Coal	17.5"	13.375"	1,298'	New	J55	116' & 192'	N - GTS
Intermediate 1	12.25"	9.625"	2,584'	New	J55		Y - CTS
Intermediate 2							
Intermediate 3							
Production	8.75"	5.5"	12,948'	New	P110		N - TOC @ 1,140
Tubing	N/A	2.375"	7,622'	New	J55		N/A
Packer type and depth set		TAM Inflatable Packer @ 1,195' on 9.625" casing					

Comment Details Circulated 0 bbls cement to surface on 13.375" casing string - Grouted 75' GL to surface. Circulated 34 bbls cement to surface on the 9.625" casing string. TOC on 5.5" after running CBL @ 1,140'.

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"	952	15.6	1.20	1,142	Surface	8.0
Coal	Class "A"	952	15.6	1.20	1,142	Surface	8.0
Intermediate 1	Lead-10% Salt Tail-Class "A"	Lead-680 Tail-250	Lead-15.6 Tail 15.6	Lead-1.24 Tail-1.21	Lead-843 Tail-303	Surface	8.0
Intermediate 2							
Intermediate 3							
Production	Lead-Turned Spacer Tail-Var Cem	Lead-178 Tail-2,410	Lead- 14.5 Tail-15.2	Lead-2.37 Tail-1.20	Lead-422 Tail-2,892	1,140	7.0
Tubing							

Drillers TD (ft) 12,949 MD / 6,884 TVD Loggers TD (ft) N/A  
 Deepest formation penetrated Marcellus Shale Plug back to (ft) \_\_\_\_\_  
 Plug back procedure \_\_\_\_\_

Kick off depth (ft) 5,914 MD / 5,859' 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 casing had bow spring centralizers placed on joints 28 and 31. Intermediate casing had bow spring centralizers placed on joints 3, 6, 9, 12, 15, 18, 21, 24, 27, 30, 33, 36, 39, 42, 45, 48, 51, 54, 57 and 60.  
Production casing had rigid spiral centralizers placed on every fourth joint beginning with joint 1 to joint 161. Ran a total of 41 rigid spiral centralizers. Ran Bow spring centralizers on every third joint from joint 166 to joint 292. A total of 43 bow spring centralizers were run.

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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API 47- 103 - 02789

Farm name Zumpetta, Lawrence et al

Well number #8H

PERFORATION RECORD

Stage No.	Perforation date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formation(s)
1	8/11/14	12,740	12,878	72	Marcellus Shale
2	8/24/14	12,535	12,673	72	Marcellus Shale
3	8/25/14	12,330	12,468	72	Marcellus Shale
4	8/26/14	12,125	12,263	72	Marcellus Shale
5	8/27/14	11,919	12,053	72	Marcellus Shale
6	8/28/14	11,710	11,863	72	Marcellus Shale
7	9/2/14	11,500	11,653	72	Marcellus Shale
8	9/3/14	11,290	11,446	72	Marcellus Shale
9	9/4/14	11,076	11,233	72	Marcellus Shale
10	9/5/14	10,870	11,023	72	Marcellus Shale
11	9/6/14	10,660	10,813	72	Marcellus Shale
12	9/7/14	10,450	10,595	72	Marcellus Shale
13	9/9/14	10,240	10,393	72	Marcellus Shale
14	9/10/14	10,031	10,183	72	Marcellus Shale
15	9/11/14	9,822	9,973	72	Marcellus Shale
16	9/12/14	9,606	9,763	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	8/24/14	85.2	7,633	5,217	4,529	327,480	6,501	
2	8/25/14	85.1	7,519	5,354	4,838	359,660	6,846	
3	8/26/14	85.0	7,497	5,497	4,806	362,840	6,762	
4	8/27/14	85.3	7,563	5,498	5,012	361,780	6,805	
5	8/28/14	82.2	7,187	5,654	5,037	363,660	6,952	
6	9/2/14	81.7	7,445	6,315	4,560	342,680	6,991	
7	9/3/14	85.3	7,311	6,525	4,294	362,180	6,947	
8	9/4/14	80.0	7,351	6,062	4,324	355,744	6,831	
9	9/5/14	77.5	7,483	6,654	4,912	359,755	6,729	
10	9/6/14	79.5	7,253	6,468	6,468	370,240	6,714	
11	9/7/14	80.2	7,139	5,538	4,470	359,670	6,742	
12	9/8/14	79.9	6,937	5,559	4,729	370,500	6,747	
13	9/10/14	78.6	7,117	6,556	4,530	365,900	6,708	
14	9/11/14	80.4	7,384	6,290	4,912	364,160	6,642	
15	9/12/14	80.4	7,135	6,104	4,647	360,320	6,746	
16	9/13/14	80.2	7,228	6,555	5,089	359,980	6,673	

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	9/13/14	9,400	9,539	72	Marcellus Shale
18	9/14/14	9,190	9,343	72	Marcellus Shale
19	9/15/14	8,983	9,133	72	Marcellus Shale
20	9/16/14	8,770	8,911	72	Marcellus Shale
21	9/17/14	8,560	8,707	72	Marcellus Shale
22	9/18/14	8,350	8,499	72	Marcellus Shale
23	9/19/14	8,140	8,293	72	Marcellus Shale
24	9/22/14	7,936	8,083	72	Marcellus Shale
25	9/23/14	7,728	7,873	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	9/14/14	74.2	8,076	7,348	4,677	351,800	8,415	
18	9/15/14	78.6	7,853	7,640	5,208	364,600	8,645	
19	9/16/14	80.3	7,183	6,331	5,412	365,780	6,701	
20	9/17/14	79.2	7,288	6,391	5,265	361,241	7,417	
21	9/18/14	79.6	7,194	5,693	4,766	359,760	6,560	
22	9/19/14	79.9	7,086	6,240	4,825	342,460	7,252	
23	9/20/14	79.9	7,292	6,556	9,535	363,360	6,443	
24	9/23/14	80.0	7,484	7,416	5,138	349,800	6,341	
25	9/23/14	80.3	7,309	7,852	4,842	368,840	6,488	

Please insert additional pages as applicable.

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ZMBG #8H  
 API 47-103-02789  
 Stone Energy Corporation

	Horizontal		Bottom (ft TVD)	Bottom (ft MD)	
	Top (ft TVD)	Top (ft MD)			
Sandstone & Shale	Surface		*	1,151'	FW @ 100'
Coal	1,151'		*	1,154'	
Sandstone & Shale	1,154'		*	2,116'	No SW Reported
Big Lime	2,116'		*	2,216'	
Big Injun	2,216'		*	2,316'	
Sandstone & Shale	2,316'		*	2,689'	
Berea Sandstone	2,689'		*	2,719'	
Shale	2,719'		*	2,894'	
Gordon	2,894'		*	2,944'	
Undiff Devonian Shale	2,944'		*	5,662'	5,713'
Rhinestreet	5,662'	5,713'	~	6,477'	6,687'
Cashaqua	6,477'	6,687'	~	6,654'	7,047'
Middlesex	6,654'	7,047'	~	6,682'	7,098'
West River	6,682'	7,098'	~	6,742'	7,212'
Geneseo	6,742'	7,212'	~	6,758'	7,246'
Tully Limestone	6,758'	7,246'	~	6,799'	7,345'
Hamilton Shale	6,799'	7,345'	~	6,842'	7,492'
Marcellus	6,842'	7,492'	~	6,884'	12,949'
TD				6,884'	12,949'

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

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103.02789

**Hydraulic Fracturing Fluid Product Component Information Disclosure**

Fracture Date:	9/23/2014
State:	West Virginia
County/Parish:	Wetzel County
API Number:	471-03-02789
Operator Name:	Stone Energy
Well Name and Number:	ZMBG #8H
Longitude:	515,404
Latitude:	4,387,958
Long/Lat Projection:	
Production Type:	Natural Gas
True Vertical Depth (TVD):	6884
Total Water Volume (gal)*:	7249029

**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, Fluid Loss Additive , Propping	Water (Including Mix Water Supplied by Client)*	NA		86.87745%	
			Crystalline silica	14808-60-7	98.29661%	12.89902%	
			Hydrochloric acid	7647-01-0	0.89366%	0.11727%	
			Ammonium sulfate	7783-20-2	0.12782%	0.01677%	
			Polyethylene glycol monohexyl ether	31726-34-8	0.07159%	0.00939%	
			Glutaraldehyde	111-30-8	0.05388%	0.00707%	
			Diammonium peroxidisulphate	7727-54-0	0.03331%	0.00437%	
			Urea	57-13-6	0.02130%	0.00280%	
			Dicoco dimethyl quaternary ammonium chloride	61789-77-3	0.00551%	0.00072%	
			Methanol	67-56-1	0.00530%	0.00070%	
			Sodium erythorbate	6381-77-7	0.00427%	0.00056%	
			Trisodium ortho phosphate	7601-54-9	0.00372%	0.00049%	
			Ethylene Glycol	107-21-1	0.00372%	0.00049%	
			Thiourea formaldehyde polymer	Proprietary	0.00265%	0.00035%	
			Aliphatic acids	Proprietary	0.00203%	0.00027%	
			Calcium chloride	10043-52-4	0.00132%	0.00017%	
			Aliphatic alcohols, ethoxylated #2	Proprietary	0.00088%	0.00012%	
			Propargyl alcohol	107-19-7	0.00088%	0.00012%	
			Olefin hydrocarbon	Proprietary	0.00044%	0.00006%	
			Hexadec-1-ene	629-73-2	0.00018%	0.00002%	
			Polypropylene glycol	25322-69-4	0.00011%	0.00001%	
			Formaldehyde	50-00-0	0.00001%	< 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-34851 (Generated on 2/16/2015 4:47 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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# ZMBG #8H (47-103-02789) AS-DRILLED

### LEGEND

LEASE BOUNDARY	---
SURFACE BOUNDARY	---
CREEK/STREAM	~
ROADS	—
AS-DRILLED LATERAL	—
PROPOSED LATERAL	---
DISTRICT LINE	---
PERMITTED WELL	☀
ROAD/ROUTE NUMBER	⑤

LONGITUDE 80°47'30"

9,300'

LAT. 39°38'28.2"

COUNTY NAME

PERMIT

**ZMBG #8H SURFACE HOLE**

STATE PLANE COORDINATES  
NORTH ZONE-NAD 27  
(N) 418375  
(E) 1628097

L & L DECIMAL  
NAD 27  
39.64118  
80.82086

UTM (NAD 83)  
ZONE 17  
METERS  
4387967  
515404

**ZMBG #8H LANDING POINT**

STATE PLANE COORDINATES  
NORTH ZONE-NAD 27  
(N) 418069  
(E) 1629881

L & L DECIMAL  
NAD 27  
39.64041  
80.81431

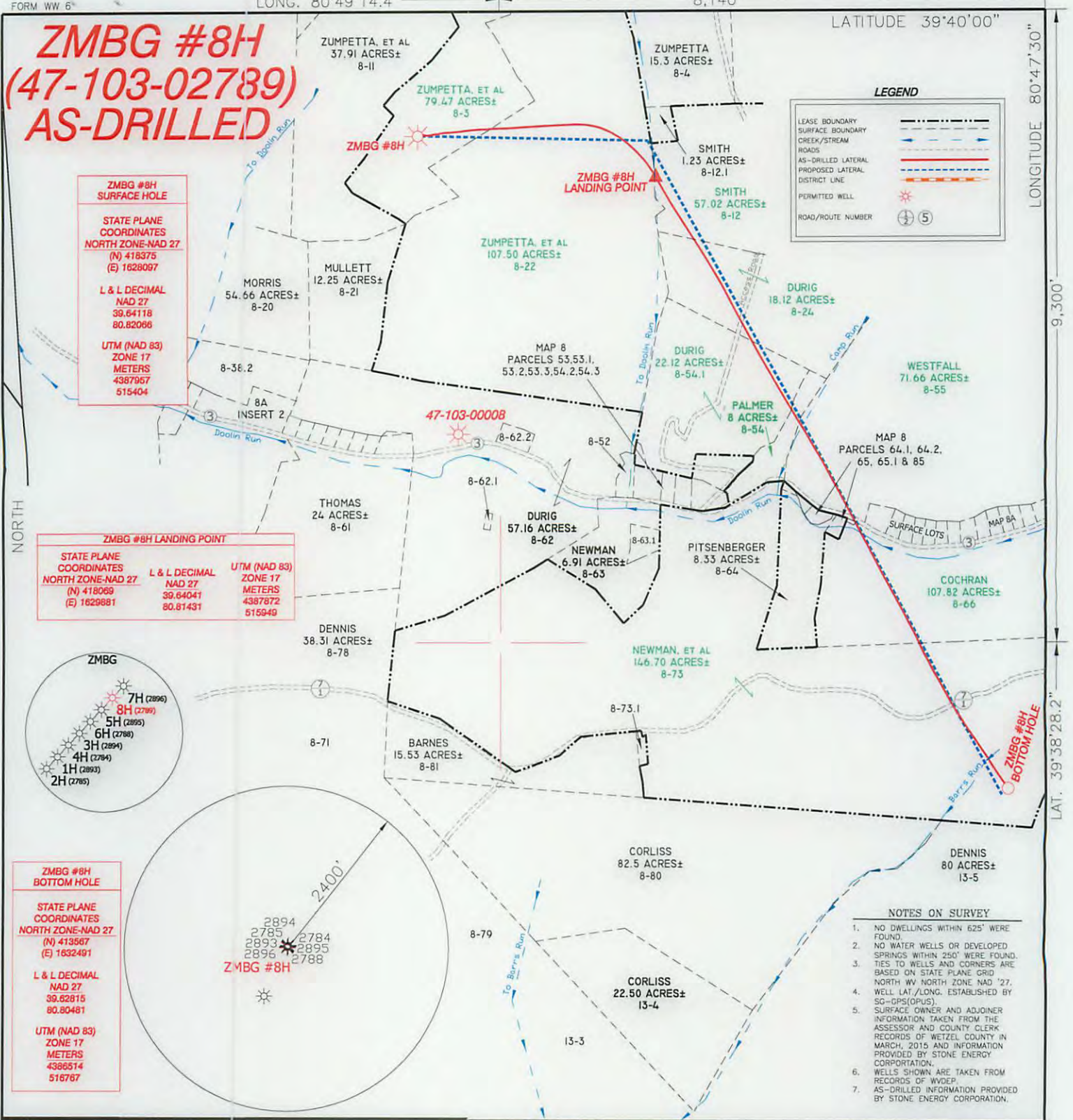
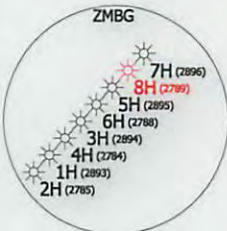
UTM (NAD 83)  
ZONE 17  
METERS  
4387872  
515949

**ZMBG #8H BOTTOM HOLE**

STATE PLANE COORDINATES  
NORTH ZONE-NAD 27  
(N) 413567  
(E) 1632491

L & L DECIMAL  
NAD 27  
39.62815  
80.80481

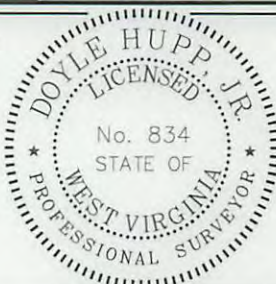
UTM (NAD 83)  
ZONE 17  
METERS  
4386514  
516767



- 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 MARCH, 2015 AND INFORMATION PROVIDED BY STONE ENERGY CORPORATION.
  6. WELLS SHOWN ARE TAKEN FROM RECORDS OF WDEP.
  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.


*Doyle Hupp, Jr.*



(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS.  
DATE JULY 15, 20 15  
OPERATORS WELL NO. ZMBG #8H  
API WELL NO. 47-103-02789  
STATE COUNTY PERMIT

MINIMUM DEGREE OF ACCURACY 1/2500 FILE NO. W2068 (BK 77-29)  
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 1,340' WATERSHED TRIBUTARY OF DOOLIN RUN  
DISTRICT MAGNOLIA COUNTY WETZEL QUADRANGLE NEW MARTINSVILLE 7.5'  
SURFACE OWNER LAWRENCE ZUMPETTA, et al ACREAGE 79.47±  
ROYALTY OWNER LAWRENCE ZUMPETTA, et al LEASE ACREAGE 618.41±  
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 6,884' MD 12,949'

WELL OPERATOR STONE ENERGY CORPORATION DESIGNATED AGENT TIM MCGREGOR  
ADDRESS P.O. BOX 52807 LAFAYETTE, LA 70508 ADDRESS 6000 HAMPTON CENTER SUITE B MORGANTOWN WV 26505

10/09/2015