

PM

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

API 47-103-02785 County Wetzel District Magnolia  
Quad New Martinsville Pad Name ZMBG Field/Pool Name Mary  
Farm name Zumpetta, Lawrence et al 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 4,387,930 Easting 515,379  
Landing Point of Curve Northing 4,387,348 Easting 515,386  
Bottom Hole Northing 4,386,060 Easting 516,000

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 8/1/12 & 3/5/14 Date drilling commenced 8/21/2013 Date drilling ceased 3/21/2014  
Date completion activities began 8/5/2014 Date completion activities ceased 1/28/2015  
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 95 Open mine(s) (Y/N) depths RECEIVED  
Salt water depth(s) ft None Reported Void(s) encountered (Y/N) depths Office of (N) and Gas  
Coal depth(s) ft 1,069 Cavern(s) encountered (Y/N) depths N  
Is coal being mined in area (Y/N) N AUG 27 2015

Reviewed by: [Signature]  
WV Department of Environmental Protection  
10/16/2015

API 47- 103 - 02785 Farm name Zumpetta, Lawrence et al Well number #2H

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"	91'	New	LS		N - GTS
Surface	17.5"	13.375"	1,294'	New	J55	119' & 198'	Y - CTS
Coal	17.5"	13.375"	1,294'	New	J55	119' & 198'	Y - CTS
Intermediate 1	12.25"	9.625"	2,585'	New	J55		Y - CTS
Intermediate 2							
Intermediate 3							
Production	8.75"	5.5"	12,627'	New	P110		N - TOC @ 2,170'
Tubing	N/A	2.375"	7,614'	New	N80		N/A
Packer type and depth set							

Comment Details Circulated 10 bbls cement to surface on 13.375" casing string. Circulated 40 bbls cement to surface on the 9.625" casing string.  
TOC on 5.5" after running CBL @ 2,170'.

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"	980	15.6	1.20	1,176	Surface	8.0
Coal	Class "A"	980	15.6	1.20	1,176	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	12.0
Intermediate 2							
Intermediate 3							
Production	Lead-EcoSpacer Tail-VariCem	Lead-105 Tail-2,460	Lead-14.5 Tail-15.2	Lead-2.66 Tail-1.20	Lead-279 Tail-2,952	2,170	7.0
Tubing							

Drillers TD (ft) 12,635 MD / 6,932 TVD Loggers TD (ft) N/A  
Deepest formation penetrated Marcellus Shale Plug back to (ft) \_\_\_\_\_  
Plug back procedure \_\_\_\_\_

Kick off depth (ft) 5,911 MD / 5,890' 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 3, 6, 9, 12, 15, 18, 21, 24, 27 and 30. Intermediate casing had bow spring centralizers placed on joints 15, 18, 21, 24, 27, 30, 33 and 36.  
Production casing had rigid spiral centralizers placed on every fourth joint beginning with joint 1 to joint 159. Ran a total of 41 rigid spiral centralizers. Ran bow spring centralizers from joint 167 to joint 263 on every eighth joint. A total of 13 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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PERFORATION RECORD

Stage No.	Perforation date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formation(s)
1	8/15/14	12,385	12,555	72	Marcellus Shale
2	8/23/14	12,135	12,318	72	Marcellus Shale
3	8/25/14	11,885	12,063	72	Marcellus Shale
4	8/26/14	11,635	11,818	72	Marcellus Shale
5	8/27/14	11,370	11,568	72	Marcellus Shale
6	8/28/14	11,115	11,313	72	Marcellus Shale
7	9/3/14	10,870	11,058	72	Marcellus Shale
8	9/4/14	10,605	10,803	72	Marcellus Shale
9	9/8/14	10,350	10,547	72	Marcellus Shale
10	9/9/14	10,095	10,293	72	Marcellus Shale
11	9/10/14	9,840	10,038	72	Marcellus Shale
12	9/11/14	9,584	9,783	72	Marcellus Shale
13	9/12/14	9,336	9,528	72	Marcellus Shale
14	9/13/14	9,080	9,273	72	Marcellus Shale
15	9/14/14	8,820	9,015	72	Marcellus Shale
16	9/15/14	8,565	8,763	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	8/23/14	85.5	7,537	5,628	5,172	355,680	8,177	
2	8/25/14	85.5	7,632	5,511	4,947	425,100	8,178	
3	8/26/14	85.4	7,862	6,566	4,243	208,800	7,642	
4	8/27/14	85.4	7,760	7,308	3,805	407,300	8,232	
5	8/28/14	83.1	7,421	5,996	4,766	420,860	8,463	
6	9/3/14	85.4	7,832	5,693	4,912	417,740	8,497	
7	9/4/14	79.5	7,961	6,822	4,590	208,259	6,548	
8	9/5/14	78.3	7,645	6,604	4,826	404,760	9,025	
9	9/9/14	77.1	7,092	5,283	4,736	414,520	8,188	
10	9/10/14	80.1	6,902	5,870	4,207	412,960	8,929	
11	9/11/14	79.2	6,880	5,670	5,029	415,680	8,372	
12	9/12/14	80.3	7,242	6,292	5,148	420,400	8,239	
13	9/13/14	80.2	7,514	6,715	5,412	417,160	8,299	
14	9/14/14	80.4	7,631	7,001	4,883	417,000	8,332	
15	9/15/14	78.7	7,288	7,259	5,295	424,320	8,416	
16	9/16/14	80.2	7,259	6,954	5,571	408,960	8,234	

Please insert additional pages as applicable.

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 API 47-103-02785  
 Stone Energy Corporation

	Horizontal		Bottom (ft TVD)	Bottom (ft MD)	
	Top (ft TVD)	Top (ft MD)			
Sandstone & Shale	Surface	*	1,069'		FW @ 95'
Coal	1,069'	*	1,071'		
Sandstone & Shale	1,071'	*	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'	*	5,876'	5,897'	
Rhinestreet	5,876'	5,897' ~	6,496'	6,629'	
Cashaqua	6,496'	6,629' ~	6,642'	6,904'	
Middlesex	6,642'	6,904' ~	6,664'	6,936'	
West River	6,664'	6,936' ~	6,726'	7,141'	
Geneseo	6,726'	7,141' ~	6,742'	7,201'	
Tully Limestone	6,742'	7,201' ~	6,783'	7,349'	
Hamilton Shale	6,783'	7,349' ~	6,838'	7,612'	
Marcellus	6,838'	7,612' ~	6,932'	12,635'	
TD			6,932'	12,635'	

\* From Pilot Hole Log and Driller's Log

~ From MWD Gamma Log

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103.02785

**Hydraulic Fracturing Fluid Product Component Information Disclosure**

Fracture Date:	9/21/2014
State:	West Virginia
County/Parish:	Wetzel County
API Number:	47-103-02785
Operator Name:	Stone Energy
Well Name and Number:	ZMBG #2H
Longitude:	515,379
Latitude:	4,387,931
Long/Lat Projection:	
Production Type:	Natural Gas
True Vertical Depth (TVD):	6648
Total Water Volume (gal)*:	6423264

**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		88.20783%	
			Crystalline silica	14808-60-7	98.33842%	11.59623%	
			Hydrochloric acid	7647-01-0	0.92937%	0.10959%	
			Ammonium sulfate	7783-20-2	0.15623%	0.01842%	
			Polyethylene glycol monohexyl ether	31726-34-8	0.07959%	0.00938%	
			Glutaraldehyde	111-30-8	0.05753%	0.00678%	
			Diammonium peroxidisulfate	7727-54-0	0.02915%	0.00344%	
			Urea	57-13-6	0.02604%	0.00307%	
			Dicoco dimethyl quaternary ammonium chloride	61789-77-3	0.00612%	0.00072%	
			Trisodium ortho phosphate	7601-54-9	0.00451%	0.00053%	
			Ethylene Glycol	107-21-1	0.00451%	0.00053%	
			Sodium erythorbate	6381-77-7	0.00352%	0.00041%	
			Methanol	67-56-1	0.00312%	0.00037%	
			Thiourea formaldehyde polymer	Proprietary	0.00156%	0.00018%	
			Calcium chloride	10043-52-4	0.00145%	0.00017%	
			Aliphatic acids	Proprietary	0.00120%	0.00014%	
			Propargyl alcohol	107-19-7	0.00052%	0.00006%	
			Aliphatic alcohols, ethoxylated #2	Proprietary	0.00052%	0.00006%	
			Olefin hydrocarbon	Proprietary	0.00026%	0.00003%	
			Polypropylene glycol	25322-69-4	0.00014%	0.00002%	
			Hexadec-1-ene	629-73-2	0.00010%	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-34839 (Generated on 2/16/2015 4:41 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 B.

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# ZMBG #2H (47-103-02785) AS-DRILLED

LONGITUDE 80°47'30"  
9,390'  
LAT. 39°38'27.4"

**LEGEND**

- LEASE BOUNDARY: Dashed line
- SURFACE BOUNDARY: Solid line
- CREEK/STREAM: Blue line with arrows
- ROADS: Solid line with double dashes
- AS-DRILLED LATERAL: Red line
- PROPOSED LATERAL: Blue dashed line
- DISTRICT LINE: Dotted line
- PERMITTED WELL: Sun symbol
- ROAD/ROUTE NUMBER: Circle with number

**ZMBG #2H SURFACE HOLE**

STATE PLANE COORDINATES  
NORTH ZONE-NAD 27  
(N) 418288  
(E) 1628014

L & L DECIMAL  
NAD 27  
39.64093  
80.82095

UTM (NAD 83)  
ZONE 17  
METERS  
4387930  
515379

**ZMBG #2H LANDING POINT**

STATE PLANE COORDINATES  
NORTH ZONE-NAD 27  
(N) 416380  
(E) 1628006

L & L DECIMAL  
NAD 27  
39.63570  
80.82088

UTM (NAD 83)  
ZONE 17  
METERS  
4387348  
515386



**ZMBG #2H BOTTOM HOLE**

STATE PLANE COORDINATES  
NORTH ZONE-NAD 27  
(N) 412121  
(E) 1629949

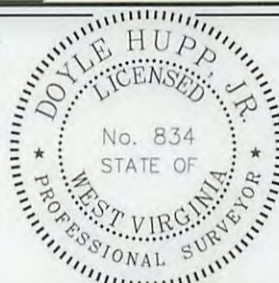
L & L DECIMAL  
NAD 27  
39.62408  
80.81376

UTM (NAD 83)  
ZONE 17  
METERS  
4386061  
516000



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 #2H  
API WELL NO. 47-103-02785  
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. 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 561.52± **10/16/2015**

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 6,932' MD 12,635'

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

NSV

COUNTY NAME PERMIT