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

PM

API 47 - 103 - 02784 County Wetzel District Magnolia
Quad New Martinsville Pad Name ZMBG Field/Pool Name Mary
Farm name Zumpetta, Lawrence et al Well Number #4H
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 4,387,940	Easting 515,387
Landing Point of Curve	Northing 4,387,581	Easting 515,564
Bottom Hole	Northing 4,389,139	Easting 516,213

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 8/14/2012 Date drilling commenced 9/5/2013 Date drilling ceased 5/10/2014
Date completion activities began 8/5/2014 Date completion activities ceased 1/31/2015
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 1,150 Cavern(s) encountered (Y/N) depths N
Is coal being mined in area (Y/N) N

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Reviewed by: JK

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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"	90'	New	LS		N - GTS
Surface	17.5"	13.375"	1,299'	New	J55	120' & 202'	Y - CTS
Coal	17.5"	13.375"	1,299'	New	J55	120' & 202'	Y - CTS
Intermediate 1	12.25"	9.625"	2,578'	New	J55		Y - CTS
Intermediate 2							
Intermediate 3							
Production	8.75"	5.5"	12,599'	New	P110		N - TOC @ 2,063'
Tubing	N/A	2.375"	7,210'	New	N80		N/A
Packer type and depth set							

Comment Details Circulated 15 bbls cement to surface on 13.375" casing string. Circulated 15 bbls cement to surface on the 9.625" casing string. TOC on 5.5" after running CBL @ 2,063'. Note: only two bow spring centralizers were run on the 13.375" casing string due to heaving Red Beds.

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"	942	15.6	1.21	1,139	Surface	8.0
Coal	Class "A"	942	15.6	1.21	1,139	Surface	8.0
Intermediate 1	Lead-10% Salt Tail-Class "A"	Lead-680 Tail-250	Lead-15.6 Tail 15.6	Lead-1.22 Tail-1.20	Lead-830 Tail-300	Surface	12.0
Intermediate 2							
Intermediate 3							
Production	Lead-TunedSpacer Tail-VariCem	Lead-178 Tail-2,430	Lead- 14.5 Tail-15.2	Lead-2.37 Tail-1.20	Lead-422 Tail-2,916	2,063	7.0
Tubing							

Drillers TD (ft) 12,614 MD / 6,937 TVD Loggers TD (ft) N/A
Deepest formation penetrated Marcellus Shale Plug back to (ft) _____
Plug back procedure _____

Kick off depth (ft) 5,999 MD / 5,976' 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 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 5 to joint 153. Ran a total of 38 rigid spiral centralizers. Ran bow spring centralizers from joint 157 to joint 244 on every third joint. A total of 30 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	8/14/14	12,393	12,497	72	Marcellus Shale
2	8/23/14	12,188	12,326	72	Marcellus Shale
3	8/24/14	11,983	12,116	72	Marcellus Shale
4	8/25/14	11,778	11,916	72	Marcellus Shale
5	8/26/14	11,571	11,693	72	Marcellus Shale
6	8/27/14	11,363	11,507	72	Marcellus Shale
7	8/28/14	11,153	11,306	72	Marcellus Shale
8	9/3/14	10,940	11,096	72	Marcellus Shale
9	9/4/14	10,733	10,874	72	Marcellus Shale
10	9/5/14	10,523	10,676	72	Marcellus Shale
11	9/6/14	10,313	10,458	72	Marcellus Shale
12	9/7/14	10,103	10,256	72	Marcellus Shale
13	9/9/14	9,890	10,043	72	Marcellus Shale
14	9/10/14	9,683	9,836	72	Marcellus Shale
15	9/11/14	9,476	9,623	72	Marcellus Shale
16	9/12/14	9,263	9,407	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	85.2	7,493	5,809	4,892	327,004	6,345	
2	8/24/14	85.4	7,416	6,067	5,283	362,340	6,916	
3	8/25/14	85.4	7,702	5,624	5,033	362,956	6,827	
4	8/26/14	85.3	7,785	5,866	5,334	361,420	6,681	
5	8/27/14	82.8	8,075	6,218	4,848	370,740	8,200	
6	8/28/14	80.7	8,067	6,532	5,086	365,840	6,723	
7	9/3/14	85.5	8,138	6,502	4,383	365,100	7,481	
8	9/4/14	85.7	7,276	5,988	4,265	364,869	7,535	
9	9/5/14	77.9	7,191	6,601	4,825	366,895	6,747	
10	9/6/14	79.7	7,413	5,996	4,590	365,720	6,745	
11	9/7/14	79.5	7,305	6,200	4,972	369,400	6,719	
12	9/8/14	78.4	6,968	5,946	4,883	368,280	6,779	
13	9/10/14	78.8	7,072	5,618	4,619	362,400	6,633	
14	9/11/14	79.8	7,082	7,379	5,089	357,160	6,696	
15	9/12/14	80.3	6,897	5,809	4,736	357,760	6,567	
16	9/13/14	80.3	7,309	6,603	5,295	361,361	6,680	

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	9,053	9,206	72	Marcellus Shale
18	9/14/14	8,838	8,996	72	Marcellus Shale
19	9/15/14	8,633	8,775	72	Marcellus Shale
20	9/16/14	8,423	8,576	72	Marcellus Shale
21	9/17/14	8,204	8,360	72	Marcellus Shale
22	9/18/14	8,003	8,145	72	Marcellus Shale
23	9/19/14	7,743	7,796	72	Marcellus Shale
24	9/20/14	7,570	7,736	72	Marcellus Shale
25	9/21/14	7,330	7,507	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	80.2	7,167	5,921	5,029	363,920	6,638	
18	9/15/14	80.6	7,324	6,362	5,412	362,240	6,721	
19	9/16/14	79.8	7,032	8,005	5,178	366,860	6,647	
20	9/17/14	80.3	6,970	6,942	5,119	367,920	6,503	
21	9/18/17	78.8	7,118	6,708	4,825	365,360	7,495	
22	9/19/14	80.6	7,517	7,331	5,355	367,840	6,309	
23	9/20/14	80.3	7,264	6,619	5,376	365,500	6,602	
24	9/21/14	80.4	7,324	7,401	5,138	367,500	6,556	
25	9/21/14	80.4	7,249	6,440	5,437	363,600	6,619	

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PRODUCING FORMATION(S)	DEPTHS	
Marcellus Shale	6,858' to 6,928' TVD	7,330' to 12,497' MD

Please insert additional pages as applicable.

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

SHUT-IN PRESSURE Surface 2,188 psi Bottom Hole 3,988 calculated psi DURATION OF TEST 55.5 hrs

OPEN FLOW	Gas	Oil	NGL	Water	GAS MEASURED BY
	1,786 mcfpd	bpd	105.6 bpd	518.4 bpd	□ 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					

Please insert additional pages as applicable.

Drilling Contractor Nomac (top-hole) & Saxon Drilling (horizontal)
Address 2034 Martins Branch Rd /9303 New Trails Drive City Mount Morris / The Woodlands State PA / TX Zip 25312 / 77381

Logging Company Scientific Drilling and Schlumberger
Address 3475 Washington Ave / 1178 US HWY 33 East City Finleyville / Weston State PA / WV Zip 15332 / 26452

Cementing Company Halliburton
Address 1628 Jackson Mill Road City Jane Lew State WV Zip 26378

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 8/25/2015

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

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ZMBG #4H
API 47-103-02784
Stone Energy Corporation

	Top (ft TVD)	Horizontal Top (ft MD)		Bottom (ft TVD)	Bottom (ft MD)	
Sandstone & Shale	Surface		*	1,150'		FW @ 100'
Coal	1,150'		*	11,520'		
Sandstone & Shale	1,152'		*	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'		*	5,968'	5,990'	
Rhinestreet	5,968'	5,990'	~	6,483'	6,540'	
Cashaqua	6,483'	6,540'	~	6,648'	6,753'	
Middlesex	6,648'	6,753'	~	6,664'	6,772'	
West River	6,664'	6,772'	~	6,725'	6,887'	
Geneseo	6,725'	6,887'	~	6,741'	6,917'	
Tully Limestone	6,741'	6,917'	~	6,783'	7,008'	
Hamilton Shale	6,783'	7,008'	~	6,825'	7,136'	
Marcellus	6,825'	7,136'	~	6,937'	12,614'	
TD				6,937'	12,614'	

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

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103-02784

Hydraulic Fracturing Fluid Product Component Information Disclosure

Fracture Date:	9/21/2014
State:	West Virginia
County/Parish:	Wetzel County
API Number:	47-103-02784
Operator Name:	Stone Energy
Well Name and Number:	ZMBG #4H
Longitude:	515,387
Latitude:	4,387,940
Long/Lat Projection:	
Production Type:	Natural Gas
True Vertical Depth (TVD):	6937
Total Water Volume (gal)*:	7155212

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, Fluid Loss Additive , Propping	Water (Including Mix Water Supplied by Client)*	NA		86.60706%	
			Crystalline silica	14808-60-7	98.34115%	13.17077%	
			Hydrochloric acid	7647-01-0	0.89220%	0.11949%	
			Ammonium sulfate	7783-20-2	0.12990%	0.01740%	
			Polyethylene glycol monohexyl ether	31726-34-8	0.06690%	0.00896%	
			Glutaraldehyde	111-30-8	0.04858%	0.00651%	
			Diammonium peroxidisulphate	7727-54-0	0.03071%	0.00411%	
			Urea	57-13-6	0.02165%	0.00290%	
			Calcium chloride	10043-52-4	0.01082%	0.00145%	
			Methanol	67-56-1	0.00519%	0.00070%	
			Dicoco dimethyl quaternary ammonium chloride	61789-77-3	0.00515%	0.00069%	
			Trisodium ortho phosphate	7601-54-9	0.00392%	0.00052%	
			Ethylene Glycol	107-21-1	0.00392%	0.00052%	
			Sodium erythorbate	6381-77-7	0.00338%	0.00045%	
			Thiourea formaldehyde polymer	Proprietary	0.00260%	0.00035%	
			Aliphatic acids	Proprietary	0.00199%	0.00027%	
			Aliphatic alcohols, ethoxylated #2	Proprietary	0.00087%	0.00012%	
			Propargyl alcohol	107-19-7	0.00087%	0.00012%	
			Olefin hydrocarbon	Proprietary	0.00043%	0.00006%	
			Hexadec-1-ene	629-73-2	0.00017%	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%

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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.

Project: Mary Prospect
Site: ZMBG Pad
Well: 4H
Wellbore: OH
Design: 4H As Drilled

Scientific Drilling

103-02784

WELL DETAILS: 4H

Ground Level: 1341.00

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.00	0.00	418321.00	1628042.00	39° 38' 27.692 N	80° 49' 15.059 W

REFERENCE INFORMATION

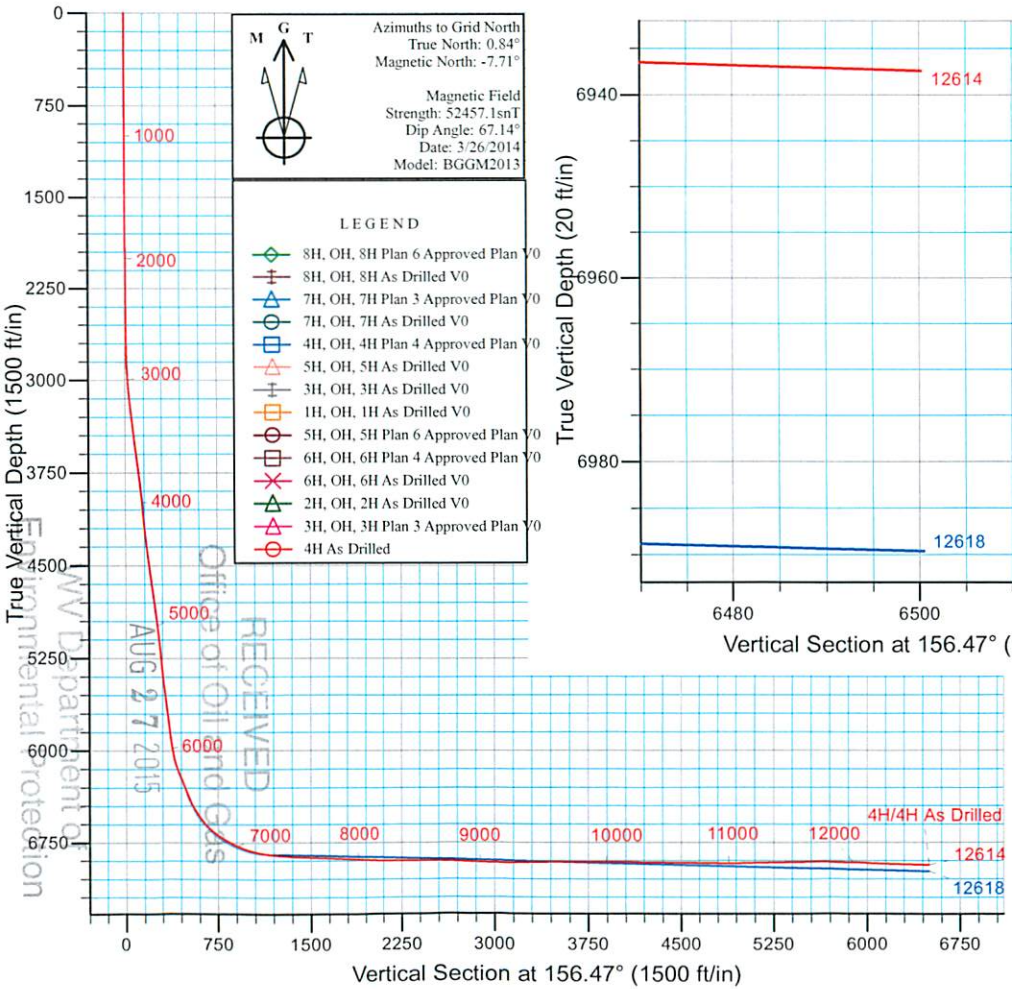
Co-ordinate (N/E) Reference: Well 4H, Grid North
Vertical (TVD) Reference: GL 1341 & KB 18 @ 1359.00ft (Saxon 141)
Section (VS) Reference: Slot - (0.00N, 0.00E)
Measured Depth Reference: GL 1341 & KB 18 @ 1359.00ft (Saxon 141)
Calculation Method: Minimum Curvature

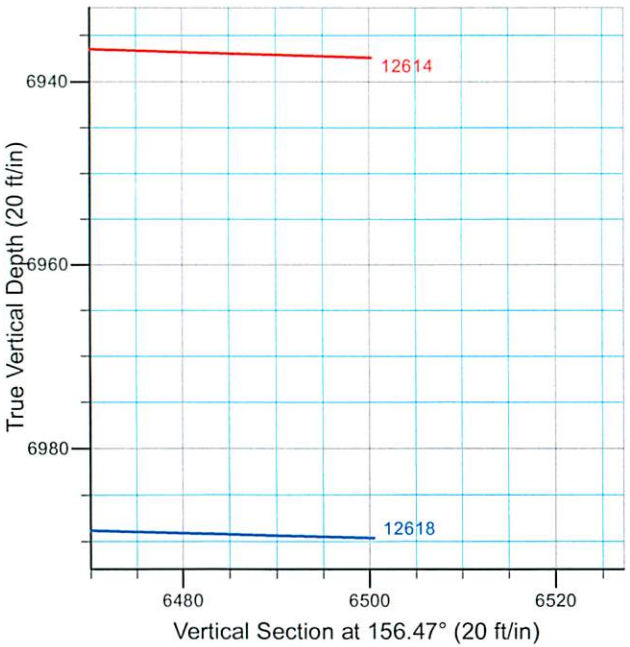
PROJECT DETAILS: Mary Prospect

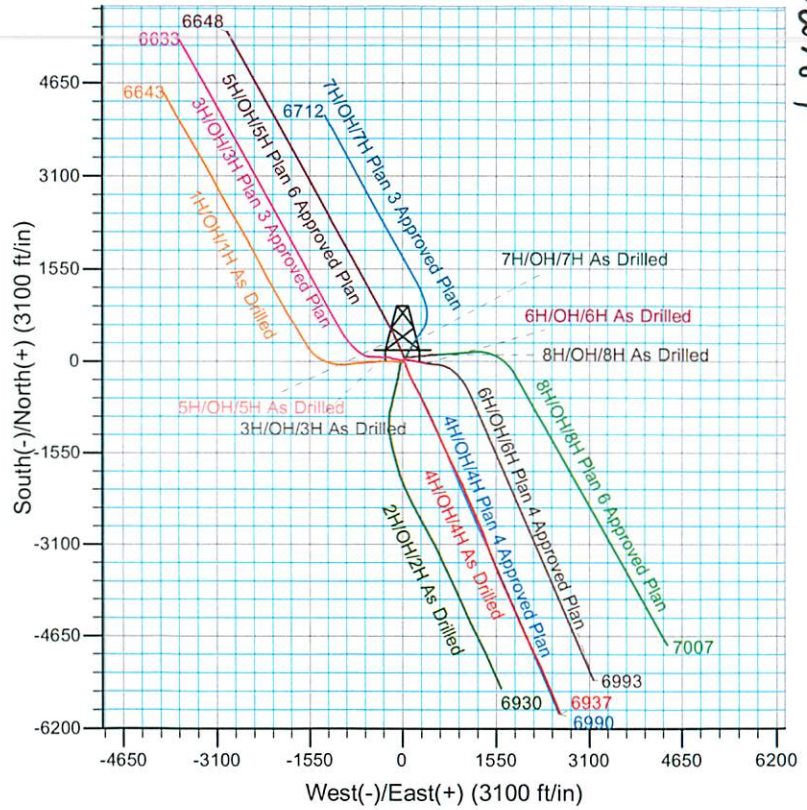
Geodetic System: US State Plane 1927 (Exact solution)
Datum: NAD 1927 (NADCON CONUS)
Ellipsoid: Clarke 1866
Zone: West Virginia North 4701
System Datum: Mean Sea Level

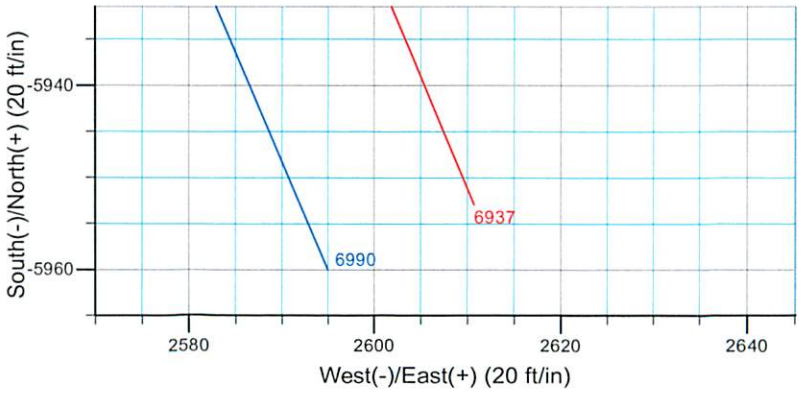
SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target
1	5999.00	8.16	152.75	5976.45	-340.13	165.27	0.00	0.00	377.83	
2	6237.88	22.47	149.59	6206.26	-394.86	196.31	6.00	-4.89	440.40	
3	6454.18	22.47	149.59	6406.13	-466.17	238.17	0.00	0.00	522.49	
4	7282.01	88.50	157.00	6850.00	-1050.00	511.00	8.00	8.10	1166.70	ZMBG 4H_LP4
512617.81		88.50	157.00	6989.68	-5960.01	2595.01	0.00	0.00	6500.45	ZMBG 4H_BHL4









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Stone Energy

Mary Prospect
ZMBG Pad
4H

OH

Design: 4H As Drilled

Standard Survey Report

13 May, 2014

Scientific Drilling

www.scientificdrilling.com

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STONE ENERGY

Scientific Drilling
Survey Report

Scientific Drilling

Company:	Stone Energy	**Local Co-ordinate Reference:**	Well 4H
Project:	Mary Prospect	**TVD Reference:**	GL 1341 & KB 18 @ 1359.00ft (Saxon 141)
Site:	ZMBG Pad	**MD Reference:**	GL 1341 & KB 18 @ 1359.00ft (Saxon 141)
Well:	4H	**North Reference:**	Grid
Wellbore:	OH	**Survey Calculation Method:**	Minimum Curvature
Design:	4H As Drilled	**Database:**	Northeast District

Project Mary Prospect, West Virginia

Map System:	US State Plane 1927 (Exact solution)	**System Datum:**	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	West Virginia North 4701		

Site ZMBG Pad

Site Position:		**Northing:**	418,393.00 usft	**Latitude:**	39° 38' 28.413 N
From:	Map	**Easting:**	1,628,110.00 usft	**Longitude:**	80° 49' 14.204 W
Position Uncertainty:	0.00 ft	**Slot Radius:**	13-3/16 "	**Grid Convergence:**	-0.84 °

Well 4H

Well Position	**+N/-S**	0.00 ft	**Northing:**	418,321.00 usft	**Latitude:**	39° 38' 27.692 N
	+E/-W	0.00 ft	**Easting:**	1,628,042.00 usft	**Longitude:**	80° 49' 15.059 W
Position Uncertainty		0.00 ft	**Wellhead Elevation:**	ft	**Ground Level:**	1,341.00 ft

Wellbore OH

Magnetics	**Model Name**	**Sample Date**	**Declination (°)**	**Dip Angle (°)**	**Field Strength (nT)**
	IGRF2010	5/16/2013	-8.48	67.19	52,608
	BGGM2013	8/28/2013	-8.54	67.19	52,532
	BGGM2013	3/7/2014	-8.55	67.14	52,464
	BGGM2013	2/26/2014	-8.55	67.15	52,467
	BGGM2013	3/26/2014	-8.56	67.14	52,457

Design 4H As Drilled

Audit Notes:

Version:	1.0	**Phase:**	ACTUAL	**Tie On Depth:**	0.00

Vertical Section:	**Depth From (TVD) (ft)**	**+N/-S (ft)**	**+E/-W (ft)**	**Direction (°)**
	0.00	0.00	0.00	156.47

Survey Program **Date** 5/9/2014

From (ft)	**To (ft)**	**Survey (Wellbore)**	**Tool Name**	**Description**
18.00	2,578.00	Survey 3 - Vaughn Gyro (OH)	NS-GYRO-MS	North sensing gyrocompassing m/s
2,592.00	5,933.00	Survey 4 - SDI MWD (OH)	MWD SDI	MWD - Standard ver 1.0.1
5,962.00	12,614.00	Survey 5 - SDI MWD (OH)	MWD SDI	MWD - Standard ver 1.0.1

Survey

Measured Depth (ft)	**Inclination (°)**	**Azimuth (°)**	**Vertical Depth (ft)**	**+N/-S (ft)**	**+E/-W (ft)**	**Vertical Section (ft)**	**Dogleg Rate (°/100usft)**	**Build Rate (°/100usft)**	**Turn Rate (°/100usft)**
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
18.00	0.00	360.00	18.00	0.00	0.00	0.00	0.00	0.00	0.00
Ground Level									
103.00	0.64	91.07	103.00	-0.01	0.47	0.20	0.75	0.75	0.00
First Vaughn Gyro Survey									

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STONE ENERGY

Scientific Drilling

Survey Report

Scientific Drilling

Company:	Stone Energy	**Local Co-ordinate Reference:**	Well 4H
Project:	Mary Prospect	**TVD Reference:**	GL 1341 & KB 18 @ 1359.00ft (Saxon 141)
Site:	ZMBG Pad	**MD Reference:**	GL 1341 & KB 18 @ 1359.00ft (Saxon 141)
Well:	4H	**North Reference:**	Grid
Wellbore:	OH	**Survey Calculation Method:**	Minimum Curvature
Design:	4H As Drilled	**Database:**	Northeast District

Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
203.00	0.66	95.46	202.99	-0.07	1.61	0.71	0.05	0.02	4.39
303.00	0.43	96.07	302.99	-0.17	2.55	1.17	0.23	-0.23	0.61
403.00	0.15	134.80	402.99	-0.30	3.02	1.48	0.33	-0.28	38.73
503.00	0.24	208.91	502.99	-0.58	3.01	1.73	0.25	0.09	74.11
603.00	0.10	250.27	602.99	-0.79	2.83	1.85	0.18	-0.14	41.36
703.00	0.32	280.41	702.98	-0.77	2.47	1.69	0.24	0.22	30.14
803.00	0.30	357.34	802.98	-0.46	2.18	1.29	0.39	-0.02	76.93
903.00	0.24	125.53	902.98	-0.32	2.34	1.22	0.49	-0.06	128.19
1,003.00	0.19	157.11	1,002.98	-0.59	2.58	1.57	0.13	-0.05	31.58
1,103.00	0.27	164.10	1,102.98	-0.97	2.71	1.97	0.08	0.08	6.99
1,203.00	0.11	129.18	1,202.98	-1.26	2.84	2.29	0.19	-0.16	-34.92
1,303.00	0.30	63.91	1,302.98	-1.20	3.15	2.36	0.27	0.19	-65.27
1,403.00	0.32	77.98	1,402.98	-1.03	3.66	2.41	0.08	0.02	14.07
1,503.00	0.24	120.30	1,502.98	-1.08	4.12	2.63	0.22	-0.08	42.32
1,603.00	0.20	145.30	1,602.98	-1.33	4.40	2.97	0.10	-0.04	25.00
1,703.00	0.23	166.19	1,702.98	-1.66	4.54	3.34	0.08	0.03	20.89
1,803.00	0.14	141.06	1,802.98	-1.95	4.67	3.66	0.12	-0.09	-25.13
1,903.00	0.14	144.31	1,902.98	-2.15	4.82	3.89	0.01	0.00	3.25
2,003.00	0.30	136.11	2,002.97	-2.44	5.07	4.26	0.16	0.16	-8.20
2,103.00	0.22	92.03	2,102.97	-2.63	5.44	4.59	0.21	-0.08	-44.08
2,203.00	0.19	85.49	2,202.97	-2.63	5.80	4.72	0.04	-0.03	-6.54
2,303.00	0.16	112.62	2,302.97	-2.67	6.09	4.88	0.09	-0.03	27.13
2,403.00	0.31	168.96	2,402.97	-2.99	6.27	5.24	0.26	0.15	56.34
2,503.00	0.23	173.67	2,502.97	-3.45	6.35	5.70	0.08	-0.08	4.71
2,578.00	0.33	176.67	2,577.97	-3.82	6.38	6.04	0.13	0.13	4.00
Last Vaughn Gyro Survey									
2,603.00	0.23	125.63	2,602.97	-3.92	6.42	6.16	1.03	-0.40	-204.16
First SDI MWD Survey									
2,695.00	0.96	137.99	2,694.96	-4.60	7.09	7.04	0.80	0.79	13.43
2,786.00	1.95	126.94	2,785.93	-6.09	8.84	9.12	1.13	1.09	-12.14
2,881.00	3.25	133.34	2,880.83	-8.91	12.09	13.00	1.40	1.37	6.74
2,975.00	4.43	128.31	2,974.62	-12.99	16.87	18.65	1.30	1.26	-5.35
3,066.00	4.89	132.21	3,065.32	-17.78	22.50	25.28	0.61	0.51	4.29
3,158.00	6.18	137.46	3,156.89	-24.06	28.76	33.54	1.50	1.40	5.71
3,249.00	6.88	143.73	3,247.30	-32.06	35.29	43.49	1.10	0.77	6.89
3,340.00	6.78	145.31	3,337.65	-40.88	41.57	54.07	0.23	-0.11	1.74
3,433.00	6.67	156.03	3,430.02	-50.33	46.89	64.86	1.35	-0.12	11.53
3,523.00	6.95	168.11	3,519.39	-60.43	50.14	75.42	1.62	0.31	13.42
3,614.00	7.15	168.92	3,609.70	-71.38	52.36	86.34	0.25	0.22	0.89
3,706.00	7.41	163.51	3,700.96	-82.68	55.15	97.82	0.60	0.28	-5.88
3,798.00	7.71	159.38	3,792.16	-94.15	59.00	109.87	0.67	0.33	-4.49
3,889.00	6.47	162.31	3,882.46	-104.75	62.71	121.07	1.42	-1.36	3.22
3,980.00	5.63	159.48	3,972.96	-113.81	65.83	130.63	0.98	-0.92	-3.11
4,073.00	5.71	157.54	4,065.50	-122.36	69.20	139.81	0.22	0.09	-2.09

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STONE ENERGY

Scientific Drilling

Survey Report

Scientific Drilling

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Project:	Mary Prospect	**TVD Reference:**	GL 1341 & KB 18 @ 1359.00ft (Saxon 141)
Site:	ZMBG Pad	**MD Reference:**	GL 1341 & KB 18 @ 1359.00ft (Saxon 141)
Well:	4H	**North Reference:**	Grid
Wellbore:	OH	**Survey Calculation Method:**	Minimum Curvature
Design:	4H As Drilled	**Database:**	Northeast District

Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
4,168.00	5.64	152.27	4,160.04	-130.86	73.18	149.19	0.55	-0.07	-5.55
4,261.00	6.30	154.77	4,252.53	-139.52	77.48	158.85	0.76	0.71	2.69
4,354.00	7.34	156.30	4,344.87	-149.58	82.04	169.89	1.14	1.12	1.65
4,446.00	7.98	157.00	4,436.05	-160.84	86.90	182.15	0.70	0.70	0.76
4,540.00	8.64	152.69	4,529.06	-173.12	92.69	195.72	0.97	0.70	-4.59
4,632.00	8.70	156.38	4,620.01	-185.63	98.65	209.58	0.61	0.07	4.01
4,726.00	8.15	161.66	4,713.00	-198.47	103.59	223.32	1.01	-0.59	5.62
4,818.00	7.13	164.06	4,804.18	-210.15	107.21	235.48	1.16	-1.11	2.61
4,911.00	7.21	162.20	4,896.46	-221.26	110.58	247.01	0.26	0.09	-2.00
5,005.00	7.70	160.92	4,989.66	-232.82	114.44	259.15	0.55	0.52	-1.36
5,096.00	7.23	159.40	5,079.89	-243.95	118.45	270.95	0.56	-0.52	-1.67
5,193.00	5.96	159.72	5,176.25	-254.38	122.34	282.07	1.31	-1.31	0.33
5,288.00	5.72	155.66	5,270.75	-263.32	126.01	291.73	0.50	-0.25	-4.27
5,379.00	6.22	154.65	5,361.26	-271.91	129.99	301.19	0.56	0.55	-1.11
5,472.00	6.83	154.12	5,453.66	-281.44	134.56	311.76	0.66	0.66	-0.57
5,564.00	7.39	151.48	5,544.95	-291.56	139.77	323.12	0.70	0.61	-2.87
5,658.00	6.68	151.74	5,638.24	-301.69	145.24	334.59	0.76	-0.76	0.28
5,749.00	6.62	151.86	5,728.63	-310.97	150.22	345.09	0.07	-0.07	0.13
5,841.00	7.25	153.00	5,819.95	-320.82	155.36	356.17	0.70	0.68	1.24
5,933.00	8.16	152.75	5,911.12	-331.80	160.99	368.48	0.99	0.99	-0.27
5,962.00	8.37	155.24	5,939.82	-335.55	162.81	372.64	1.43	0.72	8.59
5,994.00	9.05	155.22	5,971.45	-339.95	164.84	377.49	2.13	2.13	-0.06
6,026.00	10.71	158.90	6,002.98	-345.01	166.97	382.98	5.55	5.19	11.50
6,057.00	12.31	160.25	6,033.35	-350.80	169.12	389.15	5.23	5.16	4.35
6,087.00	13.87	158.28	6,062.57	-357.15	171.53	395.94	5.41	5.20	-6.57
6,117.00	15.59	156.33	6,091.59	-364.19	174.48	403.56	5.97	5.73	-6.50
6,148.00	17.47	155.05	6,121.30	-372.22	178.12	412.38	6.18	6.06	-4.13
6,178.00	19.00	154.14	6,149.80	-380.70	182.15	421.76	5.19	5.10	-3.03
6,209.00	21.10	152.72	6,178.92	-390.20	186.91	432.38	6.95	6.77	-4.58
6,239.00	22.77	151.20	6,206.74	-400.09	192.18	443.55	5.88	5.57	-5.07
6,269.00	22.86	150.06	6,234.40	-410.23	197.88	455.12	1.50	0.30	-3.80
6,299.00	22.09	149.28	6,262.12	-420.13	203.67	466.50	2.75	-2.57	-2.60
6,329.00	21.89	148.66	6,289.93	-429.75	209.46	477.64	1.02	-0.67	-2.07
6,360.00	22.30	149.74	6,318.66	-439.77	215.43	489.21	1.86	1.32	3.48
6,390.00	22.71	151.27	6,346.37	-449.76	221.09	500.63	2.38	1.37	5.10
6,420.00	22.37	151.59	6,374.08	-459.86	226.59	512.08	1.20	-1.13	1.07
6,450.00	22.82	151.31	6,401.78	-469.99	232.09	523.57	1.54	1.50	-0.93
6,481.00	24.86	151.78	6,430.13	-481.00	238.06	536.05	6.61	6.58	1.52
6,511.00	27.13	153.54	6,457.10	-492.68	244.09	549.17	7.99	7.57	5.87
6,542.00	29.48	154.16	6,484.39	-505.88	250.57	563.85	7.64	7.58	2.00
6,572.00	31.86	154.69	6,510.19	-519.68	257.17	579.14	7.98	7.93	1.77
6,602.00	34.36	154.96	6,535.32	-534.51	264.14	595.52	8.35	8.33	0.90
6,633.00	37.20	154.97	6,560.46	-550.93	271.81	613.64	9.16	9.16	0.03

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Company:	Stone Energy	**Local Co-ordinate Reference:**	Well 4H
Project:	Mary Prospect	**TVD Reference:**	GL 1341 & KB 18 @ 1359.00ft (Saxon 141)
Site:	ZMBG Pad	**MD Reference:**	GL 1341 & KB 18 @ 1359.00ft (Saxon 141)
Well:	4H	**North Reference:**	Grid
Wellbore:	OH	**Survey Calculation Method:**	Minimum Curvature
Design:	4H As Drilled	**Database:**	Northeast District

Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
6,663.00	39.99	154.90	6,583.91	-567.88	279.74	632.34	9.30	9.30	-0.23
6,693.00	42.66	155.23	6,606.44	-585.84	288.09	652.14	8.93	8.90	1.10
6,723.00	45.47	155.18	6,627.99	-604.78	296.84	673.00	9.37	9.37	-0.17
6,753.00	48.16	154.57	6,648.52	-624.59	306.13	694.87	9.09	8.97	-2.03
6,785.00	51.00	155.09	6,669.27	-646.63	316.48	719.21	8.96	8.88	1.63
6,817.00	53.69	154.78	6,688.81	-669.58	327.22	744.54	8.44	8.41	-0.97
6,849.00	55.83	155.03	6,707.28	-693.25	338.30	770.66	6.72	6.69	0.78
6,881.00	58.04	155.05	6,724.73	-717.56	349.62	797.47	6.91	6.91	0.06
6,913.00	60.15	154.60	6,741.17	-742.40	361.30	824.91	6.70	6.59	-1.41
6,944.00	62.37	154.73	6,756.07	-766.97	372.93	852.08	7.17	7.16	0.42
6,976.00	64.76	155.10	6,770.32	-792.92	385.07	880.72	7.54	7.47	1.16
7,008.00	66.77	155.15	6,783.45	-819.39	397.35	909.89	6.28	6.28	0.16
7,040.00	68.76	155.27	6,795.56	-846.28	409.76	939.50	6.23	6.22	0.38
7,072.00	70.68	155.38	6,806.65	-873.56	422.29	969.51	6.01	6.00	0.34
7,103.00	72.98	155.85	6,816.32	-900.38	434.45	998.96	7.56	7.42	1.52
7,135.00	75.11	156.30	6,825.11	-928.50	446.93	1,029.73	6.79	6.66	1.41
7,167.00	77.34	156.46	6,832.73	-956.98	459.38	1,060.80	6.99	6.97	0.50
7,199.00	78.23	156.57	6,839.50	-985.66	471.85	1,092.08	2.80	2.78	0.34
7,230.00	80.04	156.37	6,845.35	-1,013.57	484.00	1,122.52	5.87	5.84	-0.65
7,262.00	81.40	156.15	6,850.51	-1,042.48	496.71	1,154.10	4.30	4.25	-0.69
7,294.00	83.21	156.26	6,854.79	-1,071.50	509.51	1,185.81	5.67	5.66	0.34
7,326.00	84.37	156.59	6,858.25	-1,100.65	522.23	1,217.62	3.77	3.63	1.03
7,358.00	84.70	156.31	6,861.30	-1,129.85	534.96	1,249.48	1.35	1.03	-0.88
7,389.00	84.76	156.32	6,864.15	-1,158.12	547.36	1,280.35	0.20	0.19	0.03
7,421.00	85.31	156.55	6,866.92	-1,187.34	560.10	1,312.23	1.86	1.72	0.72
7,453.00	85.51	156.48	6,869.48	-1,216.60	572.81	1,344.12	0.66	0.63	-0.22
7,516.00	88.36	156.70	6,872.85	-1,274.32	597.81	1,407.03	4.54	4.52	0.35
7,579.00	88.25	156.14	6,874.71	-1,332.04	623.00	1,470.00	0.91	-0.17	-0.89
7,643.00	87.45	155.27	6,877.11	-1,390.33	649.31	1,533.95	1.85	-1.25	-1.36
7,707.00	87.35	154.99	6,880.01	-1,448.33	676.20	1,597.86	0.46	-0.16	-0.44
7,770.00	86.98	155.91	6,883.13	-1,505.57	702.34	1,660.78	1.57	-0.59	1.46
7,834.00	86.58	155.62	6,886.73	-1,563.84	728.57	1,724.67	0.77	-0.63	-0.45
7,897.00	87.82	155.56	6,889.80	-1,621.13	754.57	1,787.59	1.97	1.97	-0.10
7,961.00	88.29	153.70	6,891.97	-1,678.93	781.98	1,851.51	3.00	0.73	-2.91
8,024.00	88.62	152.28	6,893.67	-1,735.03	810.58	1,914.37	2.31	0.52	-2.25
8,087.00	88.19	152.62	6,895.43	-1,790.87	839.71	1,977.19	0.87	-0.68	0.54
8,150.00	87.82	153.38	6,897.62	-1,846.97	868.29	2,040.04	1.34	-0.59	1.21
8,212.00	88.89	153.41	6,899.40	-1,902.38	896.04	2,101.92	1.73	1.73	0.05
8,273.00	89.70	153.84	6,900.15	-1,957.02	923.14	2,162.84	1.50	1.33	0.70
8,337.00	90.27	154.25	6,900.17	-2,014.57	951.15	2,226.78	1.10	0.89	0.64
8,400.00	90.37	155.79	6,899.82	-2,071.67	977.76	2,289.76	2.45	0.16	2.44
8,464.00	89.26	157.26	6,900.02	-2,130.37	1,003.25	2,353.76	2.88	-1.73	2.30
8,528.00	88.26	158.27	6,901.41	-2,189.60	1,027.46	2,417.72	2.22	-1.56	1.58

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Project:	Mary Prospect	**TVD Reference:**	GL 1341 & KB 18 @ 1359.00ft (Saxon 141)
Site:	ZMBG Pad	**MD Reference:**	GL 1341 & KB 18 @ 1359.00ft (Saxon 141)
Well:	4H	**North Reference:**	Grid
Wellbore:	OH	**Survey Calculation Method:**	Minimum Curvature
Design:	4H As Drilled	**Database:**	Northeast District

Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
8,592.00	88.69	158.38	6,903.11	-2,249.05	1,051.09	2,481.67	0.69	0.67	0.17
8,655.00	89.30	158.36	6,904.22	-2,307.61	1,074.31	2,544.62	0.97	0.97	-0.03
8,719.00	89.10	158.65	6,905.11	-2,367.15	1,097.76	2,608.58	0.55	-0.31	0.45
8,782.00	88.26	157.88	6,906.56	-2,425.65	1,121.08	2,671.53	1.81	-1.33	-1.22
8,846.00	88.19	157.40	6,908.54	-2,484.81	1,145.42	2,735.48	0.76	-0.11	-0.75
8,909.00	87.89	156.71	6,910.70	-2,542.79	1,169.96	2,798.44	1.19	-0.48	-1.10
8,972.00	87.85	156.41	6,913.04	-2,600.55	1,195.00	2,861.40	0.48	-0.06	-0.48
9,036.00	88.29	156.69	6,915.19	-2,659.23	1,220.46	2,925.36	0.81	0.69	0.44
9,100.00	88.66	156.18	6,916.90	-2,717.88	1,246.04	2,989.34	0.98	0.58	-0.80
9,164.00	88.42	156.01	6,918.53	-2,776.37	1,271.96	3,053.32	0.46	-0.38	-0.27
9,228.00	89.70	157.85	6,919.58	-2,835.24	1,297.04	3,117.30	3.50	2.00	2.88
9,291.00	92.11	161.35	6,918.58	-2,894.27	1,318.99	3,180.19	6.74	3.83	5.56
9,354.00	92.05	161.08	6,916.30	-2,953.87	1,339.26	3,242.93	0.44	-0.10	-0.43
9,417.00	90.74	161.10	6,914.76	-3,013.45	1,359.67	3,305.71	2.08	-2.08	0.03
9,480.00	90.70	161.37	6,913.97	-3,073.10	1,379.94	3,368.48	0.43	-0.06	0.43
9,544.00	90.50	161.51	6,913.30	-3,133.77	1,400.31	3,432.24	0.38	-0.31	0.22
9,608.00	90.07	161.44	6,912.98	-3,194.45	1,420.64	3,495.99	0.68	-0.67	-0.11
9,671.00	91.04	160.95	6,912.37	-3,254.08	1,440.95	3,558.78	1.72	1.54	-0.78
9,734.00	90.23	159.35	6,911.67	-3,313.33	1,462.34	3,621.64	2.85	-1.29	-2.54
9,798.00	89.90	158.72	6,911.60	-3,373.10	1,485.24	3,685.58	1.11	-0.52	-0.98
9,862.00	90.23	158.43	6,911.53	-3,432.67	1,508.61	3,749.53	0.69	0.52	-0.45
9,925.00	89.93	157.92	6,911.44	-3,491.16	1,532.04	3,812.50	0.94	-0.48	-0.81
9,988.00	89.90	156.62	6,911.53	-3,549.26	1,556.38	3,875.50	2.06	-0.05	-2.06
10,052.00	90.57	156.48	6,911.27	-3,607.98	1,581.85	3,939.50	1.07	1.05	-0.22
10,116.00	89.97	156.57	6,910.97	-3,666.68	1,607.34	4,003.49	0.95	-0.94	0.14
10,179.00	89.50	156.41	6,911.26	-3,724.45	1,632.47	4,066.49	0.79	-0.75	-0.25
10,243.00	88.63	155.63	6,912.31	-3,782.91	1,658.48	4,130.48	1.83	-1.36	-1.22
10,307.00	87.96	155.00	6,914.21	-3,841.04	1,685.19	4,194.44	1.44	-1.05	-0.98
10,370.00	88.19	156.33	6,916.33	-3,898.41	1,711.14	4,257.40	2.14	0.37	2.11
10,434.00	88.22	156.90	6,918.33	-3,957.12	1,736.53	4,321.36	0.89	0.05	0.89
10,498.00	89.36	157.71	6,919.68	-4,016.15	1,761.22	4,385.34	2.18	1.78	1.27
10,561.00	90.17	159.12	6,919.94	-4,074.73	1,784.39	4,448.30	2.58	1.29	2.24
10,625.00	90.37	158.21	6,919.64	-4,134.34	1,807.67	4,512.26	1.46	0.31	-1.42
10,689.00	89.50	156.50	6,919.71	-4,193.41	1,832.32	4,576.24	3.00	-1.36	-2.67
10,752.00	88.86	155.42	6,920.61	-4,250.94	1,857.98	4,639.23	1.99	-1.02	-1.71
10,816.00	89.16	154.95	6,921.72	-4,309.02	1,884.83	4,703.21	0.87	0.47	-0.73
10,880.00	89.26	155.83	6,922.60	-4,367.20	1,911.48	4,767.19	1.38	0.16	1.38
10,943.00	89.53	156.53	6,923.27	-4,424.83	1,936.92	4,830.19	1.19	0.43	1.11
11,007.00	90.30	156.72	6,923.36	-4,483.58	1,962.32	4,894.18	1.24	1.20	0.30
11,070.00	90.50	155.87	6,922.92	-4,541.26	1,987.64	4,957.18	1.39	0.32	-1.35
11,134.00	90.44	155.19	6,922.40	-4,599.51	2,014.15	5,021.17	1.07	-0.09	-1.06
11,198.00	91.74	156.32	6,921.18	-4,657.85	2,040.43	5,085.15	2.69	2.03	1.77
11,261.00	91.01	155.23	6,919.67	-4,715.28	2,066.27	5,148.13	2.08	-1.16	-1.73
11,324.00	90.34	153.63	6,918.93	-4,772.11	2,093.46	5,211.08	2.75	-1.06	-2.54

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STONE ENERGY

Scientific Drilling
Survey Report

Scientific Drilling

Company:	Stone Energy	**Local Co-ordinate Reference:**	Well 4H
Project:	Mary Prospect	**TVD Reference:**	GL 1341 & KB 18 @ 1359.00ft (Saxon 141)
Site:	ZMBG Pad	**MD Reference:**	GL 1341 & KB 18 @ 1359.00ft (Saxon 141)
Well:	4H	**North Reference:**	Grid
Wellbore:	OH	**Survey Calculation Method:**	Minimum Curvature
Design:	4H As Drilled	**Database:**	Northeast District

Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
11,388.00	91.07	153.93	6,918.14	-4,829.52	2,121.73	5,275.01	1.23	1.14	0.47
11,451.00	91.54	154.60	6,916.70	-4,886.25	2,149.08	5,337.94	1.30	0.75	1.06
11,515.00	91.74	154.31	6,914.87	-4,943.97	2,176.67	5,401.88	0.55	0.31	-0.45
11,579.00	90.67	154.65	6,913.53	-5,001.72	2,204.23	5,465.82	1.75	-1.67	0.53
11,642.00	90.00	154.64	6,913.16	-5,058.65	2,231.21	5,528.79	1.06	-1.06	-0.02
11,705.00	90.57	155.21	6,912.84	-5,115.71	2,257.91	5,591.76	1.28	0.90	0.90
11,769.00	90.60	156.09	6,912.19	-5,174.01	2,284.30	5,655.75	1.38	0.05	1.38
11,832.00	89.63	155.95	6,912.06	-5,231.57	2,309.90	5,718.75	1.56	-1.54	-0.22
11,896.00	88.32	156.76	6,913.21	-5,290.19	2,335.56	5,782.74	2.41	-2.05	1.27
11,960.00	88.15	156.99	6,915.18	-5,349.02	2,360.69	5,846.71	0.45	-0.27	0.36
12,023.00	87.59	157.13	6,917.52	-5,406.99	2,385.22	5,909.66	0.92	-0.89	0.22
12,087.00	87.35	157.45	6,920.35	-5,465.97	2,409.91	5,973.59	0.62	-0.38	0.50
12,151.00	88.19	157.60	6,922.84	-5,525.07	2,434.36	6,037.53	1.33	1.31	0.23
First SDI MWD Survey									
12,314.00	88.19	157.60	6,927.99	-5,675.69	2,496.44	6,200.42	0.00	0.00	0.00
Projection to Bit									
12,614.00	88.19	157.60	6,937.46	-5,952.92	2,610.70	6,500.21	0.00	0.00	0.00

Design Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates +N/-S (ft)	Local Coordinates +E/-W (ft)	Comment
18.00	18.00	0.00	0.00	Ground Level
103.00	103.00	-0.01	0.47	First Vaughn Gyro Survey
2,578.00	2,577.97	-3.82	6.38	Last Vaughn Gyro Survey
2,603.00	2,602.97	-3.92	6.42	First SDI MWD Survey
12,151.00	6,922.84	-5,525.07	2,434.36	First SDI MWD Survey
12,314.00	6,927.99	-5,675.69	2,496.44	Projection to Bit

Checked By: _____ Approved By: _____ Date: _____

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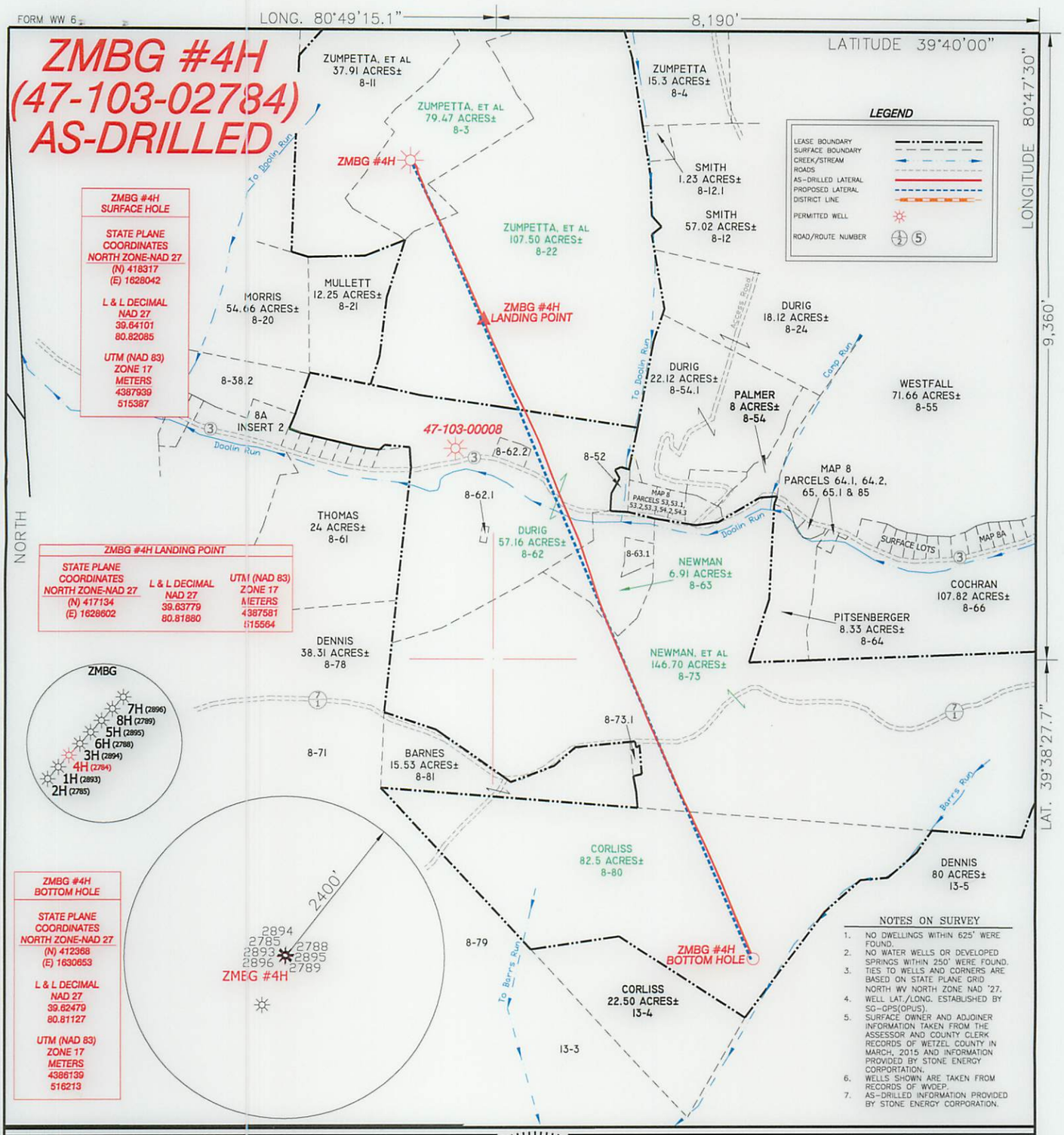
FORM WW 6

ZMBG #4H (47-103-02784) AS-DRILLED



ZMBG #4H SURFACE HOLE

STATE PLANE COORDINATES NORTH ZONE-NAD 27
(N) 418317
(E) 1628042

L & L DECIMAL NAD 27
39.64101
80.82085

UTM (NAD 83) ZONE 17 METERS
4387939
515387

ZMBG #4H LANDING POINT

STATE PLANE COORDINATES NORTH ZONE-NAD 27	L & L DECIMAL NAD 27	UTM (NAD 83) ZONE 17 METERS
(N) 417134	39.63779	4387581
(E) 1628602	80.81880	515564

ZMBG #4H BOTTOM HOLE

STATE PLANE COORDINATES NORTH ZONE-NAD 27
(N) 412368
(E) 1630653

L & L DECIMAL NAD 27
39.62479
80.81127

UTM (NAD 83) ZONE 17 METERS
4386139
516213

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 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 JULY 15, 20 15

OPERATORS WELL NO. ZMBG #4H

API WELL NO. 47 — 103 — 02784
STATE COUNTY PERMIT

MINIMUM DEGREE OF ACCURACY 1/2500 FILE NO. W2068 (BK 77-29)
SCALE 1" = 1000'
PROVEN SOURCE OF ELEVATION SG-GPS(OPUS)

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 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 480.24±
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 6,937' MD 12,614'

COUNTY NAME

PERMIT

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

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

API 47 - 103 - 02788 (02788) County Wetzel District Magnolia
Quad New Martinsville Pad Name ZMBG Field/Pool Name Mary
Farm name Zumpetta, Lawrence et al Well Number #6H
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 4,387,949	Easting 515,395
Landing Point of Curve	Northing 4,387,762	Easting 515,741
Bottom Hole	Northing 4,386,312	Easting 516,374

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 9/14/12 & 3/7/14 Date drilling commenced 9/23/2013 Date drilling ceased 5/28/2014
Date completion activities began 8/6/2014 Date completion activities ceased 2/5/2015
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 1,152 Cavern(s) encountered (Y/N) depths N
Is coal being mined in area (Y/N) N

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API 47- 103 - 02784 Farm name Zumpetta, Lawrence et al Well number #6H

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"	95'	New	LS		N - GTS
Surface	17.5"	13.375"	1,296'	New	J55	123' & 246'	Y - CTS
Coal	17.5"	13.375"	1,296'	New	J55	123' & 246'	Y - CTS
Intermediate 1	12.25"	9.625"	2,564'	New	J55		Y - CTS
Intermediate 2							
Intermediate 3							
Production	8.75"	5.5"	12,630'	New	P110		N - TOC @ 2,154'
Tubing	N/A	2.375"	7,304'	New	J55		N/A
Packer type and depth set							

Comment Details Circulated 37 bbls cement to surface on 13.375" casing string. Circulated 10 bbls cement to surface on the 9.625" casing string. TOC on 5.5" after running CBL @ 2,154'.

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"	980	15.6	1.21	1,186	Surface	8.0
Coal	Class "A"	980	15.6	1.21	1,186	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-TunedSpacer Tail-VariCem	Lead-178 Tail-2,340	Lead- 14.5 Tail-15.2	Lead-2.37 Tail-1.20	Lead-422 Tail-2,808	2,154	7.0
Tubing							

Drillers TD (ft) 12,635 MD / 6,929 TVD Loggers TD (ft) N/A
Deepest formation penetrated Marcellus Shale Plug back to (ft) _____
Plug back procedure _____

Kick off depth (ft) 5,928 MD / 5,907' 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 3, 6, 9, 12, 15, 18, 23, 26, 29, 32, 35 and 38. Production casing had rigid spiral centralizers placed on every fourth joint beginning with joint 1 to joint 232. Ran a total of 59 rigid spiral centralizers. Ran Bow spring centralizers on every eighth joint from joint 240 to joint 288. A total of 7 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 - 02784 Farm name Zumpetta, Lawrence et al Well number #6H

PERFORATION RECORD

Stage No.	Perforation date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formation(s)
1	8/12/14	12,410	12,509	72	Marcellus Shale
2	8/23/14	12,219	12,357	72	Marcellus Shale
3	8/24/14	12,014	12,147	72	Marcellus Shale
4	8/25/14	11,802	11,947	72	Marcellus Shale
5	8/26/14	11,604	11,742	72	Marcellus Shale
6	8/27/14	11,394	11,545	72	Marcellus Shale
7	8/28/14	11,184	11,331	72	Marcellus Shale
8	8/29/14	10,974	11,127	72	Marcellus Shale
9	9/2/14	10,760	10,911	72	Marcellus Shale
10	9/3/14	10,554	10,699	72	Marcellus Shale
11	9/4/14	10,345	10,497	72	Marcellus Shale
12	9/5/14	10,143	10,287	72	Marcellus Shale
13	9/6/14	9,924	10,083	72	Marcellus Shale
14	9/7/14	9,714	9,863	72	Marcellus Shale
15	9/10/14	9,504	9,657	72	Marcellus Shale
16	9/11/14	9,294	9,447	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	84.3	7,371	5,674	4,516	319,260	6,228	
2	8/24/14	85.5	7,657	5,967	5,163	365,400	7,017	
3	8/25/14	85.3	7,905	6,548	5,228	362,300	6,832	
4	8/26/14	82.6	7,612	5,729	5,380	361,000	6,652	
5	8/27/14	85.5	7,746	5,663	5,207	351,404	6,801	
6	8/28/14	80.3	7,875	6,295	4,955	165,060	5,234	
7	8/29/14	84.8	7,465	6,084	5,119	343,550	6,715	
8	9/2/14	75.2	8,351	5,904	5,265	251,410	8,519	
9	9/3/14	77.5	7,704	6,618	4,354	362,520	6,869	
10	9/4/14	78.0	7,273	6,305	4,883	359,574	6,867	
11	9/5/14	80.0	7,073	6,136	4,972	360,600	6,680	
12	9/6/14	77.0	7,509	6,395	4,796	262,040	5,974	
13	9/7/14	74.4	8,493	6,315	4,500	130,900	5,189	
14	9/8/14	77.8	7,682	7,178	5,265	362,460	7,546	
15	9/11/14	80.4	7,252	6,066	5,442	364,960	6,708	
16	9/12/14	80.8	7,443	6,460	5,471	368,560	6,629	

Please insert additional pages as applicable.

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API 47- 103 - 02788 Farm name Zumpetta, Lawerence et al Well number #6H

PERFORATION RECORD

Stage No.	Perforation date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formation(s)
17	9/12/14	9,084	9,238	72	Marcellus Shale
18	9/13/14	8,869	9,027	72	Marcellus Shale
19	9/14/14	8,666	8,817	72	Marcellus Shale
20	9/15/14	8,454	8,607	72	Marcellus Shale
21	9/16/14	8,239	8,392	234	Marcellus Shale
22	9/18/14	8,040	8,178	72	Marcellus Shale
23	9/21/14	7,821	7,977	108	Marcellus Shale
24	9/22/14	7,617	7,767	72	Marcellus Shale
25	9/22/14	7,391	7,553	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	9/13/14	80.7	7,179	6,088	5,471	360,260	6,660	
18	9/14/14	80.5	6,904	6,171	5,561	359,500	6,631	
19	9/15/14	80.4	6,993	5,847	5,677	367,400	6,729	
20	9/16/14	80.3	7,250	6,824	5,412	360,720	6,438	
21	9/17/14	78.1	8,279	7,915	5,778	144,100	8,508	
22	9/19/14	80.0	7,288	6,925	5,471	362,040	6,603	
23	9/22/14	67.6	8,817	6,921	5,894	15,000	4,245	
24	9/22/14	79.8	6,936	6,821	5,259	354,460	6,610	
25	9/23/14	80.2	6,981	6,693	5,289	364,440	6,451	

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Please insert additional pages as applicable.

WR-35
Rev. 8/23/13

API 47- 103 - 02784 Farm name Zumpetta, Lawrence et al Well number #6H

PRODUCING FORMATION(S)	DEPTHS	
Marcellus Shale	6,875' to 6,929' TVD	7,395' to 12,509' MD

Please insert additional pages as applicable.

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

SHUT-IN PRESSURE Surface 2,558 psi Bottom Hole 4,357 calculated psi DURATION OF TEST 67 hrs

OPEN FLOW	Gas	Oil	NGL	Water	GAS MEASURED BY
	1,703 mcfpd	bpd	32.4 bpd	560.6 bpd	□ 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					

Please insert additional pages as applicable.

Drilling Contractor Nomac (top-hole) & Saxon Drilling (horizontal)
Address 2034 Martins Branch Rd /9303 New Trails Drive City Mount Morris / The Woodlands State PA / TX Zip 25312 / 77381

Logging Company Scientific Drilling and Schlumberger
Address 3475 Washington Ave / 1178 US HWY 33 East City Finleyville / Weston State PA / WV Zip 15332 / 26452

Cementing Company Halliburton
Address 1628 Jackson Mill Road City Jane Lew State WV Zip 26378

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 8/25/2015

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

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ZMBG #6H
API 47-103-02788
Stone Energy Corporation

	Top (ft TVD)	Horizontal Top (ft MD)		Bottom (ft TVD)	Bottom (ft MD)	
Sandstone & Shale	Surface		*	1,152'		FW @ 100'
Coal	1,152'		*	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'		*	5,905'	5,925'	
Rhinestreet	5,905'	5,925'	~	6,481'	6,574'	
Cashaqua	6,481'	6,574'	~	6,646'	6,809'	
Middlesex	6,646'	6,809'	~	6,671'	6,839'	
West River	6,671'	6,839'	~	6,728'	6,968'	
Geneseo	6,728'	6,968'	~	6,747'	6,998'	
Tully Limestone	6,747'	6,998'	~		6,788'	
Hamilton Shale	6,788'	7,088'	~	6,831'	7,196'	
Marcellus	6,831'	7,196'	~	6,929'	12,635'	
TD				6,929'	12,635'	

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

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103-02788

Hydraulic Fracturing Fluid Product Component Information Disclosure

Fracture Date:	9/23/2014
State:	West Virginia
County/Parish:	Wetzel County
API Number:	47-103-02788
Operator Name:	Stone Energy
Well Name and Number:	ZMBG #6H
Longitude:	515,395
Latitude:	4,387,949
Long/Lat Projection:	
Production Type:	Natural Gas
True Vertical Depth (TVD):	6929
Total Water Volume (gal)*:	6944113

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, 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		87.94984%	
			Crystalline silica	14808-60-7	98.12723%	11.82449%	
			Hydrochloric acid	7647-01-0	1.10354%	0.13298%	
			Ammonium sulfate	7783-20-2	0.16211%	0.01953%	
			Polyethylene glycol monohexyl ether	31726-34-8	0.07752%	0.00934%	
			Glutaraldehyde	111-30-8	0.05975%	0.00720%	
			Diammonium peroxidisulphate	7727-54-0	0.03176%	0.00383%	
			Urea	57-13-6	0.02702%	0.00326%	
			Dicoco dimethyl quaternary ammonium chloride	61789-77-3	0.00596%	0.00072%	
			Trisodium ortho phosphate	7601-54-9	0.00447%	0.00054%	
			Ethylene Glycol	107-21-1	0.00447%	0.00054%	
			Sodium erythorbate	6381-77-7	0.00438%	0.00053%	
			Calcium chloride	10043-52-4	0.00145%	0.00017%	
			Methanol	67-56-1	0.00064%	0.00008%	
			Thiourea formaldehyde polymer	Proprietary	0.00032%	0.00004%	
			Aliphatic acids	Proprietary	0.00025%	0.00003%	
			Propargyl alcohol	107-19-7	0.00011%	0.00001%	
			Aliphatic alcohols, ethoxylated #2	Proprietary	0.00011%	0.00001%	
			Olefin hydrocarbon	Proprietary	0.00005%	0.00001%	
			Hexadec-1-ene	629-73-2	0.00002%	< 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-34847 (Generated on 2/16/2015 4:45 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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Project: Mary Prospect
Site: ZMBG Pad
Well: 6H
Wellbore: OH
Design: 6H As Drilled

Scientific Drilling

103-02788

WELL DETAILS: 6H

Ground Level: 1341.00

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.00	0.00	418350.00	1628069.00	39° 38' 27.982 N	80° 49' 14.720 W

REFERENCE INFORMATION

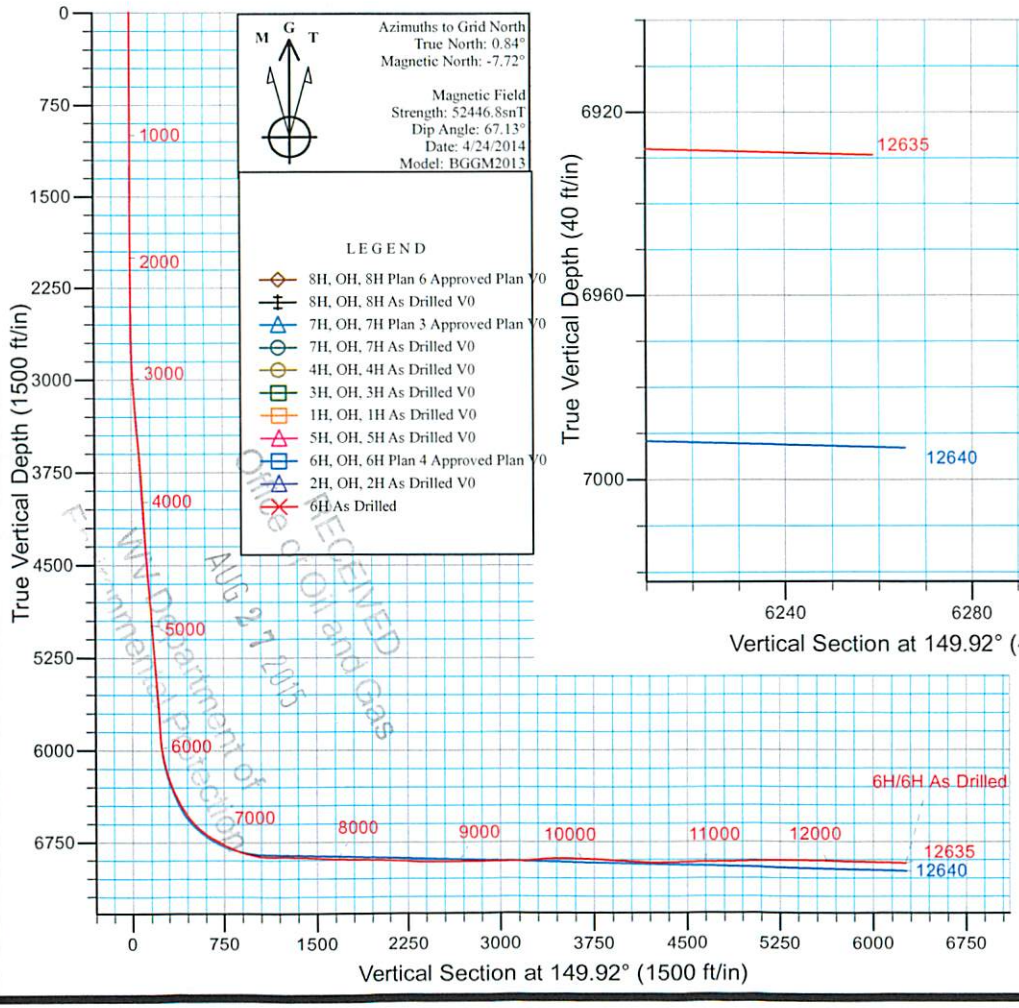
Co-ordinate (N/E) Reference: Well 6H, Grid North
Vertical (TVD) Reference: GL 1341' & KB 18' @ 1359.00ft (Saxon 141)
Section (VS) Reference: Slot - (0.00N, 0.00E)
Measured Depth Reference: GL 1341' & KB 18' @ 1359.00ft (Saxon 141)
Calculation Method: Minimum Curvature

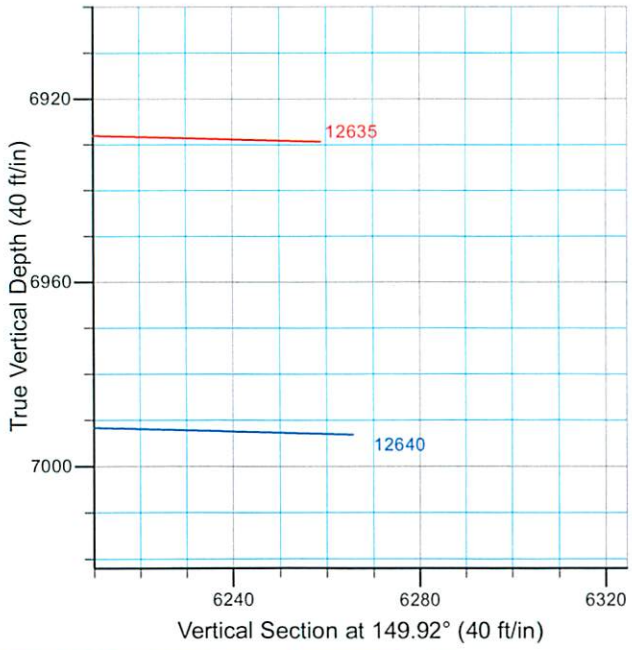
PROJECT DETAILS: Mary Prospect

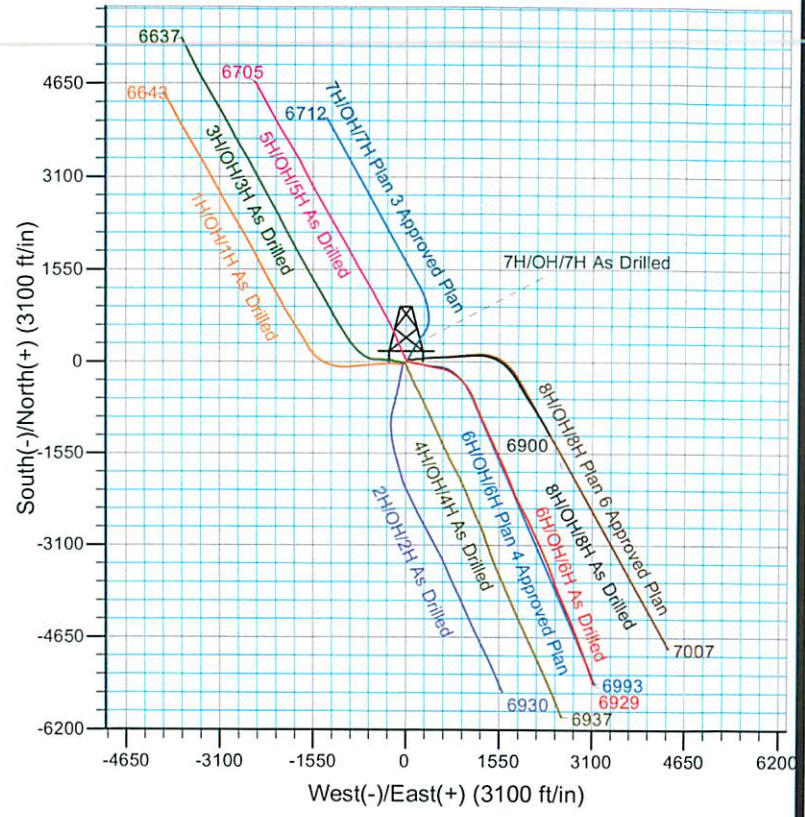
Geodetic System: US State Plane 1927 (Exact solution)
Datum: NAD 1927 (NADCON CONUS)
Ellipsoid: Clarke 1866
Zone: West Virginia North 4701
System Datum: Mean Sea Level

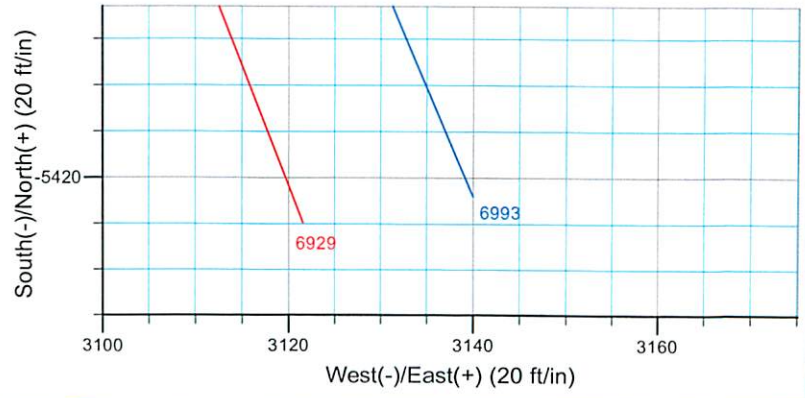
SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target
1	5932.00	7.86	97.24	5911.32	-65.03	354.89	0.00	0.00	234.13	
2	6399.43	35.90	95.33	6340.76	-82.13	526.52	6.00	-2.39	334.94	
3	6492.60	35.90	95.33	6416.23	-87.21	580.92	0.00	0.00	366.59	
4	7399.87	88.50	157.00	6856.00	-599.80	1093.40	8.00	67.26	1067.00	ZMBG 6H_LP3
512640.21		88.50	157.00	6993.18	-5422.01	3140.01	0.00	0.00	6265.61	ZMBG 6H_BHL3









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STONE ENERGY

Scientific Drilling
Survey Report

Scientific Drilling

Company:	Stone Energy	**Local Co-ordinate Reference:**	Well 6H
Project:	Mary Prospect	**TVD Reference:**	GL 1341' & KB 18' @ 1359.00ft (Saxon 141)
Site:	ZMBG Pad	**MD Reference:**	GL 1341' & KB 18' @ 1359.00ft (Saxon 141)
Well:	6H	**North Reference:**	Grid
Wellbore:	OH	**Survey Calculation Method:**	Minimum Curvature
Design:	6H As Drilled	**Database:**	Northeast District

Project Mary Prospect, West Virginia

Map System:	US State Plane 1927 (Exact solution)	**System Datum:**	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	West Virginia North 4701		

Site ZMBG Pad

Site Position:		**Northing:**	418,393.00 usft	**Latitude:**	39° 38' 28.413 N
From:	Map	**Easting:**	1,628,110.00 usft	**Longitude:**	80° 49' 14.204 W
Position Uncertainty:	0.00 ft	**Slot Radius:**	13-3/16 "	**Grid Convergence:**	-0.84 °

Well 6H

Well Position	**+N/-S**	0.00 ft	**Northing:**	418,350.00 usft	**Latitude:**	39° 38' 27.982 N
	+E/-W	0.00 ft	**Easting:**	1,628,069.00 usft	**Longitude:**	80° 49' 14.720 W
Position Uncertainty		0.00 ft	**Wellhead Elevation:**	ft	**Ground Level:**	1,341.00 ft

Wellbore OH

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	5/16/2013	-8.48	67.19	52,608
	BGGM2013	8/28/2013	-8.54	67.19	52,532
	BGGM2013	9/24/2013	-8.54	67.19	52,523
	BGGM2013	3/7/2014	-8.55	67.14	52,464
	BGGM2013	4/24/2014	-8.56	67.13	52,447

Design 6H As Drilled

Audit Notes:

Version:	1.0	**Phase:**	ACTUAL	**Tie On Depth:**	0.00

Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.00	0.00	0.00	149.92

Survey Program **Date** 6/10/2014

From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
107.00	2,437.00	Survey 1 - Vaughn Gyro (OH)	VES GyroFlex	
2,668.00	12,635.00	Survey 2 - SDI MWD (OH)	MWD SDI	MWD - Standard ver 1.0.1

Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
107.00	0.07	50.65	107.00	0.04	0.05	-0.01	0.07	0.07	0.00
First Vaughn Gyro Survey									
207.00	0.13	44.25	207.00	0.16	0.18	-0.05	0.06	0.06	-6.40
307.00	0.19	19.48	307.00	0.40	0.31	-0.19	0.09	0.06	-24.77
407.00	0.14	354.85	407.00	0.68	0.36	-0.41	0.09	-0.05	-24.63

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Site:	ZMBG Pad	**MD Reference:**	GL 1341' & KB 18' @ 1359.00ft (Saxon 141)
Well:	6H	**North Reference:**	Grid
Wellbore:	OH	**Survey Calculation Method:**	Minimum Curvature
Design:	6H As Drilled	**Database:**	Northeast District

Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
507.00	0.19	346.50	507.00	0.96	0.31	-0.68	0.06	0.05	-8.35
607.00	0.13	350.06	607.00	1.23	0.25	-0.94	0.06	-0.06	3.56
707.00	0.18	353.96	707.00	1.50	0.21	-1.19	0.05	0.05	3.90
807.00	0.13	104.90	807.00	1.63	0.30	-1.26	0.26	-0.05	110.94
907.00	0.04	158.28	907.00	1.57	0.43	-1.14	0.11	-0.09	53.38
1,007.00	0.11	224.37	1,007.00	1.47	0.37	-1.08	0.10	0.07	66.09
1,107.00	0.10	321.09	1,107.00	1.46	0.25	-1.14	0.16	-0.01	96.72
1,207.00	0.07	329.44	1,207.00	1.59	0.17	-1.29	0.03	-0.03	8.35
1,307.00	0.12	338.73	1,307.00	1.74	0.10	-1.45	0.05	0.05	9.29
1,407.00	0.05	359.97	1,407.00	1.88	0.06	-1.59	0.08	-0.07	21.24
1,507.00	0.13	348.57	1,507.00	2.03	0.04	-1.74	0.08	0.08	-11.40
1,607.00	0.09	340.35	1,607.00	2.22	-0.01	-1.92	0.04	-0.04	-8.22
1,707.00	0.16	28.14	1,707.00	2.41	0.03	-2.08	0.12	0.07	47.79
1,807.00	0.09	14.58	1,807.00	2.61	0.11	-2.20	0.08	-0.07	-13.56
1,882.00	0.16	12.08	1,882.00	2.77	0.15	-2.32	0.09	0.09	-3.33
1,907.00	0.23	29.42	1,907.00	2.85	0.18	-2.38	0.36	0.28	69.36
2,007.00	0.15	76.04	2,007.00	3.06	0.41	-2.44	0.17	-0.08	46.62
2,107.00	0.10	104.90	2,107.00	3.07	0.62	-2.34	0.08	-0.05	28.86
2,207.00	0.13	234.69	2,207.00	2.98	0.61	-2.27	0.21	0.03	129.79
2,307.00	0.17	268.24	2,307.00	2.91	0.37	-2.33	0.09	0.04	33.55
2,407.00	0.33	251.97	2,407.00	2.81	-0.05	-2.46	0.17	0.16	-16.27
2,437.00	0.14	236.04	2,437.00	2.77	-0.17	-2.48	0.66	-0.63	-53.10
Last Vaughn Gyro Survey									
2,668.00	1.24	81.77	2,667.97	2.97	2.07	-1.53	0.59	0.48	-66.79
2,668.00	1.24	81.77	2,667.98	2.97	2.07	-1.53	0.02	0.00	0.00
First SDI MWD Survey									
2,761.00	2.66	95.13	2,760.92	2.92	5.22	0.09	1.59	1.53	14.37
2,855.00	3.96	97.96	2,854.76	2.27	10.61	3.35	1.39	1.38	3.01
2,946.00	5.47	95.33	2,945.45	1.43	18.04	7.80	1.68	1.66	-2.89
3,039.00	5.69	106.77	3,038.01	-0.31	26.87	13.73	1.22	0.24	12.30
3,131.00	5.76	104.80	3,129.55	-2.80	35.70	20.31	0.23	0.08	-2.14
3,223.00	5.74	100.94	3,221.09	-4.85	44.68	26.59	0.42	-0.02	-4.20
3,313.00	6.49	103.18	3,310.58	-6.87	54.05	33.03	0.87	0.83	2.49
3,405.00	7.54	108.47	3,401.89	-9.97	64.84	41.12	1.34	1.14	5.75
3,498.00	8.05	104.17	3,494.03	-13.49	76.94	50.23	0.83	0.55	-4.62
3,589.00	7.06	103.67	3,584.24	-16.38	88.55	58.55	1.09	-1.09	-0.55
3,680.00	5.84	100.10	3,674.66	-18.51	98.54	65.40	1.41	-1.34	-3.92
3,772.00	5.81	93.59	3,766.19	-19.62	107.80	71.00	0.72	-0.03	-7.08
3,864.00	6.11	100.42	3,857.69	-20.80	117.26	76.76	0.84	0.33	7.42
3,953.00	6.09	99.03	3,946.19	-22.40	126.58	82.82	0.17	-0.02	-1.56
4,048.00	5.90	94.34	4,040.67	-23.56	136.43	88.75	0.55	-0.20	-4.94
4,141.00	6.33	94.08	4,133.14	-24.28	146.31	94.33	0.46	0.46	-0.28
4,236.00	6.49	105.76	4,227.55	-26.11	156.70	101.13	1.38	0.17	12.29

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STONE ENERGY

Scientific Drilling

Survey Report

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Company:	Stone Energy	**Local Co-ordinate Reference:**	Well 6H
Project:	Mary Prospect	**TVD Reference:**	GL 1341' & KB 18' @ 1359.00ft (Saxon 141)
Site:	ZMBG Pad	**MD Reference:**	GL 1341' & KB 18' @ 1359.00ft (Saxon 141)
Well:	6H	**North Reference:**	Grid
Wellbore:	OH	**Survey Calculation Method:**	Minimum Curvature
Design:	6H As Drilled	**Database:**	Northeast District

Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
4,328.00	6.33	102.40	4,318.97	-28.62	166.65	108.28	0.44	-0.17	-3.65
4,421.00	6.26	95.99	4,411.41	-30.25	176.70	114.73	0.76	-0.08	-6.89
4,515.00	6.81	97.91	4,504.80	-31.55	187.32	121.18	0.63	0.59	2.04
4,609.00	7.55	106.70	4,598.07	-34.09	198.76	129.11	1.41	0.79	9.35
4,701.00	7.66	102.87	4,689.26	-37.19	210.52	137.69	0.56	0.12	-4.16
4,795.00	7.57	100.89	4,782.43	-39.76	222.71	146.02	0.30	-0.10	-2.11
4,887.00	7.66	95.50	4,873.62	-41.49	234.77	153.56	0.78	0.10	-5.86
4,977.00	7.90	93.45	4,962.79	-42.44	246.91	160.46	0.41	0.27	-2.28
5,071.00	7.30	98.81	5,055.97	-43.74	259.26	167.78	0.99	-0.64	5.70
5,164.00	6.33	110.37	5,148.31	-46.43	269.91	175.44	1.80	-1.04	12.43
5,254.00	6.13	107.48	5,237.78	-49.60	279.14	182.81	0.41	-0.22	-3.21
5,347.00	6.17	106.68	5,330.25	-52.53	288.66	190.12	0.10	0.04	-0.86
5,440.00	6.41	106.66	5,422.69	-55.45	298.43	197.54	0.26	0.26	-0.02
5,532.00	6.48	103.97	5,514.11	-58.17	308.38	204.89	0.34	0.08	-2.92
5,624.00	6.71	101.87	5,605.50	-60.53	318.68	212.09	0.36	0.25	-2.28
5,716.00	6.74	96.03	5,696.87	-62.21	329.31	218.86	0.74	0.03	-6.35
5,807.00	6.81	97.83	5,787.23	-63.50	339.97	225.33	0.25	0.08	1.98
5,869.00	6.66	93.98	5,848.80	-64.25	347.19	229.60	0.77	-0.24	-6.21
5,898.00	6.82	95.73	5,877.60	-64.54	350.58	231.55	0.90	0.55	6.03
5,930.00	7.78	97.08	5,909.35	-65.00	354.62	233.97	3.05	3.00	4.22
5,962.00	9.12	99.36	5,941.00	-65.68	359.28	236.89	4.32	4.19	7.13
5,994.00	10.58	101.18	5,972.52	-66.66	364.66	240.43	4.66	4.56	5.69
6,026.00	12.11	101.94	6,003.90	-67.92	370.83	244.62	4.80	4.78	2.38
6,057.00	13.49	103.40	6,034.13	-69.43	377.53	249.28	4.57	4.45	4.71
6,089.00	15.08	103.58	6,065.14	-71.28	385.20	254.72	4.97	4.97	0.56
6,121.00	17.11	104.82	6,095.88	-73.46	393.80	260.92	6.43	6.34	3.88
6,153.00	19.44	105.10	6,126.27	-76.05	403.50	268.02	7.29	7.28	0.88
6,185.00	21.79	105.15	6,156.21	-78.99	414.37	276.02	7.34	7.34	0.16
6,216.00	24.18	103.26	6,184.75	-81.95	426.11	284.46	8.07	7.71	-6.10
6,249.00	26.55	101.28	6,214.57	-84.94	439.92	293.97	7.63	7.18	-6.00
6,279.00	28.54	100.37	6,241.17	-87.54	453.55	303.05	6.78	6.63	-3.03
6,309.00	30.39	99.91	6,267.29	-90.14	468.07	312.58	6.21	6.17	-1.53
6,339.00	31.76	100.94	6,292.98	-92.95	483.30	322.64	4.90	4.57	3.43
6,370.00	33.99	101.33	6,319.01	-96.20	499.81	333.72	7.23	7.19	1.26
6,400.00	35.24	101.24	6,343.70	-99.53	516.52	344.98	4.17	4.17	-0.30
6,430.00	36.91	100.24	6,367.95	-102.82	533.88	356.53	5.90	5.57	-3.33
6,459.00	37.12	100.27	6,391.11	-105.93	551.06	367.83	0.73	0.72	0.10
6,490.00	37.55	99.87	6,415.75	-109.21	569.57	379.95	1.59	1.39	-1.29
6,520.00	38.06	100.87	6,439.46	-112.53	587.65	391.88	2.66	1.70	3.33
6,550.00	38.91	102.68	6,462.94	-116.34	605.93	404.34	4.70	2.83	6.03
6,580.00	39.78	106.51	6,486.14	-121.13	624.33	417.71	8.60	2.90	12.77
6,611.00	40.97	109.39	6,509.76	-127.33	643.42	432.64	7.14	3.84	9.29
6,641.00	42.97	111.47	6,532.07	-134.34	662.22	448.12	8.12	6.67	6.93
6,672.00	44.34	113.76	6,554.50	-142.57	681.97	465.14	6.75	4.42	7.39

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STONE ENERGY

Scientific Drilling

Survey Report

Scientific Drilling

Company:	Stone Energy	**Local Co-ordinate Reference:**	Well 6H
Project:	Mary Prospect	**TVD Reference:**	GL 1341' & KB 18' @ 1359.00ft (Saxon 141)
Site:	ZMBG Pad	**MD Reference:**	GL 1341' & KB 18' @ 1359.00ft (Saxon 141)
Well:	6H	**North Reference:**	Grid
Wellbore:	OH	**Survey Calculation Method:**	Minimum Curvature
Design:	6H As Drilled	**Database:**	Northeast District

Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
6,702.00	45.81	115.88	6,575.68	-151.49	701.24	482.52	7.00	4.90	7.07
6,732.00	47.46	118.11	6,596.28	-161.39	720.67	500.82	7.71	5.50	7.43
6,762.00	49.00	120.34	6,616.27	-172.32	740.19	520.06	7.56	5.13	7.43
6,792.00	51.03	122.21	6,635.54	-184.26	759.83	540.24	8.28	6.77	6.23
6,822.00	53.14	124.38	6,653.98	-197.25	779.61	561.39	9.06	7.03	7.23
6,852.00	55.61	125.84	6,671.45	-211.28	799.55	583.53	9.13	8.23	4.87
6,882.00	57.51	127.77	6,687.99	-226.28	819.59	606.55	8.30	6.33	6.43
6,913.00	58.95	129.18	6,704.31	-242.68	840.22	631.08	6.04	4.65	4.55
6,943.00	59.56	130.46	6,719.64	-259.19	860.02	655.29	4.19	2.03	4.27
6,973.00	60.11	132.35	6,734.72	-276.34	879.47	679.88	5.75	1.83	6.30
7,003.00	60.88	133.81	6,749.50	-294.17	898.54	704.87	4.95	2.57	4.87
7,034.00	62.03	135.43	6,764.31	-313.30	917.92	731.14	5.90	3.71	5.23
7,064.00	63.06	136.99	6,778.14	-332.52	936.34	757.00	5.75	3.43	5.20
7,095.00	64.20	139.89	6,791.91	-353.30	954.76	784.21	9.15	3.68	9.35
7,125.00	65.40	141.89	6,804.69	-374.36	971.88	811.02	7.24	4.00	6.67
7,155.00	67.87	143.26	6,816.58	-396.23	988.61	838.33	9.24	8.23	4.57
7,186.00	69.62	144.60	6,827.82	-419.59	1,005.62	867.06	6.94	5.65	4.32
7,216.00	71.60	146.50	6,837.78	-442.92	1,021.63	895.27	8.90	6.60	6.33
7,246.00	73.38	148.17	6,846.81	-467.01	1,037.06	923.85	7.96	5.93	5.57
7,277.00	75.56	149.52	6,855.11	-492.56	1,052.51	953.71	8.19	7.03	4.35
7,308.00	77.77	151.52	6,862.26	-518.82	1,067.35	983.87	9.50	7.13	6.45
7,340.00	80.02	153.02	6,868.42	-546.61	1,081.96	1,015.24	8.40	7.03	4.69
7,372.00	82.54	154.53	6,873.27	-574.99	1,095.94	1,046.80	9.15	7.88	4.72
7,404.00	84.86	155.94	6,876.79	-603.86	1,109.26	1,078.46	8.47	7.25	4.41
7,436.00	88.76	157.76	6,878.57	-633.24	1,121.82	1,110.17	13.45	12.19	5.69
7,468.00	89.87	157.99	6,878.95	-662.88	1,133.87	1,141.86	3.54	3.47	0.72
7,499.00	90.64	157.73	6,878.81	-691.59	1,145.55	1,172.57	2.62	2.48	-0.84
7,531.00	91.27	157.59	6,878.28	-721.18	1,157.71	1,204.27	2.02	1.97	-0.44
7,593.00	88.36	157.41	6,878.48	-778.46	1,181.43	1,265.72	4.70	-4.69	-0.29
7,657.00	87.55	157.47	6,880.76	-837.52	1,205.97	1,329.13	1.27	-1.27	0.09
7,720.00	87.82	157.73	6,883.31	-895.72	1,229.96	1,391.52	0.59	0.43	0.41
7,784.00	87.05	157.26	6,886.17	-954.79	1,254.43	1,454.89	1.41	-1.20	-0.73
7,847.00	86.78	156.79	6,889.56	-1,012.71	1,278.99	1,517.32	0.86	-0.43	-0.75
7,911.00	87.32	156.68	6,892.85	-1,071.42	1,304.23	1,580.78	0.86	0.84	-0.17
7,974.00	87.38	155.76	6,895.77	-1,129.01	1,329.61	1,643.34	1.46	0.10	-1.46
8,037.00	89.23	156.11	6,897.63	-1,186.51	1,355.29	1,705.96	2.99	2.94	0.56
8,101.00	89.90	156.11	6,898.12	-1,245.02	1,381.20	1,769.58	1.05	1.05	0.00
8,164.00	89.40	155.84	6,898.50	-1,302.57	1,406.85	1,832.23	0.90	-0.79	-0.43
8,228.00	89.63	155.70	6,899.04	-1,360.93	1,433.12	1,895.90	0.42	0.36	-0.22
8,292.00	88.93	155.58	6,899.85	-1,419.22	1,459.51	1,959.57	1.11	-1.09	-0.19
8,356.00	87.89	156.26	6,901.62	-1,477.63	1,485.62	2,023.20	1.94	-1.63	1.06
8,419.00	88.36	156.71	6,903.68	-1,535.37	1,510.74	2,085.75	1.03	0.75	0.71
8,480.00	88.26	155.69	6,905.48	-1,591.15	1,535.34	2,146.36	1.68	-0.16	-1.67

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STONE ENERGY

Scientific Drilling

Survey Report

Scientific Drilling

Company:	Stone Energy	**Local Co-ordinate Reference:**	Well 6H
Project:	Mary Prospect	**TVD Reference:**	GL 1341' & KB 18' @ 1359.00ft (Saxon 141)
Site:	ZMBG Pad	**MD Reference:**	GL 1341' & KB 18' @ 1359.00ft (Saxon 141)
Well:	6H	**North Reference:**	Grid
Wellbore:	OH	**Survey Calculation Method:**	Minimum Curvature
Design:	6H As Drilled	**Database:**	Northeast District

Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
8,544.00	87.32	155.70	6,907.95	-1,649.44	1,561.67	2,209.99	1.47	-1.47	0.02
8,607.00	86.95	155.26	6,911.10	-1,706.68	1,587.78	2,272.61	0.91	-0.59	-0.70
8,670.00	88.49	157.07	6,913.61	-1,764.26	1,613.21	2,335.18	3.77	2.44	2.87
8,734.00	90.57	158.13	6,914.13	-1,823.43	1,637.60	2,398.60	3.65	3.25	1.66
8,798.00	90.27	158.48	6,913.66	-1,882.89	1,661.26	2,461.92	0.72	-0.47	0.55
8,861.00	88.76	159.47	6,914.20	-1,941.69	1,683.86	2,524.13	2.87	-2.40	1.57
8,924.00	89.06	159.82	6,915.39	-2,000.75	1,705.77	2,586.21	0.73	0.48	0.56
8,987.00	89.19	159.68	6,916.36	-2,059.85	1,727.57	2,648.28	0.30	0.21	-0.22
9,050.00	91.17	159.86	6,916.16	-2,118.96	1,749.36	2,710.35	3.16	3.14	0.29
9,114.00	90.00	157.25	6,915.50	-2,178.52	1,772.75	2,773.62	4.47	-1.83	-4.08
9,177.00	91.91	159.07	6,914.45	-2,236.98	1,796.18	2,835.95	4.19	3.03	2.89
9,241.00	90.60	156.02	6,913.05	-2,296.11	1,820.62	2,899.36	5.19	-2.05	-4.77
9,305.00	91.68	154.72	6,911.78	-2,354.27	1,847.28	2,963.06	2.64	1.69	-2.03
9,368.00	91.57	152.89	6,909.99	-2,410.77	1,875.08	3,025.89	2.91	-0.17	-2.90
9,400.00	91.08	151.33	6,909.25	-2,439.05	1,890.05	3,057.85	5.11	-1.53	-4.88
9,432.00	90.64	150.77	6,908.77	-2,467.05	1,905.53	3,089.84	2.23	-1.38	-1.75
9,496.00	91.34	150.66	6,907.67	-2,522.86	1,936.84	3,153.83	1.11	1.09	-0.17
9,559.00	93.85	151.87	6,904.81	-2,578.04	1,967.09	3,216.74	4.42	3.98	1.92
9,623.00	95.00	153.26	6,899.88	-2,634.67	1,996.49	3,280.48	2.81	1.80	2.17
9,687.00	94.30	153.93	6,894.69	-2,691.80	2,024.86	3,344.14	1.51	-1.09	1.05
9,750.00	92.38	154.81	6,891.02	-2,748.50	2,052.06	3,406.84	3.35	-3.05	1.40
9,814.00	90.47	155.69	6,889.43	-2,806.60	2,078.84	3,470.54	3.29	-2.98	1.38
9,877.00	87.95	155.84	6,890.29	-2,864.04	2,104.70	3,533.20	4.01	-4.00	0.24
9,941.00	86.95	155.95	6,893.14	-2,922.40	2,130.81	3,596.79	1.57	-1.56	0.17
10,005.00	87.92	155.84	6,896.01	-2,980.76	2,156.92	3,660.38	1.53	1.52	-0.17
10,068.00	87.85	156.52	6,898.33	-3,038.36	2,182.35	3,722.96	1.08	-0.11	1.08
10,132.00	86.91	157.13	6,901.26	-3,097.13	2,207.51	3,786.43	1.75	-1.47	0.95
10,195.00	86.78	156.97	6,904.72	-3,155.05	2,232.04	3,848.84	0.33	-0.21	-0.25
10,259.00	87.11	156.26	6,908.14	-3,213.71	2,257.40	3,912.32	1.22	0.52	-1.11
10,323.00	86.21	156.59	6,911.86	-3,272.27	2,282.96	3,975.80	1.50	-1.41	0.52
10,386.00	85.86	157.27	6,916.22	-3,330.09	2,307.58	4,038.18	1.21	-0.56	1.08
10,450.00	86.58	157.32	6,920.44	-3,389.01	2,332.23	4,101.51	1.13	1.13	0.08
10,514.00	87.22	157.40	6,923.90	-3,447.99	2,356.83	4,164.88	1.01	1.00	0.13
10,577.00	87.95	157.77	6,926.56	-3,506.18	2,380.83	4,227.26	1.30	1.16	0.59
10,641.00	91.11	161.28	6,927.08	-3,566.11	2,403.21	4,290.34	7.38	4.94	5.48
10,705.00	91.74	160.43	6,925.49	-3,626.55	2,424.20	4,353.16	1.65	0.98	-1.33
10,768.00	91.68	160.41	6,923.61	-3,685.88	2,445.30	4,415.08	0.10	-0.10	-0.03
10,832.00	90.94	159.84	6,922.15	-3,746.06	2,467.05	4,478.05	1.46	-1.16	-0.89
10,895.00	90.17	159.18	6,921.54	-3,805.07	2,489.10	4,540.17	1.61	-1.22	-1.05
10,958.00	90.97	158.92	6,920.91	-3,863.90	2,511.63	4,602.37	1.34	1.27	-0.41
11,022.00	90.94	158.09	6,919.84	-3,923.44	2,535.07	4,665.64	1.30	-0.05	-1.30
11,086.00	91.54	156.53	6,918.46	-3,982.47	2,559.76	4,729.09	2.61	0.94	-2.44
11,150.00	89.87	155.74	6,917.67	-4,040.99	2,585.65	4,792.71	2.89	-2.61	-1.23

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Survey Report

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Company:	Stone Energy	**Local Co-ordinate Reference:**	Well 6H
Project:	Mary Prospect	**TVD Reference:**	GL 1341' & KB 18' @ 1359.00ft (Saxon 141)
Site:	ZMBG Pad	**MD Reference:**	GL 1341' & KB 18' @ 1359.00ft (Saxon 141)
Well:	6H	**North Reference:**	Grid
Wellbore:	OH	**Survey Calculation Method:**	Minimum Curvature
Design:	6H As Drilled	**Database:**	Northeast District

Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
11,213.00	90.34	155.84	6,917.55	-4,098.45	2,611.48	4,855.38	0.76	0.75	0.16
11,276.00	92.15	157.46	6,916.18	-4,156.27	2,636.44	4,917.93	3.86	2.87	2.57
11,340.00	93.18	157.62	6,913.21	-4,215.35	2,660.87	4,981.29	1.63	1.61	0.25
11,404.00	93.32	157.80	6,909.58	-4,274.47	2,685.10	5,044.60	0.36	0.22	0.28
11,467.00	92.41	158.11	6,906.43	-4,332.79	2,708.72	5,106.90	1.53	-1.44	0.49
11,530.00	91.00	158.59	6,904.56	-4,391.32	2,731.95	5,169.19	2.36	-2.24	0.76
11,594.00	89.73	159.18	6,904.15	-4,451.02	2,755.01	5,232.41	2.19	-1.98	0.92
11,658.00	89.60	159.58	6,904.52	-4,510.92	2,777.54	5,295.54	0.66	-0.20	0.63
11,721.00	88.59	158.25	6,905.52	-4,569.69	2,800.20	5,357.76	2.65	-1.60	-2.11
11,784.00	87.89	158.04	6,907.45	-4,628.14	2,823.65	5,420.08	1.16	-1.11	-0.33
11,848.00	88.83	158.21	6,909.29	-4,687.51	2,847.48	5,483.40	1.49	1.47	0.27
11,912.00	89.03	159.50	6,910.48	-4,747.18	2,870.56	5,546.61	2.04	0.31	2.02
11,975.00	88.80	160.37	6,911.67	-4,806.35	2,892.17	5,608.64	1.43	-0.37	1.38
12,039.00	88.56	160.00	6,913.15	-4,866.54	2,913.86	5,671.60	0.69	-0.38	-0.58
12,102.00	88.09	160.50	6,914.99	-4,925.81	2,935.14	5,733.55	1.09	-0.75	0.79
12,166.00	88.52	160.08	6,916.88	-4,986.04	2,956.72	5,796.48	0.94	0.67	-0.66
12,230.00	88.49	159.52	6,918.55	-5,046.08	2,978.81	5,859.51	0.88	-0.05	-0.88
12,294.00	88.22	159.39	6,920.39	-5,105.98	3,001.26	5,922.60	0.47	-0.42	-0.20
12,358.00	88.99	159.68	6,921.95	-5,165.93	3,023.63	5,985.68	1.29	1.20	0.45
12,421.00	88.83	159.87	6,923.15	-5,225.03	3,045.41	6,047.74	0.39	-0.25	0.30
12,484.00	87.85	159.32	6,924.97	-5,284.05	3,067.36	6,109.82	1.78	-1.56	-0.87
12,548.00	88.32	158.68	6,927.11	-5,343.77	3,090.28	6,172.98	1.24	0.73	-1.00
12,580.00	88.56	158.97	6,927.98	-5,373.60	3,101.84	6,204.58	1.18	0.75	0.91
Last SDI MWD Survey									
12,635.00	88.56	158.97	6,929.36	-5,424.92	3,121.57	6,258.88	0.00	0.00	0.00
Projection to Bit									

Design Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates +N/-S (ft)	Local Coordinates +E/-W (ft)	Comment
107.00	107.00	0.04	0.05	First Vaughn Gyro Survey
2,437.00	2,437.00	2.77	-0.17	Last Vaughn Gyro Survey
2,668.00	2,667.98	2.97	2.07	First SDI MWD Survey
12,580.00	6,927.98	-5,373.60	3,101.84	Last SDI MWD Survey
12,635.00	6,929.36	-5,424.92	3,121.57	Projection to Bit

Checked By: _____ Approved By: _____ Date: _____

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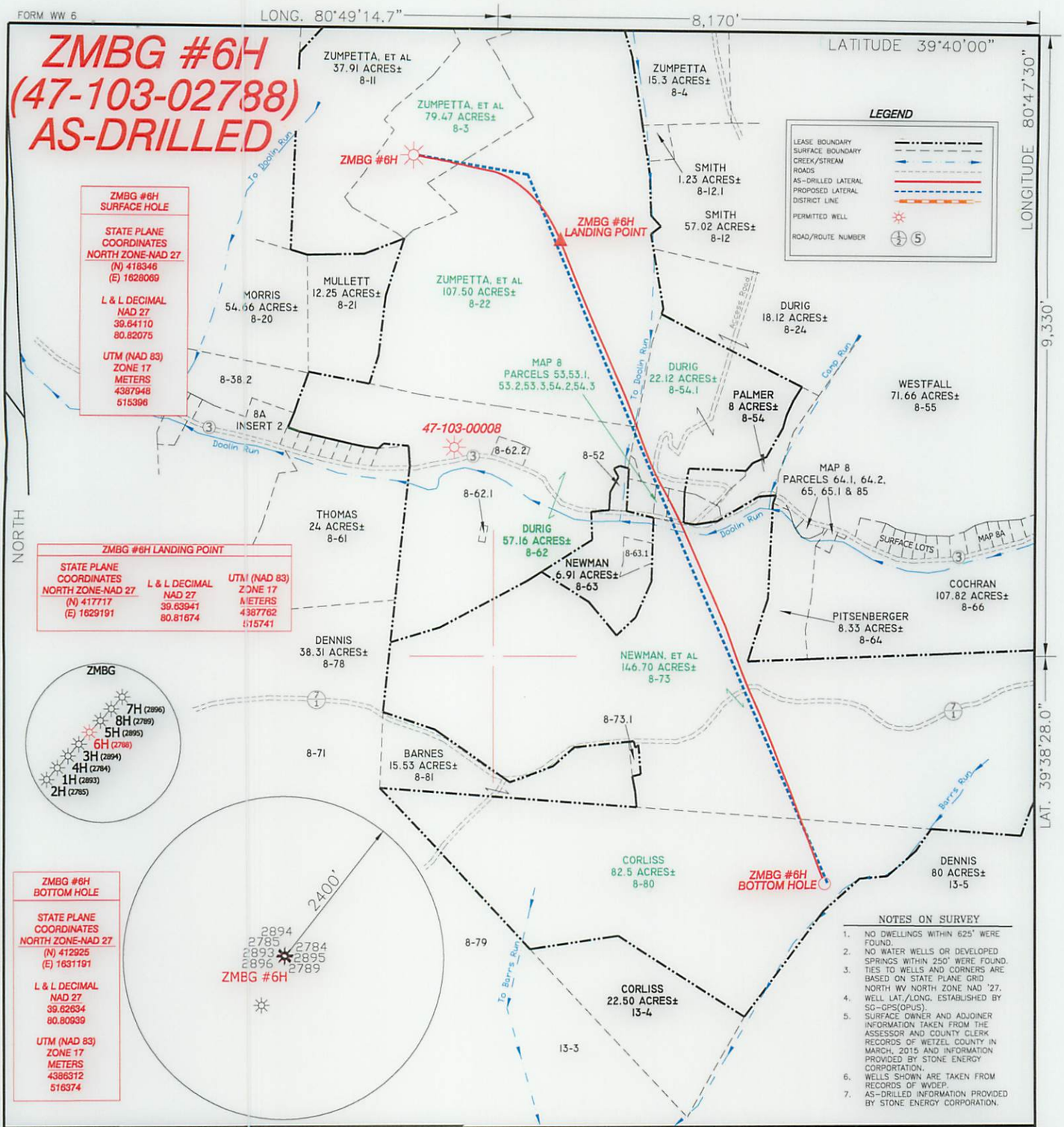

ZMBG #6H SURFACE HOLE

STATE PLANE COORDINATES NORTH ZONE-NAD 27
(N) 418346
(E) 1628069

L & L DECIMAL NAD 27
39.64110
80.82075

UTM (NAD 83) ZONE 17 METERS
4387948
515396

ZMBG #6H LANDING POINT

STATE PLANE COORDINATES NORTH ZONE-NAD 27	L & L DECIMAL NAD 27	UTM (NAD 83) ZONE 17 METERS
(N) 417717	39.63941	4387762
(E) 1629191	80.81674	515741

ZMBG #6H BOTTOM HOLE

STATE PLANE COORDINATES NORTH ZONE-NAD 27
(N) 412925
(E) 1631191

L & L DECIMAL NAD 27
39.62634
80.80939

UTM (NAD 83) ZONE 17 METERS
4386312
516374

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 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 JULY 15, 20 15

OPERATORS WELL NO. ZMBG #6H

API WELL NO. 47 — 103 — 02788
STATE COUNTY PERMIT

MINIMUM DEGREE OF ACCURACY 1/2500 FILE NO. W2068 (BK 77-29)
SCALE 1" = 1000'
PROVEN SOURCE OF ELEVATION SG-GPS(OPUS)

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 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 498.09±
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 6,929' MD 12,635'

COUNTY NAME

PERMIT

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

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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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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^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"	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-TunedSpacer Tail-VariCem	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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API 47- 103 - 02789 Farm name Zumpetta, Lawerence et al Well number #8H

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	349800	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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API 47- 103 - 02789 Farm name Zumpetta, Lawrence et al Well number #8H

PRODUCING FORMATION(S)	DEPTHS	
Marcellus Shale	6,883' to 6,888' TVD	7,728' to 12,878' MD

Please insert additional pages as applicable.

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

SHUT-IN PRESSURE Surface 2,483 psi Bottom Hole 4,248 calculated psi DURATION OF TEST 70 hrs

OPEN FLOW	Gas	Oil	NGL	Water	GAS MEASURED BY
	2,174 mcfpd	bpd	63.0 bpd	582.0 bpd	□ 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					

Please insert additional pages as applicable.

Drilling Contractor Nomac (top-hole) & Saxon Drilling (horizontal)
Address 2034 Martins Branch Rd /9303 New Trails Drive City Mount Morris / The Woodlands State PA / TX Zip 25312 / 77381

Logging Company Scientific Drilling and Schlumberger
Address 3475 Washington Ave / 1178 US HWY 33 East City Finleyville / Weston State PA / WV Zip 15332 / 26452

Cementing Company Halliburton
Address 1628 Jackson Mill Road City Jane Lew State WV Zip 26378

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 8/25/2015

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

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

	Top (ft TVD)	Horizontal Top (ft MD)		Bottom (ft TVD)	Bottom (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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Project: Mary Prospect
Site: ZMBG Pad
Well: 8H
Wellbore: OH
Design: 8H As Drilled

STONE ENERGY

Scientific Drilling

103-02789

WELL DETAILS: 8H

Ground Level: 1341.00

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.00	0.00	418379.00	1628097.00	39° 38' 28.273 N	80° 49' 14.367 W

REFERENCE INFORMATION

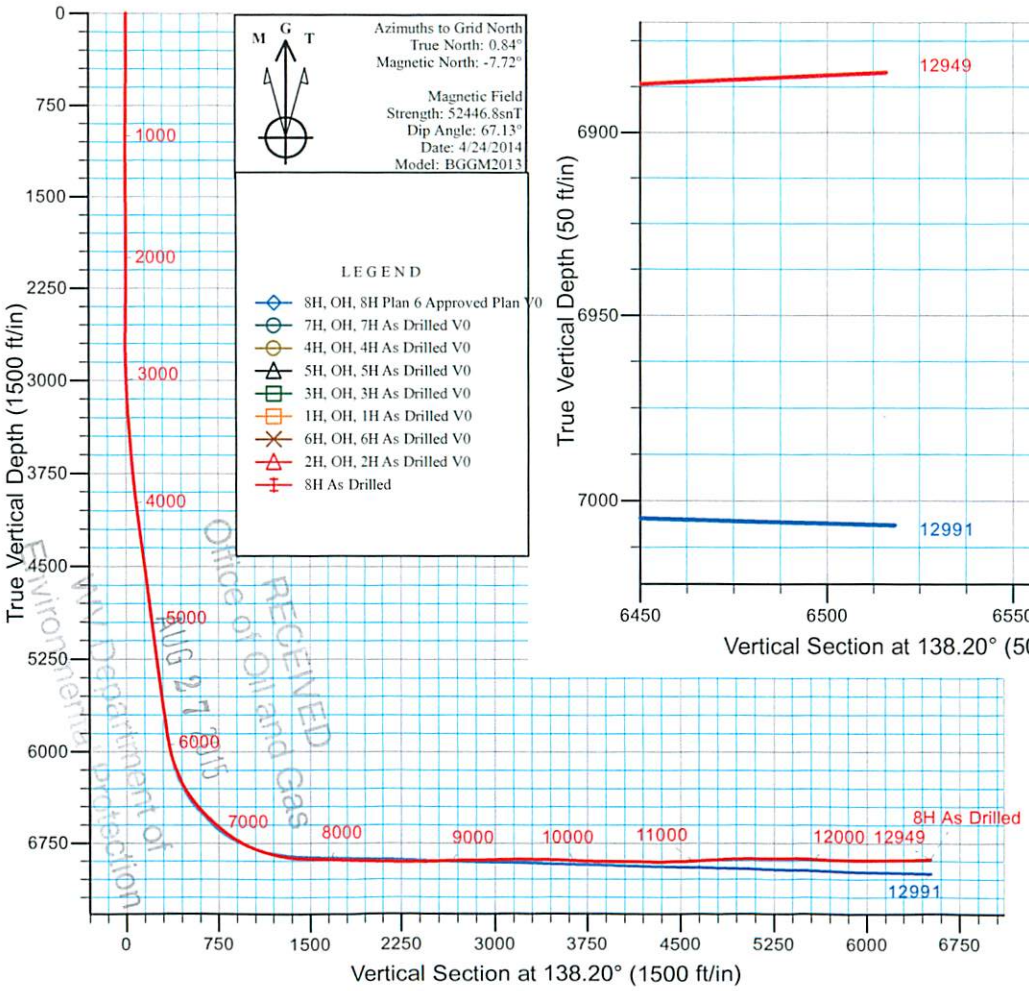
Co-ordinate (N/E) Reference: Well 8H, Grid North
Vertical (TVD) Reference: GL 1341' & KB 18' @ 1359.00ft (Saxon 141)
Section (VS) Reference: Slot - (0.00N, 0.00E)
Measured Depth Reference: GL 1341' & KB 18' @ 1359.00ft (Saxon 141)
Calculation Method: Minimum Curvature

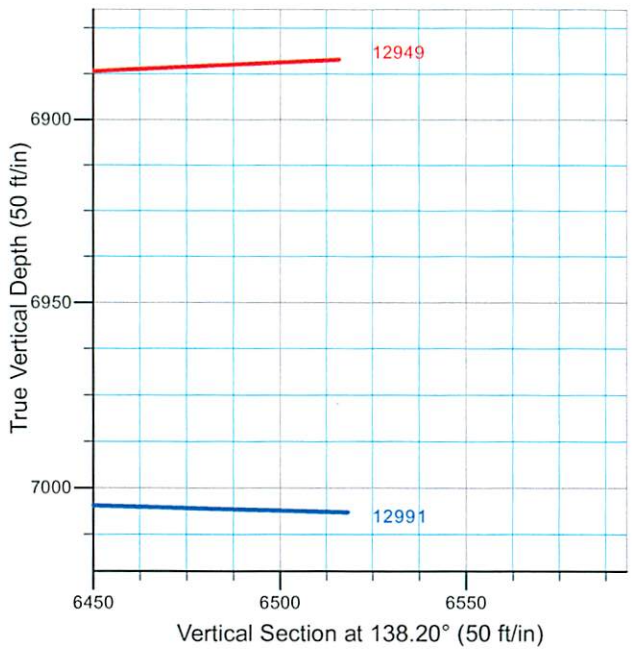
PROJECT DETAILS: Mary Prospect

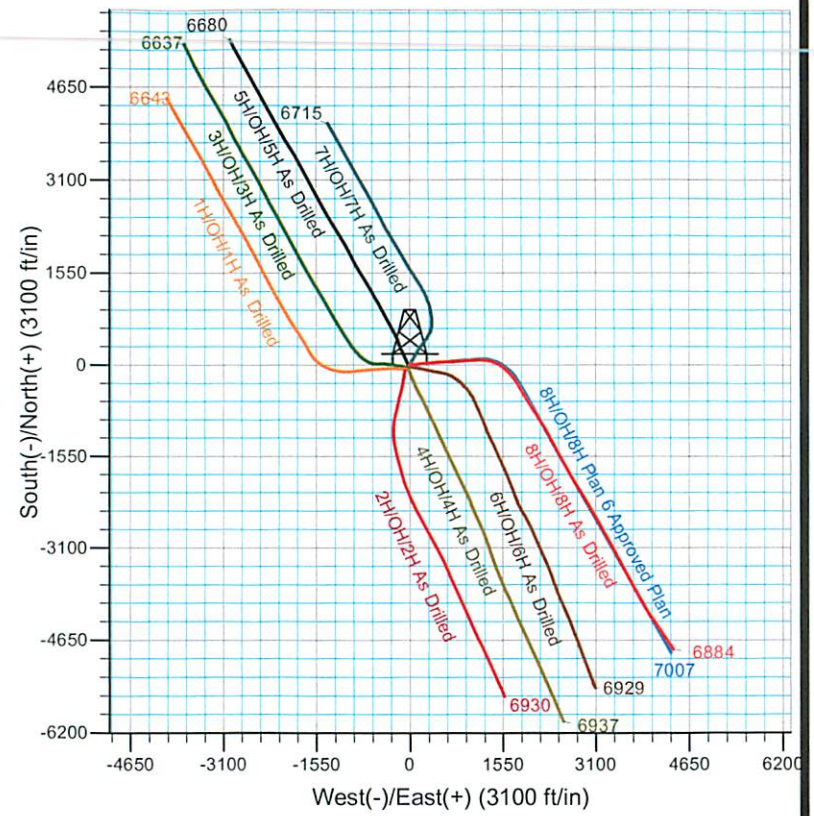
Geodetic System: US State Plane 1927 (Exact solution)
Datum: NAD 1927 (NADCON CONUS)
Ellipsoid: Clarke 1866
Zone: West Virginia North 4701
System Datum: Mean Sea Level

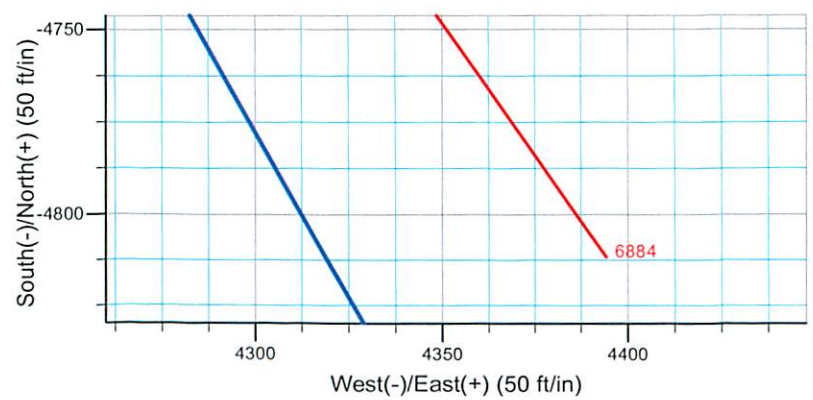
SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target
1	5724.00	11.97	86.53	5673.21	48.85	510.26	0.00	0.00	303.72	
2	5924.00	11.97	86.53	5868.86	51.36	551.66	0.00	0.00	329.45	
3	6689.43	57.89	85.23	6479.74	84.91	976.98	6.00	-1.53	587.94	
4	6909.09	57.89	85.23	6596.49	100.37	1162.39	0.00	0.00	700.01	
5	7769.16	88.50	151.00	6870.00	-293.90	1814.10	8.00	77.87	1428.33	ZMBG 8H_LP3
6	12990.69	88.50	151.00	7006.68	-4859.01	4345.01	0.00	0.00	6518.36	ZMBG 8H_BHL3









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Stone Energy

Mary Prospect
ZMBG Pad
8H

OH

Design: 8H As Drilled

Standard Survey Report

22 July, 2014

Scientific Drilling

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103-02789

STONE ENERGY

Scientific Drilling
Survey Report

Scientific Drilling

Company:	Stone Energy	**Local Co-ordinate Reference:**	Well 8H
Project:	Mary Prospect	**TVD Reference:**	GL 1341' & KB 18' @ 1359.00ft (Saxon 141)
Site:	ZMBG Pad	**MD Reference:**	GL 1341' & KB 18' @ 1359.00ft (Saxon 141)
Well:	8H	**North Reference:**	Grid
Wellbore:	OH	**Survey Calculation Method:**	Minimum Curvature
Design:	8H As Drilled	**Database:**	Northeast District

Project Mary Prospect, West Virginia

Map System:	US State Plane 1927 (Exact solution)	**System Datum:**	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	West Virginia North 4701		

Site ZMBG Pad

Site Position:		**Northing:**	418,393.00 usft	**Latitude:**	39° 38' 28.413 N
From:	Map	**Easting:**	1,628,110.00 usft	**Longitude:**	80° 49' 14.204 W
Position Uncertainty:	0.00 ft	**Slot Radius:**	13-3/16 "	**Grid Convergence:**	-0.84 °

Well 8H

Well Position	**+N/-S**	0.00 ft	**Northing:**	418,379.00 usft	**Latitude:**	39° 38' 28.273 N
	+E/-W	0.00 ft	**Easting:**	1,628,097.00 usft	**Longitude:**	80° 49' 14.367 W
Position Uncertainty		0.00 ft	**Wellhead Elevation:**	ft	**Ground Level:**	1,341.00 ft

Wellbore OH

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	5/16/2013	-8.48	67.19	52,608
	BGGM2013	8/28/2013	-8.54	67.19	52,532
	BGGM2013	10/8/2013	-8.54	67.18	52,518
	BGGM2013	3/7/2014	-8.55	67.14	52,464
	BGGM2013	4/24/2014	-8.56	67.13	52,447

Design 8H As Drilled

Audit Notes:

Version:	1.0	**Phase:**	ACTUAL	**Tie On Depth:**	0.00

Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.00	0.00	0.00	138.20

Survey Program **Date** 7/22/2014

From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
22.00	2,507.00	Survey 1 - SDI Gyro (OH)	SDI Standard Keeper 103	SDI Standard Wireline Keeper ver 1.0.3
2,562.00	5,724.00	Survey 2 - SDI MWD (OH)	MWD SDI	MWD - Standard ver 1.0.1
5,725.00	12,949.00	Survey 3 - SDI MWD (OH)	MWD SDI	MWD - Standard ver 1.0.1

Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
22.00	0.00	360.00	22.00	0.00	0.00	0.00	0.00	0.00	0.00
Ground Level									
107.00	0.28	251.36	107.00	-0.07	-0.20	-0.08	0.33	0.33	0.00
First SDI Gyro Survey									

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Company:	Stone Energy	**Local Co-ordinate Reference:**	Well 8H
Project:	Mary Prospect	**TVD Reference:**	GL 1341' & KB 18' @ 1359.00ft (Saxon 141)
Site:	ZMBG Pad	**MD Reference:**	GL 1341' & KB 18' @ 1359.00ft (Saxon 141)
Well:	8H	**North Reference:**	Grid
Wellbore:	OH	**Survey Calculation Method:**	Minimum Curvature
Design:	8H As Drilled	**Database:**	Northeast District

Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
207.00	0.23	299.48	207.00	-0.05	-0.60	-0.37	0.21	-0.05	48.12
307.00	0.23	268.81	307.00	0.05	-0.98	-0.69	0.12	0.00	-30.67
407.00	0.18	275.25	406.99	0.06	-1.34	-0.93	0.05	-0.05	6.44
507.00	0.29	320.31	506.99	0.27	-1.65	-1.30	0.21	0.11	45.06
607.00	0.24	327.81	606.99	0.64	-1.93	-1.76	0.06	-0.05	7.50
707.00	0.21	327.52	706.99	0.97	-2.14	-2.15	0.03	-0.03	-0.29
807.00	0.23	333.24	806.99	1.31	-2.33	-2.52	0.03	0.02	5.72
907.00	0.19	27.61	906.99	1.63	-2.34	-2.78	0.20	-0.04	54.37
1,007.00	0.14	57.61	1,006.99	1.84	-2.16	-2.81	0.10	-0.05	30.00
1,107.00	0.06	102.76	1,106.99	1.90	-2.00	-2.75	0.11	-0.08	45.15
1,207.00	0.14	113.63	1,206.99	1.84	-1.84	-2.60	0.08	0.08	10.87
1,307.00	0.17	119.57	1,306.99	1.72	-1.60	-2.35	0.03	0.03	5.94
1,407.00	0.22	99.10	1,406.99	1.61	-1.28	-2.06	0.08	0.05	-20.47
1,507.00	0.23	108.01	1,506.99	1.52	-0.90	-1.73	0.04	0.01	8.91
1,607.00	0.16	142.51	1,606.99	1.35	-0.63	-1.42	0.13	-0.07	34.50
1,707.00	0.13	161.41	1,706.99	1.13	-0.50	-1.18	0.06	-0.03	18.90
1,807.00	0.19	229.36	1,806.99	0.91	-0.59	-1.08	0.19	0.06	67.95
1,907.00	0.16	228.66	1,906.99	0.71	-0.83	-1.08	0.03	-0.03	-0.70
2,007.00	0.22	236.09	2,006.99	0.51	-1.09	-1.11	0.06	0.06	7.43
2,107.00	0.15	274.66	2,106.99	0.42	-1.38	-1.23	0.14	-0.07	38.57
2,207.00	0.08	262.31	2,206.99	0.42	-1.58	-1.36	0.07	-0.07	-12.35
2,307.00	0.04	309.23	2,306.99	0.43	-1.67	-1.44	0.06	-0.04	46.92
2,407.00	0.04	274.64	2,406.99	0.46	-1.74	-1.50	0.02	0.00	-34.59
2,507.00	0.32	253.96	2,506.98	0.38	-2.04	-1.64	0.28	0.28	-20.68
Last SDI Gyro Survey									
2,562.00	0.48	249.98	2,561.98	0.26	-2.40	-1.80	0.30	0.29	-7.24
2,562.00	0.48	249.98	2,561.99	0.26	-2.40	-1.80	0.00	0.00	0.00
First SDI MWD Survey									
2,612.00	0.43	296.76	2,611.98	0.27	-2.77	-2.05	0.73	-0.10	93.57
2,704.00	1.25	36.78	2,703.97	1.23	-2.48	-2.57	1.51	0.89	108.72
2,797.00	2.82	56.72	2,796.91	3.30	0.04	-2.43	1.83	1.69	21.44
2,890.00	4.49	63.96	2,889.72	6.15	5.23	-1.10	1.86	1.80	7.78
2,983.00	6.18	63.12	2,982.32	10.02	12.96	1.18	1.82	1.82	-0.90
3,075.00	6.24	79.75	3,073.78	13.14	22.30	5.07	1.95	0.07	18.08
3,170.00	5.37	93.82	3,168.30	13.77	31.82	10.95	1.75	-0.92	14.81
3,264.00	4.70	115.43	3,261.95	11.82	39.69	17.64	2.12	-0.71	22.99
3,359.00	4.47	111.19	3,356.64	8.81	46.65	24.53	0.43	-0.24	-4.46
3,450.00	5.09	107.06	3,447.32	6.34	53.82	31.15	0.78	0.68	-4.54
3,541.00	6.21	95.22	3,537.88	4.71	62.58	38.20	1.77	1.23	-13.01
3,633.00	7.65	85.08	3,629.21	4.78	73.64	45.52	2.05	1.57	-11.02
3,725.00	9.47	80.17	3,720.19	6.60	87.20	53.20	2.13	1.98	-5.34
3,814.00	10.93	81.54	3,807.78	9.09	102.76	61.72	1.66	1.64	1.54
3,908.00	12.76	82.30	3,899.77	11.80	121.86	72.44	1.95	1.95	0.81
3,999.00	12.63	81.34	3,988.55	14.64	141.66	83.51	0.27	-0.14	-1.05

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Scientific Drilling

Survey Report

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Company:	Stone Energy	**Local Co-ordinate Reference:**	Well 8H
Project:	Mary Prospect	**TVD Reference:**	GL 1341' & KB 18' @ 1359.00ft (Saxon 141)
Site:	ZMBG Pad	**MD Reference:**	GL 1341' & KB 18' @ 1359.00ft (Saxon 141)
Well:	8H	**North Reference:**	Grid
Wellbore:	OH	**Survey Calculation Method:**	Minimum Curvature
Design:	8H As Drilled	**Database:**	Northeast District

Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
4,090.00	12.36	79.53	4,077.39	17.91	161.07	94.02	0.52	-0.30	-1.99
4,184.00	13.16	81.06	4,169.07	21.40	181.53	105.05	0.92	0.85	1.63
4,274.00	13.21	83.62	4,256.70	24.13	201.87	116.57	0.65	0.06	2.84
4,364.00	12.68	88.48	4,344.41	25.54	221.97	128.92	1.34	-0.59	5.40
4,458.00	11.91	86.09	4,436.26	26.47	241.96	141.55	0.98	-0.82	-2.54
4,551.00	12.10	85.41	4,527.22	27.91	261.25	153.34	0.25	0.20	-0.73
4,643.00	12.86	86.83	4,617.05	29.25	281.08	165.56	0.89	0.83	1.54
4,736.00	12.39	84.93	4,707.80	30.70	301.35	177.99	0.67	-0.51	-2.04
4,829.00	11.56	82.06	4,798.78	32.87	320.52	189.15	1.10	-0.89	-3.09
4,924.00	12.29	81.45	4,891.73	35.69	339.95	200.00	0.78	0.77	-0.64
5,015.00	13.14	82.34	4,980.49	38.51	359.78	211.12	0.96	0.93	0.98
5,110.00	13.27	85.67	5,072.98	40.77	381.35	223.81	0.81	0.14	3.51
5,202.00	12.21	83.36	5,162.72	42.69	401.55	235.84	1.28	-1.15	-2.51
5,295.00	12.10	85.08	5,253.63	44.66	421.03	247.35	0.41	-0.12	1.85
5,386.00	11.33	84.93	5,342.74	46.27	439.43	258.42	0.85	-0.85	-0.16
5,477.00	11.97	89.52	5,431.86	47.14	457.77	270.00	1.24	0.70	5.04
5,569.00	12.80	89.28	5,521.72	47.35	477.50	283.00	0.90	0.90	-0.26
5,661.00	11.97	86.53	5,611.58	48.05	497.22	295.61	1.11	-0.90	-2.99
5,724.00	11.97	86.53	5,673.21	48.85	510.26	303.72	0.00	0.00	0.00
5,725.00	12.18	86.84	5,674.19	48.86	510.47	303.85	21.92	20.94	30.92
5,788.00	12.30	87.45	5,735.76	49.52	523.81	312.24	0.28	0.19	0.97
5,852.00	12.35	86.43	5,798.28	50.25	537.45	320.79	0.35	0.08	-1.59
5,884.00	12.28	83.64	5,829.55	50.84	544.25	324.88	1.87	-0.22	-8.72
5,916.00	12.63	84.12	5,860.79	51.58	551.11	328.91	1.14	1.09	1.50
5,947.00	14.10	85.51	5,890.95	52.22	558.25	333.19	4.85	4.74	4.48
5,979.00	15.91	85.99	5,921.86	52.83	566.51	338.24	5.67	5.66	1.50
6,011.00	17.48	87.69	5,952.51	53.33	575.69	343.98	5.14	4.91	5.31
6,043.00	19.08	87.99	5,982.90	53.71	585.72	350.39	5.01	5.00	0.94
6,074.00	20.89	87.59	6,012.03	54.12	596.30	357.14	5.86	5.84	-1.29
6,106.00	23.23	88.09	6,041.68	54.57	608.31	364.81	7.34	7.31	1.56
6,138.00	26.11	89.40	6,070.76	54.85	621.66	373.50	9.16	9.00	4.09
6,170.00	27.75	89.89	6,099.29	54.94	636.15	383.09	5.17	5.13	1.53
6,202.00	29.14	89.48	6,127.43	55.03	651.40	393.19	4.39	4.34	-1.28
6,234.00	30.77	88.06	6,155.15	55.38	667.37	403.58	5.55	5.09	-4.44
6,265.00	32.27	86.80	6,181.58	56.11	683.56	413.82	5.28	4.84	-4.06
6,297.00	35.05	86.45	6,208.21	57.15	701.26	424.84	8.71	8.69	-1.09
6,329.00	37.28	85.84	6,234.04	58.42	720.10	436.45	7.06	6.97	-1.91
6,360.00	40.01	85.99	6,258.25	59.80	739.41	448.30	8.81	8.81	0.48
6,392.00	41.96	86.95	6,282.41	61.09	760.36	461.30	6.40	6.09	3.00
6,424.00	43.22	86.78	6,305.96	62.28	781.98	474.83	3.95	3.94	-0.53
6,456.00	43.81	86.98	6,329.17	63.47	803.98	488.60	1.89	1.84	0.63
6,488.00	46.69	86.06	6,351.70	64.86	826.66	502.69	9.23	9.00	-2.88
6,520.00	49.06	86.82	6,373.16	66.33	850.35	517.38	7.61	7.41	2.38

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Design:	8H As Drilled	**Database:**	Northeast District

Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
6,552.00	49.87	87.22	6,393.96	67.59	874.63	532.63	2.70	2.53	1.25
6,583.00	50.54	86.58	6,413.80	68.88	898.42	547.52	2.68	2.16	-2.06
6,615.00	51.38	86.79	6,433.95	70.32	923.23	562.99	2.67	2.63	0.66
6,647.00	52.98	86.89	6,453.57	71.71	948.47	578.77	5.01	5.00	0.31
6,678.00	54.98	86.69	6,471.80	73.12	973.50	594.41	6.47	6.45	-0.65
6,709.00	56.44	87.43	6,489.27	74.43	999.08	610.48	5.11	4.71	2.39
6,739.00	57.20	87.57	6,505.69	75.52	1,024.16	626.39	2.56	2.53	0.47
6,769.00	57.57	87.41	6,521.86	76.63	1,049.41	642.39	1.31	1.23	-0.53
6,799.00	58.17	87.84	6,537.81	77.68	1,074.79	658.53	2.34	2.00	1.43
6,830.00	58.74	87.82	6,554.03	78.68	1,101.19	675.38	1.84	1.84	-0.06
6,860.00	59.12	87.47	6,569.51	79.74	1,126.87	691.71	1.61	1.27	-1.17
6,890.00	59.28	87.58	6,584.87	80.85	1,152.61	708.04	0.62	0.53	0.37
6,920.00	59.33	89.06	6,600.19	81.61	1,178.39	724.66	4.25	0.17	4.93
6,950.00	59.84	90.96	6,615.38	81.60	1,204.26	741.91	5.72	1.70	6.33
6,981.00	59.71	92.29	6,630.98	80.84	1,231.04	760.32	3.73	-0.42	4.29
7,011.00	60.50	94.85	6,645.94	79.22	1,256.99	778.83	7.85	2.63	8.53
7,041.00	60.91	97.68	6,660.62	76.37	1,283.00	798.29	8.34	1.37	9.43
7,072.00	61.29	100.88	6,675.60	71.99	1,309.77	819.41	9.12	1.23	10.32
7,102.00	61.82	103.93	6,689.89	66.32	1,335.53	840.80	9.11	1.77	10.17
7,132.00	61.47	107.29	6,704.15	59.22	1,360.95	863.04	9.92	-1.17	11.20
7,162.00	61.31	110.09	6,718.51	50.78	1,385.90	885.96	8.21	-0.53	9.33
7,192.00	61.21	112.63	6,732.94	41.20	1,410.39	909.43	7.43	-0.33	8.47
7,222.00	62.06	114.88	6,747.19	30.57	1,434.55	933.46	7.18	2.83	7.50
7,252.00	63.37	117.63	6,760.95	18.77	1,458.46	958.19	9.24	4.37	9.17
7,282.00	64.46	119.82	6,774.14	5.82	1,482.08	983.59	7.50	3.63	7.30
7,312.00	65.95	122.43	6,786.72	-8.26	1,505.39	1,009.62	9.33	4.97	8.70
7,343.00	68.44	125.25	6,798.74	-24.17	1,529.12	1,037.30	11.61	8.03	9.10
7,373.00	71.21	127.43	6,809.09	-40.86	1,551.79	1,064.85	11.48	9.23	7.27
7,403.00	73.48	129.55	6,818.19	-58.65	1,574.16	1,093.03	10.13	7.57	7.07
7,433.00	73.88	131.99	6,826.62	-77.45	1,595.97	1,121.58	7.92	1.33	8.13
7,463.00	73.89	133.67	6,834.94	-97.05	1,617.10	1,150.27	5.38	0.03	5.60
7,494.00	74.11	134.74	6,843.49	-117.82	1,638.46	1,180.00	3.39	0.71	3.45
7,525.00	75.84	136.08	6,851.53	-139.14	1,659.48	1,209.90	6.97	5.58	4.32
7,555.00	77.44	137.86	6,858.46	-160.48	1,679.40	1,239.08	7.86	5.33	5.93
7,585.00	79.43	140.73	6,864.47	-182.76	1,698.56	1,268.46	11.48	6.63	9.57
7,616.00	80.24	142.96	6,869.95	-206.75	1,717.41	1,298.91	7.55	2.61	7.19
7,646.00	81.39	145.33	6,874.73	-230.75	1,734.75	1,328.36	8.69	3.83	7.90
7,676.00	83.45	147.25	6,878.69	-255.49	1,751.25	1,357.80	9.35	6.87	6.40
7,707.00	86.01	149.09	6,881.54	-281.71	1,767.53	1,388.20	10.15	8.26	5.94
7,738.00	87.58	150.48	6,883.27	-308.46	1,783.10	1,418.52	6.76	5.06	4.48
7,740.21	87.62	150.46	6,883.37	-310.38	1,784.20	1,420.68	2.17	1.91	-1.03
ZMBG 8H_LP3									
7,770.00	88.19	150.15	6,884.45	-336.24	1,798.94	1,449.78	2.17	1.91	-1.03

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103-02789

STONE ENERGY

Scientific Drilling

Survey Report

Scientific Drilling

Company:	Stone Energy	**Local Co-ordinate Reference:**	Well 8H
Project:	Mary Prospect	**TVD Reference:**	GL 1341' & KB 18' @ 1359.00ft (Saxon 141)
Site:	ZMBG Pad	**MD Reference:**	GL 1341' & KB 18' @ 1359.00ft (Saxon 141)
Well:	8H	**North Reference:**	Grid
Wellbore:	OH	**Survey Calculation Method:**	Minimum Curvature
Design:	8H As Drilled	**Database:**	Northeast District

Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
7,834.00	88.76	150.10	6,886.16	-391.71	1,830.81	1,512.38	0.89	0.89	-0.08
7,898.00	89.06	149.76	6,887.37	-447.09	1,862.87	1,575.03	0.71	0.47	-0.53
7,961.00	89.33	149.19	6,888.26	-501.35	1,894.87	1,636.80	1.00	0.43	-0.90
8,025.00	88.42	147.98	6,889.52	-555.96	1,928.22	1,699.74	2.37	-1.42	-1.89
8,089.00	88.26	147.58	6,891.37	-610.08	1,962.33	1,762.82	0.67	-0.25	-0.63
8,152.00	87.99	147.51	6,893.43	-663.21	1,996.12	1,824.95	0.44	-0.43	-0.11
8,216.00	88.39	146.95	6,895.45	-717.00	2,030.74	1,888.13	1.07	0.63	-0.88
8,280.00	87.71	147.28	6,897.63	-770.71	2,065.47	1,951.32	1.18	-1.06	0.52
8,343.00	87.69	147.84	6,900.16	-823.84	2,099.24	2,013.43	0.89	-0.03	0.89
8,407.00	88.26	147.72	6,902.42	-877.95	2,133.34	2,076.49	0.91	0.89	-0.19
8,471.00	88.49	149.15	6,904.24	-932.46	2,166.82	2,139.45	2.26	0.36	2.23
8,535.00	88.99	149.03	6,905.64	-987.35	2,199.69	2,202.28	0.80	0.78	-0.19
8,598.00	89.70	148.76	6,906.36	-1,041.29	2,232.24	2,264.18	1.21	1.13	-0.43
8,662.00	91.27	150.40	6,905.82	-1,096.48	2,264.64	2,326.91	3.55	2.45	2.56
8,725.00	91.48	152.36	6,904.31	-1,151.76	2,294.81	2,388.23	3.13	0.33	3.11
8,788.00	91.68	152.99	6,902.57	-1,207.71	2,323.71	2,449.21	1.05	0.32	1.00
8,852.00	92.52	152.08	6,900.23	-1,264.46	2,353.21	2,511.17	1.93	1.31	-1.42
8,915.00	91.88	151.37	6,897.81	-1,319.90	2,383.03	2,572.38	1.52	-1.02	-1.13
8,979.00	91.17	151.64	6,896.10	-1,376.12	2,413.55	2,634.64	1.19	-1.11	0.42
9,043.00	91.51	151.70	6,894.61	-1,432.44	2,443.92	2,696.86	0.54	0.53	0.09
9,106.00	91.01	151.88	6,893.22	-1,487.95	2,473.69	2,758.08	0.84	-0.79	0.29
9,170.00	91.24	151.94	6,891.97	-1,544.40	2,503.82	2,820.24	0.37	0.36	0.09
9,233.00	90.17	151.03	6,891.19	-1,599.75	2,533.89	2,881.55	2.23	-1.70	-1.44
9,297.00	91.04	150.53	6,890.52	-1,655.60	2,565.13	2,944.01	1.57	1.36	-0.78
9,361.00	91.21	150.18	6,889.26	-1,711.21	2,596.78	3,006.56	0.61	0.27	-0.55
9,424.00	89.97	150.71	6,888.61	-1,766.01	2,627.85	3,068.12	2.14	-1.97	0.84
9,488.00	91.14	150.23	6,887.99	-1,821.70	2,659.40	3,130.65	1.98	1.83	-0.75
9,552.00	91.48	150.39	6,886.53	-1,877.28	2,691.09	3,193.21	0.59	0.53	0.25
9,615.00	89.56	149.42	6,885.96	-1,931.78	2,722.68	3,254.89	3.41	-3.05	-1.54
9,678.00	88.93	149.13	6,886.79	-1,985.93	2,754.86	3,316.71	1.10	-1.00	-0.46
9,742.00	90.10	149.38	6,887.33	-2,040.93	2,787.58	3,379.52	1.87	1.83	0.39
9,806.00	89.43	148.28	6,887.59	-2,095.69	2,820.70	3,442.42	2.01	-1.05	-1.72
9,869.00	86.81	147.73	6,889.66	-2,149.09	2,854.06	3,504.46	4.25	-4.16	-0.87
9,932.00	87.48	149.62	6,892.79	-2,202.84	2,886.77	3,566.33	3.18	1.06	3.00
9,996.00	88.25	150.52	6,895.18	-2,258.26	2,918.68	3,628.92	1.85	1.20	1.41
10,060.00	87.62	149.05	6,897.49	-2,313.53	2,950.86	3,691.57	2.50	-0.98	-2.30
10,123.00	88.69	149.57	6,899.51	-2,367.68	2,983.00	3,753.35	1.89	1.70	0.83
10,186.00	88.69	150.07	6,900.95	-2,422.12	3,014.67	3,815.05	0.79	0.00	0.79
10,250.00	88.59	151.27	6,902.47	-2,477.90	3,046.01	3,877.52	1.88	-0.16	1.88
10,313.00	89.30	151.84	6,903.63	-2,533.29	3,076.01	3,938.80	1.45	1.13	0.90
10,377.00	89.83	151.01	6,904.12	-2,589.49	3,106.62	4,001.10	1.54	0.83	-1.30
10,439.00	90.44	151.24	6,903.97	-2,643.78	3,136.56	4,061.53	1.05	0.98	0.37
10,503.00	88.69	151.81	6,904.46	-2,700.03	3,167.07	4,123.80	2.88	-2.73	0.89
10,566.00	88.52	152.38	6,905.99	-2,755.69	3,196.54	4,184.94	0.94	-0.27	0.90

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STONE ENERGY

Scientific Drilling

Survey Report

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Company:	Stone Energy	**Local Co-ordinate Reference:**	Well 8H
Project:	Mary Prospect	**TVD Reference:**	GL 1341' & KB 18' @ 1359.00ft (Saxon 141)
Site:	ZMBG Pad	**MD Reference:**	GL 1341' & KB 18' @ 1359.00ft (Saxon 141)
Well:	8H	**North Reference:**	Grid
Wellbore:	OH	**Survey Calculation Method:**	Minimum Curvature
Design:	8H As Drilled	**Database:**	Northeast District

Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
10,630.00	89.50	152.10	6,907.10	-2,812.32	3,226.35	4,247.01	1.59	1.53	-0.44
10,694.00	90.40	151.99	6,907.15	-2,868.85	3,256.35	4,309.15	1.42	1.41	-0.17
10,757.00	91.41	151.58	6,906.16	-2,924.35	3,286.13	4,370.38	1.73	1.60	-0.65
10,821.00	91.74	151.63	6,904.40	-2,980.63	3,316.56	4,432.61	0.52	0.52	0.08
10,880.00	91.51	151.73	6,902.73	-3,032.55	3,344.53	4,489.96	0.43	-0.39	0.17
10,944.00	92.05	151.90	6,900.74	-3,088.93	3,374.75	4,552.13	0.88	0.84	0.27
11,008.00	91.75	151.62	6,898.62	-3,145.29	3,405.01	4,614.31	0.64	-0.47	-0.44
11,071.00	92.82	151.76	6,896.10	-3,200.71	3,434.87	4,675.53	1.71	1.70	0.22
11,135.00	93.37	151.75	6,892.65	-3,257.00	3,465.11	4,737.65	0.86	0.86	-0.02
11,198.00	92.65	152.02	6,889.34	-3,312.49	3,494.76	4,798.78	1.22	-1.14	0.43
11,262.00	92.99	151.00	6,886.19	-3,368.67	3,525.25	4,860.98	1.68	0.53	-1.59
11,325.00	92.92	150.51	6,882.94	-3,423.57	3,555.98	4,922.39	0.78	-0.11	-0.78
11,388.00	91.07	151.54	6,880.75	-3,478.65	3,586.48	4,983.78	3.36	-2.94	1.63
11,452.00	90.97	152.82	6,879.61	-3,535.24	3,616.35	5,045.87	2.01	-0.16	2.00
11,516.00	89.63	151.79	6,879.28	-3,591.90	3,646.09	5,107.94	2.64	-2.09	-1.61
11,579.00	90.07	152.21	6,879.44	-3,647.53	3,675.67	5,169.12	0.97	0.70	0.67
11,643.00	90.57	153.29	6,879.08	-3,704.42	3,704.97	5,231.06	1.86	0.78	1.69
11,706.00	89.87	154.19	6,878.84	-3,760.92	3,732.84	5,291.76	1.81	-1.11	1.43
11,769.00	89.73	152.22	6,879.06	-3,817.15	3,761.24	5,352.60	3.13	-0.22	-3.13
11,832.00	88.32	150.78	6,880.13	-3,872.51	3,791.30	5,413.90	3.20	-2.24	-2.29
11,896.00	89.03	150.54	6,881.61	-3,928.28	3,822.65	5,476.37	1.17	1.11	-0.38
11,959.00	88.62	149.43	6,882.91	-3,982.82	3,854.15	5,538.03	1.88	-0.65	-1.76
12,023.00	87.25	150.18	6,885.21	-4,038.10	3,886.32	5,600.68	2.44	-2.14	1.17
12,087.00	87.75	149.69	6,888.00	-4,093.44	3,918.35	5,663.28	1.09	0.78	-0.77
12,151.00	88.83	148.86	6,889.91	-4,148.43	3,951.04	5,726.06	2.13	1.69	-1.30
12,214.00	89.80	148.20	6,890.67	-4,202.16	3,983.92	5,788.03	1.86	1.54	-1.05
12,278.00	90.60	147.56	6,890.44	-4,256.36	4,017.95	5,851.12	1.60	1.25	-1.00
12,342.00	91.18	146.70	6,889.45	-4,310.11	4,052.68	5,914.33	1.62	0.91	-1.34
12,405.00	90.34	146.22	6,888.61	-4,362.61	4,087.49	5,976.67	1.54	-1.33	-0.76
12,468.00	90.47	145.01	6,888.17	-4,414.60	4,123.06	6,039.14	1.93	0.21	-1.92
12,532.00	88.52	144.81	6,888.73	-4,466.96	4,159.85	6,102.70	3.06	-3.05	-0.31
12,595.00	89.30	145.50	6,889.93	-4,518.66	4,195.84	6,165.22	1.65	1.24	1.10
12,659.00	89.36	147.31	6,890.68	-4,571.96	4,231.25	6,228.56	2.83	0.09	2.83
12,722.00	90.34	146.69	6,890.84	-4,624.80	4,265.56	6,290.82	1.84	1.56	-0.98
12,786.00	91.28	145.96	6,889.94	-4,678.05	4,301.04	6,354.17	1.86	1.47	-1.14
12,850.00	91.95	144.65	6,888.14	-4,730.65	4,337.46	6,417.65	2.30	1.05	-2.05
12,887.00	92.78	145.00	6,886.61	-4,760.87	4,358.75	6,454.37	2.43	2.24	0.95
Last SDI MWD Survey									
12,949.00	92.78	145.00	6,883.60	-4,811.60	4,394.27	6,515.86	0.00	0.00	0.00
Projection to Bit - ZMBG 8H_BHL3									

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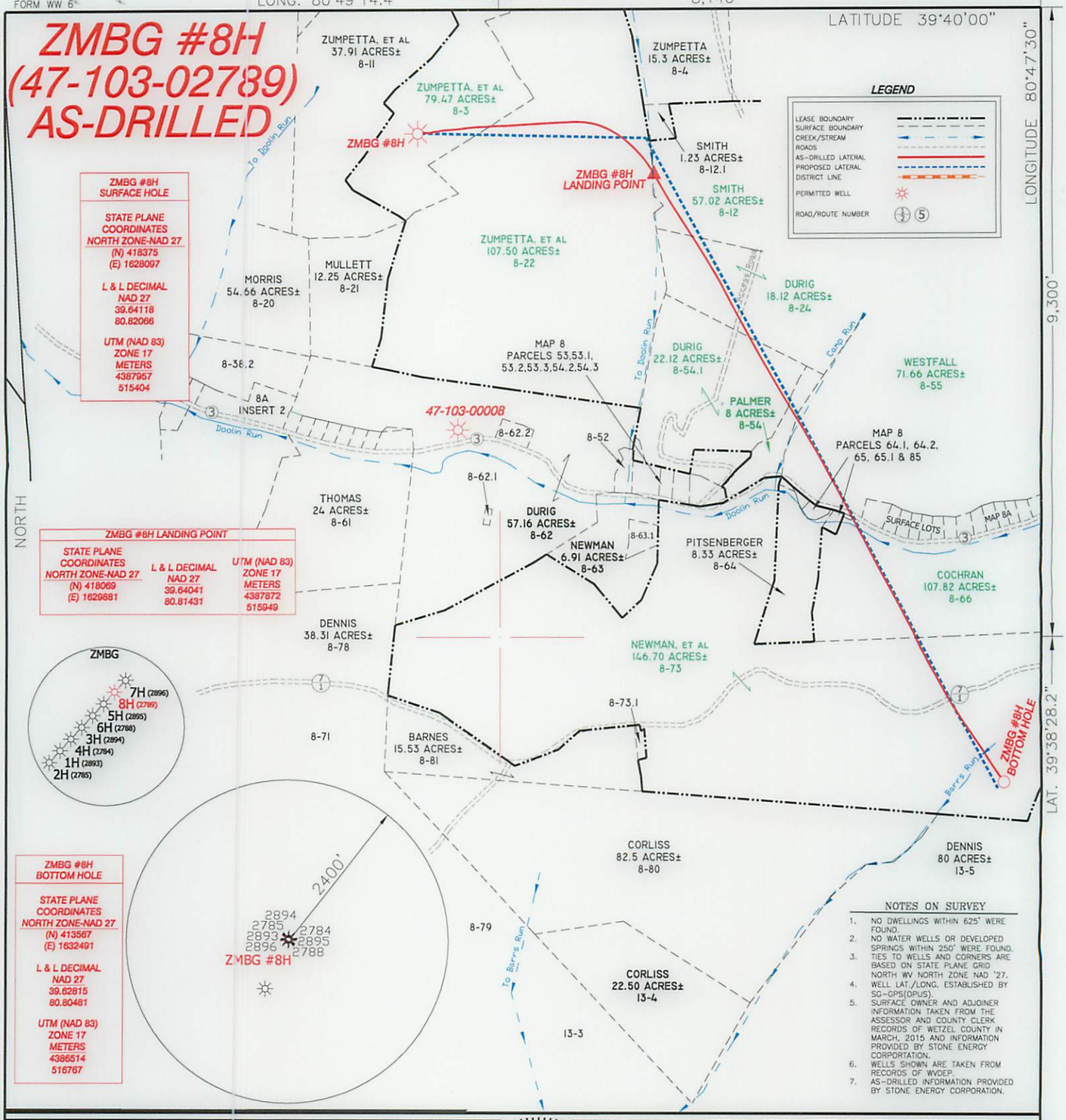
FORM WW-6

ZMBG #8H (47-103-02789) AS-DRILLED



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 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 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 X LIQUID INJECTION ____ WASTE DISPOSAL ____ IF "GAS" PRODUCTION X STORAGE ____ DEEP ____ SHALLOW X

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

COUNTY NAME

PERMIT

WR-35
Rev. 8/23/13

PM

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

API 47 - 103 - 02895 County Wetzel District Magnolia
Quad New Martinsville Pad Name ZMBG Field/Pool Name Mary
Farm name Zumpetta, Lawrence et al Well Number #5H
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 4,387,953 Easting 515,400
Landing Point of Curve Northing 4,388,256 Easting 515,235
Bottom Hole Northing 4,389,597 Easting 514,464

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 7/1/2013 Date drilling commenced 9/30/2013 Date drilling ceased 6/5/2014
Date completion activities began 8/6/2014 Date completion activities ceased 2/10/2015
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

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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 1,012 Cavern(s) encountered (Y/N) depths N
Is coal being mined in area (Y/N) N

Reviewed by:
K

API 47- 103 - 02895 Farm name Zumpetta, Lawrence et al Well number #5H

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"	95'	New	LS		N - GTS
Surface	17.5"	13.375"	1,288'	New	J55	122' & 243'	Y - CTS
Coal	17.5"	13.375"	1,288'	New	J55	122' & 243'	Y - CTS
Intermediate 1	12.25"	9.625"	2,575'	New	J55		Y - CTS
Intermediate 2							
Intermediate 3							
Production	8.75"	5.5"	12,303'	New	P110		N - TOC @ 2,488'
Tubing	N/A	2.375"	7,162'	New	N80		N/A
Packer type and depth set							

Comment Details Circulated 35 bbls cement to surface on 13.375" casing string. Circulated 10 bbls cement to surface on the 9.625" casing string. TOC on 5.5" after running CBL @ 2,488'.

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"	970	15.6	1.21	1,174	Surface	8.0
Coal	Class "A"	970	15.6	1.21	1,174	Surface	8.0
Intermediate 1	Lead-10% Salt Tail-Class "A"	Lead-650 Tail-228	Lead-15.6 Tail 15.6	Lead-1.24Tail-1.21	Lead-806 Tail-276	Surface	12.0
Intermediate 2							
Intermediate 3							
Production	Lead-TunedSpacer Tail-VariCem	Lead-178 Tail-2,280	Lead- 14.5 Tail-15.2	Lead-2.37 Tail-1.20	Lead-422 Tail-2,736	2,488	7.0
Tubing							

Drillers TD (ft) 12,312 MD / 6,662 TVD Loggers TD (ft) N/A

Deepest formation penetrated Marcellus Shale Plug back to (ft)

Plug back procedure

Kick off depth (ft) 6,110 MD / 6,088' 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 and 21. Intermediate casing had bow spring centralizers placed on joints 3, 6, 9, 12, 15, 18, 23, 26, 29, 32, 35 and 38. Production casing had rigid spiral centralizers placed on every fourth joint beginning with joint 3 to joint 147. Ran a total of 39 rigid spiral centralizers. Rigid spiral centralizers were run on every third joint from joint 150 to joint 228 for a total of 27. Ran Bow spring centralizers on every third joint from joint 231 to joint 279. A total of 17 bow spring centralizers were run.

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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 - 02895 Farm name Zumpetta, Lawrence et al Well number #5H

PERFORATION RECORD

Stage No.	Perforation date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formation(s)
1	8/12/14	12,096	12,234	72	Marcellus Shale
2	10/10/14	11,891	12,029	72	Marcellus Shale
3	10/11/14	11,686	11,824	72	Marcellus Shale
4	10/12/14	11,481	11,620	72	Marcellus Shale
5	10/13/14	11,276	11,414	72	Marcellus Shale
6	10/14/14	11,066	11,219	72	Marcellus Shale
7	10/15/14	10,856	11,013	72	Marcellus Shale
8	10/16/14	10,646	10,783	72	Marcellus Shale
9	10/18/14	10,436	10,589	72	Marcellus Shale
10	10/19/14	10,226	10,379	72	Marcellus Shale
11	10/20/14	10,016	10,169	72	Marcellus Shale
12	10/21/14	9,806	9,961	72	Marcellus Shale
13	10/22/14	9,596	9,746	72	Marcellus Shale
14	10/23/14	9,384	9,539	72	Marcellus Shale
15	10/24/14	9,176	9,325	72	Marcellus Shale
16	10/25/14	8,966	9,119	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	10/10/14	84.8	7,317	6,263	4,589	316,201	5,235	
2	10/11/14	81.8	7,441	5,106	6,353	359,740	5,697	
3	10/12/14	82.5	7,287	5,800	5,036	360,360	5,643	
4	10/13/14	85.0	7,135	6,033	5,124	359,760	5,618	
5	10/14/14	85.4	7,233	6,033	4,797	361,940	5,535	
6	10/15/14	85.4	7,107	6,028	4,797	364,560	5,640	
7	10/16/14	85.6	7,299	6,007	4,767	360,520	5,502	
8	10/18/14	80.5	6,855	5,399	4,975	352,555	5,467	
9	10/19/14	80.5	6,888	6,552	4,679	358,600	5,436	
10	10/20/14	79.4	7,113	5,843	4,917	365,120	5,520	
11	10/21/14	80.2	7,002	5,459	4,945	366,740	5,471	
12	10/22/14	78.8	6,873	5,966	4,857	364,120	5,473	
13	10/23/14	80.4	6,924	5,491	5,184	361,380	5,630	
14	10/24/14	80.4	6,984	5,632	5,541	360,940	5,494	
15	10/25/14	80.4	6,870	5,991	5,541	360,160	6,432	
16	10/26/14	80.8	6,678	5,476	5,274	359,360	5,586	

Please insert additional pages as applicable.

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API 47- 103 - 02895 Farm name Zumpetta, Lawerence et al Well number #5H

PERFORATION RECORD

Stage No.	Perforation date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formation(s)
17	10/26/14	8,752	8,911	72	Marcellus Shale
18	10/27/14	8,554	8,699	72	Marcellus Shale
19	10/28/14	8,336	8,489	72	Marcellus Shale
20	10/29/14	8,115	8,279	72	Marcellus Shale
21	10/30/14	7,916	8,055	72	Marcellus Shale
22	10/31/14	7,706	7,859	72	Marcellus Shale
23	11/1/14	7,500	7,649	72	Marcellus Shale
24	11/2/14	7,268	7,439	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	10/27/14	80.7	6,695	5,351	5,422	359,000	5,527	
18	10/28/14	80.7	6,719	5,556	5,096	359,800	5,378	
19	10/29/14	80.2	6,719	5,797	5,332	362,640	5,524	
20	10/30/14	79.3	6,667	5,897	4,797	361,340	5,354	
21	10/31/14	78.4	6,935	6,004	4,597	368,800	5,564	
22	11/1/14	78.2	6,610	5,777	5,005	358,140	5,631	
23	11/2/14	80.1	6,525	6,003	4,857	369,740	5,526	
24	11/3/14	62.9	6,819	5,214	5,214	172,520	6,141	

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WR-35
Rev. 8/23/13

API 47- 103 - 02895 Farm name Zumpetta, Lawrence et al Well number #5H

PRODUCING FORMATION(S)	DEPTHS	
Marcellus Shale	6,791' to 6,664' TVD	7,268' to 12,234' MD

Please insert additional pages as applicable.

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

SHUT-IN PRESSURE Surface 2,452 psi Bottom Hole 4,216 calculated psi DURATION OF TEST 107.25 hrs

OPEN FLOW	Gas	Oil	NGL	Water	GAS MEASURED BY
	2,924 mcfpd	bpd	128 bpd	456 bpd	□ 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					

Please insert additional pages as applicable.

Drilling Contractor Nomac (top-hole) & Saxon Drilling (horizontal)
Address 2034 Martins Branch Rd /9303 New Trails Drive City Mount Morris / The Woodlands State PA / TX Zip 25312 / 77381

Logging Company Scientific Drilling and Schlumberger
Address 3475 Washington Ave / 1178 US HWY 33 East City Finleyville / Weston State PA / WV Zip 15332 / 26452

Cementing Company Halliburton
Address 1628 Jackson Mill Road City Jane Lew State WV Zip 26378

Stimulating Company Schlumberger
Address 1178 US HWY 33 East City Weston State WV Zip 26452

Please insert additional pages as applicable.

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Completed by W. Lee Hornsby Telephone 304-225-1600
Signature W. Lee Hornsby Title Drilling Engineer Date 8/25/2015

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

ZMBG #5H
API 47-103-02895
Stone Energy Corporation

	Top (ft TVD)	Horizontal Top (ft MD)		Bottom (ft TVD)	Bottom (ft MD)	
Sandstone & Shale	Surface		*	1,012'		FW @ 100'
Coal	1,012'		*	1,015'		
Sandstone & Shale	1,152'		*	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'		*	5,999'	6,018'	
Rhinestreet	5,999'	6,018'	~	6,452'	6,520'	
Cashaqua	6,452'	6,520'	~	6,604'	6,713'	
Middlesex	6,604'	6,713'	~	6,626'	6,743'	
West River	6,626'	6,743'	~	6,677'	6,843'	
Geneseo	6,677'	6,843'	~	6,694'	6,873'	
Tully Limestone	6,694'	6,873'	~	6,728'	6,957'	
Hamilton Shale	6,728'	6,957'	~	6,761'	7,069'	
Marcellus	6,761'	7,069'	~	6,662'	12,312'	
TD				6,662'	12,312'	

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

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103-02895

Hydraulic Fracturing Fluid Product Component Information Disclosure

Fracture Date:	10/30/2014
State:	West Virginia
County/Parish:	Wetzel County
API Number:	47-103-02895
Operator Name:	Stone Energy
Well Name and Number:	ZMBG #5H
Longitude:	515,400
Latitude:	4,387,953
Long/Lat Projection:	
Production Type:	Naturl Gas
True Vertical Depth (TVD):	6662
Total Water Volume (gal)*:	5629071

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, 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		84.48034%	
			Crystalline silica	14808-60-7	98.38599%	15.26917%	
			Hydrochloric acid	7647-01-0	0.91896%	0.14262%	
			Ammonium sulfate	7783-20-2	0.12715%	0.01973%	
			Polyethylene glycol monohexyl ether	31726-34-8	0.06769%	0.01051%	
			Glutaraldehyde	111-30-8	0.05164%	0.00801%	
			Diammonium peroxidisulphate	7727-54-0	0.03123%	0.00485%	
			Urea	57-13-6	0.02119%	0.00329%	
			Methanol	67-56-1	0.00529%	0.00082%	
			Dicoco dimethyl quaternary ammonium chloride	61789-77-3	0.00521%	0.00081%	
			Sodium erythorbate	6381-77-7	0.00290%	0.00045%	
			Thiourea formaldehyde polymer	Proprietary	0.00264%	0.00041%	
			Ethylene Glycol	107-21-1	0.00220%	0.00034%	
			Trisodium ortho phosphate	7601-54-9	0.00220%	0.00034%	
			Aliphatic acids	Proprietary	0.00203%	0.00031%	
			Calcium chloride	10043-52-4	0.00125%	0.00019%	
			Aliphatic alcohols, ethoxylated #2	Proprietary	0.00088%	0.00014%	
			Propargyl alcohol	107-19-7	0.00088%	0.00014%	
			Olefin hydrocarbon	Proprietary	0.00044%	0.00007%	
			Hexadec-1-ene	629-73-2	0.00018%	0.00003%	
			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-34845 (Generated on 2/16/2015 4:44 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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Project: Mary Prospect
Site: ZMBG Pad
Well: 5H
Wellbore: OH
Design: 5H As Drilled

Scientific Drilling

103-02895

WELL DETAILS: 5H

Ground Level: 1341.00

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.00	0.00	418364.00	1628083.00	39° 38' 28.123 N	80° 49' 14.543 W

REFERENCE INFORMATION

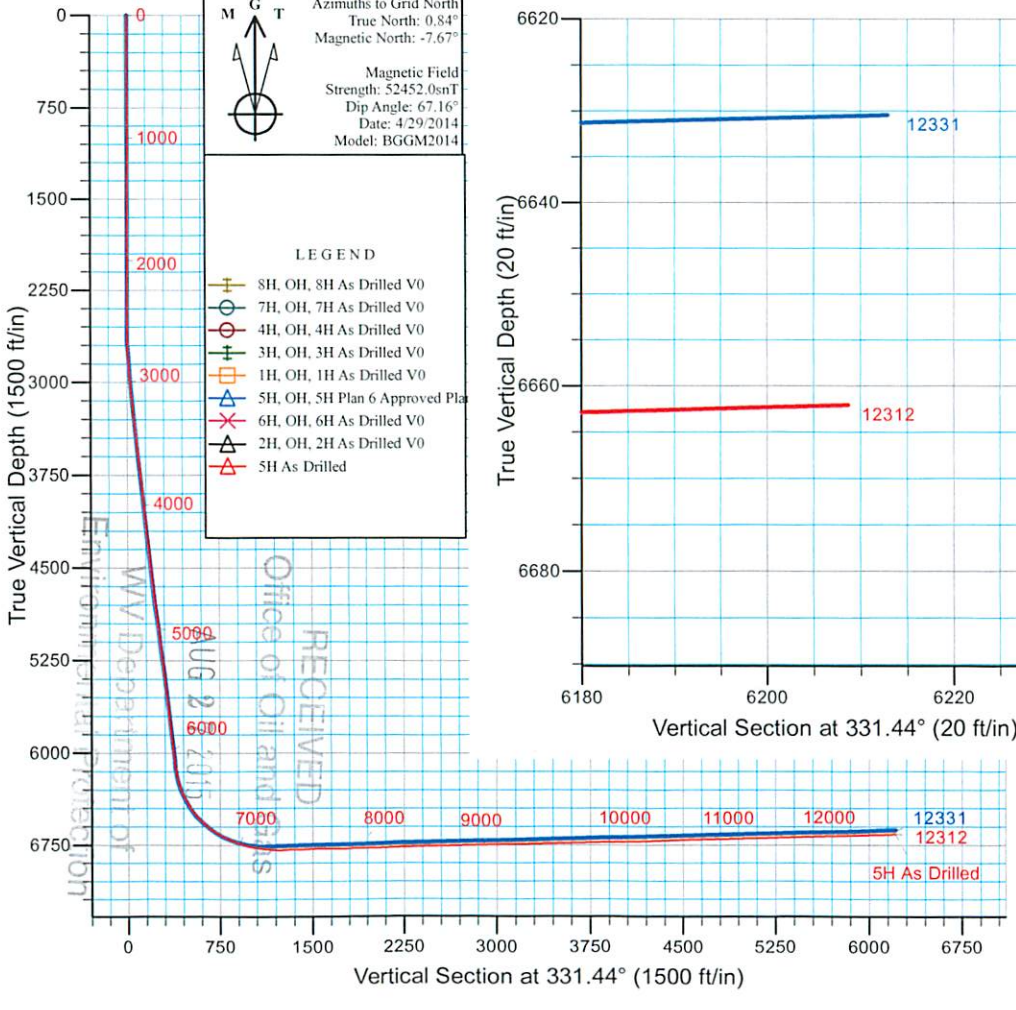
Co-ordinate (N/E) Reference: Well 5H, Grid North
Vertical (TVD) Reference: GL 1341' & KB 18' @ 1341.00ft (Saxon 141)
Section (VS) Reference: Slot - (0.00N, 0.00E)
Measured Depth Reference: GL 1341' & KB 18' @ 1341.00ft (Saxon 141)
Calculation Method: Minimum Curvature

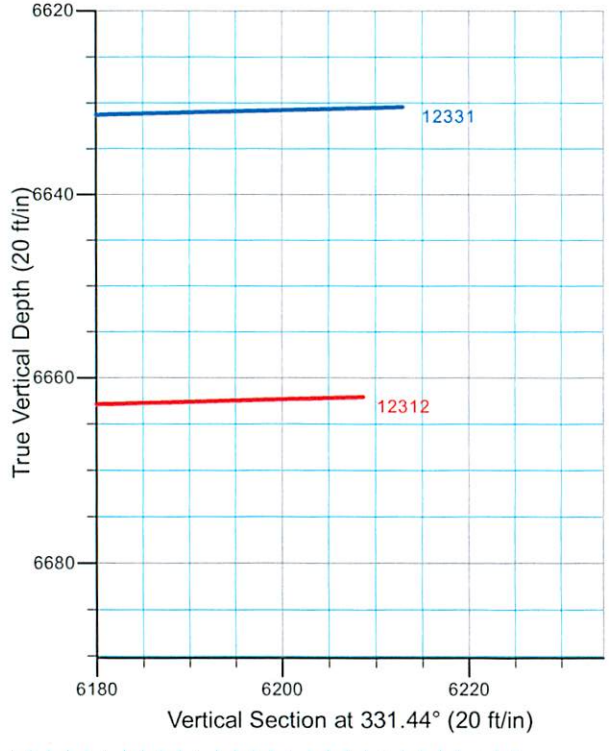
PROJECT DETAILS: Mary Prospect

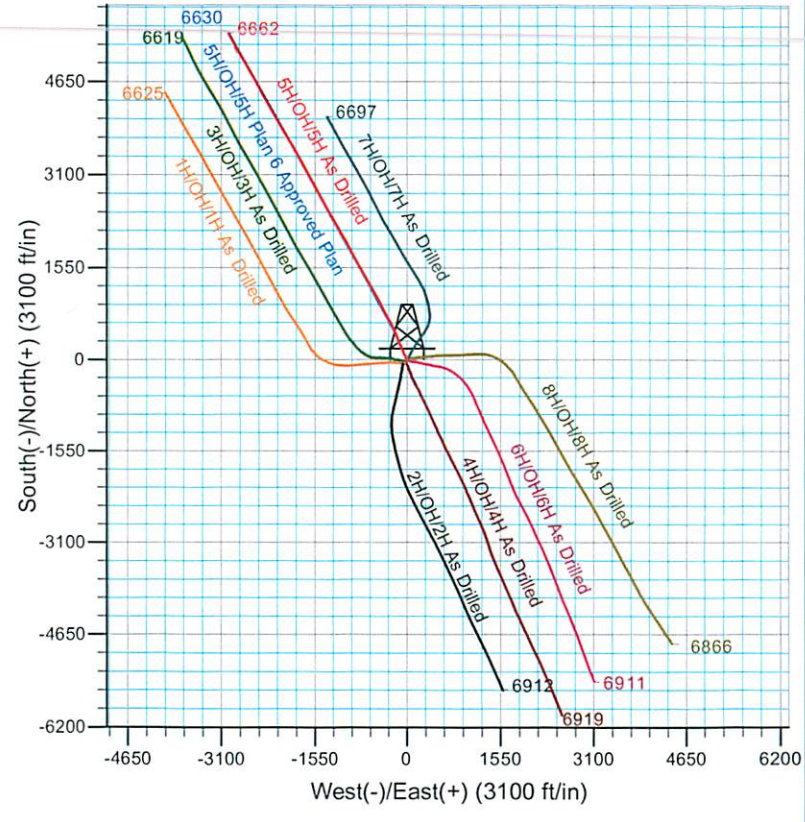
Geodetic System: US State Plane 1927 (Exact solution)
Datum: NAD 1927 (NADCON CONUS)
Ellipsoid: Clarke 1866
Zone: West Virginia North 4701
System Datum: Mean Sea Level

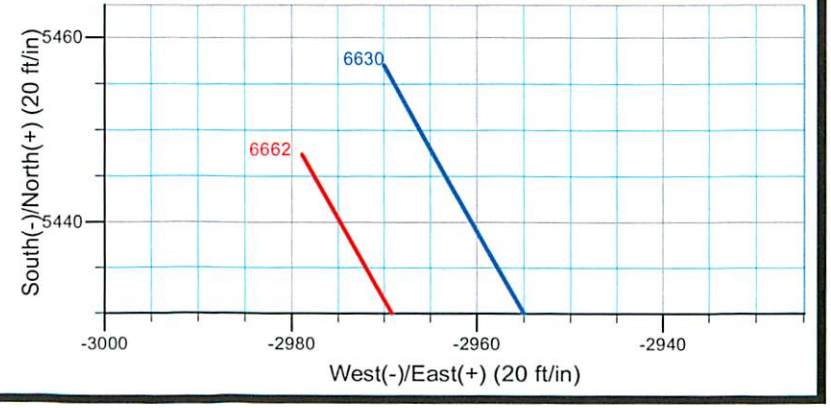
SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target
1	6013.00	6.81	335.41	5991.99	336.92	-154.93	0.00	0.00	370.00	
2	6143.00	6.81	335.41	6121.07	350.94	-161.35	0.00	0.00	385.37	
3	6156.69	6.81	344.71	6134.66	352.46	-161.90	8.05	94.54	386.97	
4	7211.31	91.50	331.00	6764.00	996.10	-497.70	8.05	-13.76	1112.84	ZMBG 5H_LP2
5	12313.25	91.50	331.00	6630.45	5457.01	-2970.01	0.00	0.00	6212.88	ZMBG 5H_BHL2









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Stone Energy

Mary Prospect
ZMBG Pad
5H

OH

Design: 5H As Drilled

Standard Survey Report

22 July, 2014

Scientific Drilling

www.scientificdrilling.com

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103-02895

STONE ENERGY

Scientific Drilling
Survey Report

Scientific Drilling

Company:	Stone Energy	**Local Co-ordinate Reference:**	Well 5H
Project:	Mary Prospect	**TVD Reference:**	GL 1341' & KB 18' @ 1341.00ft (Saxon 141)
Site:	ZMBG Pad	**MD Reference:**	GL 1341' & KB 18' @ 1341.00ft (Saxon 141)
Well:	5H	**North Reference:**	Grid
Wellbore:	OH	**Survey Calculation Method:**	Minimum Curvature
Design:	5H As Drilled	**Database:**	Northeast District

Project Mary Prospect, West Virginia

Map System:	US State Plane 1927 (Exact solution)	**System Datum:**	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	West Virginia North 4701		

Site ZMBG Pad

Site Position:		**Northing:**	418,393.00 usft	**Latitude:**	39° 38' 28.413 N
From:	Map	**Easting:**	1,628,110.00 usft	**Longitude:**	80° 49' 14.204 W
Position Uncertainty:	0.00 ft	**Slot Radius:**	13-3/16 "	**Grid Convergence:**	-0.84 °

Well 5H

Well Position	**+N/-S**	0.00 ft	**Northing:**	418,364.00 usft	**Latitude:**	39° 38' 28.123 N
	+E/-W	0.00 ft	**Easting:**	1,628,083.00 usft	**Longitude:**	80° 49' 14.543 W
Position Uncertainty		0.00 ft	**Wellhead Elevation:**	ft	**Ground Level:**	1,341.00 ft

Wellbore OH

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	5/16/2013	-8.48	67.19	52,608
	BGGM2013	10/2/2013	-8.54	67.19	52,520
	BGGM2013	3/7/2014	-8.55	67.14	52,464
	BGGM2013	4/24/2014	-8.56	67.13	52,447
	BGGM2014	4/29/2014	-8.51	67.16	52,452

Design 5H As Drilled

Audit Notes:

Version:	1.0	**Phase:**	ACTUAL	**Tie On Depth:**	0.00

Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.00	0.00	0.00	331.44

Survey Program **Date** 7/22/2014

From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
4.00	4,721.00	Survey 1 - SDI Gyro (OH)	SDI Standard Keeper 103	SDI Standard Wireline Keeper ver 1.0.3
2,593.00	6,013.00	Survey 2 - SDI MWD (OH)	MWD SDI	MWD - Standard ver 1.0.1
6,038.00	12,312.00	Survey 3 - SDI MWD (OH)	MWD SDI	MWD - Standard ver 1.0.1

Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4.00	0.00	0.00	4.00	0.00	0.00	0.00	0.00	0.00	0.00
Ground Level									
89.00	0.23	24.69	89.00	0.16	0.07	0.10	0.27	0.27	0.00
First SDI Gyro Survey									

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STONE ENERGY

Scientific Drilling

Survey Report

Scientific Drilling

Company:	Stone Energy	**Local Co-ordinate Reference:**	Well 5H
Project:	Mary Prospect	**TVD Reference:**	GL 1341' & KB 18' @ 1341.00ft (Saxon 141)
Site:	ZMBG Pad	**MD Reference:**	GL 1341' & KB 18' @ 1341.00ft (Saxon 141)
Well:	5H	**North Reference:**	Grid
Wellbore:	OH	**Survey Calculation Method:**	Minimum Curvature
Design:	5H As Drilled	**Database:**	Northeast District

Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
189.00	0.17	19.18	189.00	0.48	0.20	0.32	0.06	-0.06	-5.51
289.00	0.06	305.63	289.00	0.65	0.21	0.47	0.16	-0.11	-73.55
389.00	0.02	309.67	389.00	0.69	0.15	0.53	0.04	-0.04	4.04
489.00	0.13	8.58	489.00	0.81	0.16	0.64	0.12	0.11	58.91
589.00	0.02	310.77	589.00	0.94	0.16	0.75	0.12	-0.11	-57.81
689.00	0.11	303.72	689.00	1.00	0.07	0.85	0.09	0.09	-7.05
789.00	0.14	309.01	789.00	1.13	-0.11	1.04	0.03	0.03	5.29
889.00	0.21	10.91	889.00	1.39	-0.17	1.30	0.19	0.07	61.90
989.00	0.25	26.37	988.99	1.76	-0.04	1.57	0.07	0.04	15.46
1,089.00	0.10	92.84	1,088.99	1.95	0.15	1.65	0.23	-0.15	66.47
1,189.00	0.09	94.19	1,188.99	1.94	0.31	1.56	0.01	-0.01	1.35
1,289.00	0.18	96.63	1,288.99	1.92	0.55	1.43	0.09	0.09	2.44
1,389.00	0.06	103.50	1,388.99	1.89	0.76	1.30	0.12	-0.12	6.87
1,489.00	0.08	228.50	1,488.99	1.83	0.75	1.25	0.12	0.02	125.00
1,589.00	0.11	224.20	1,588.99	1.72	0.63	1.20	0.03	0.03	-4.30
1,689.00	0.12	233.69	1,688.99	1.59	0.48	1.16	0.02	0.01	9.49
1,789.00	0.13	208.04	1,788.99	1.42	0.35	1.09	0.06	0.01	-25.65
1,889.00	0.02	236.89	1,888.99	1.31	0.28	1.02	0.11	-0.11	28.85
1,989.00	0.28	203.37	1,988.99	1.08	0.17	0.87	0.26	0.26	-33.52
2,089.00	0.17	117.33	2,088.99	0.79	0.20	0.60	0.32	-0.11	-86.04
2,189.00	0.07	103.17	2,188.99	0.71	0.39	0.43	0.10	-0.10	-14.16
2,289.00	0.11	102.17	2,288.99	0.67	0.55	0.33	0.04	0.04	-1.00
2,389.00	0.14	103.71	2,388.99	0.62	0.76	0.18	0.03	0.03	1.54
2,489.00	0.24	335.64	2,488.99	0.78	0.79	0.31	0.34	0.10	-128.07
2,548.00	0.29	334.37	2,547.99	1.03	0.68	0.58	0.09	0.08	-2.15
Last Gyro Survey									
2,593.00	0.36	327.28	2,592.99	1.25	0.55	0.84	0.18	0.16	-15.76
2,593.00	0.36	327.28	2,592.99	1.25	0.55	0.84	0.02	0.00	0.00
First SDI MWD Survey									
2,686.00	1.93	332.05	2,685.97	2.88	-0.34	2.70	1.69	1.69	5.13
2,777.00	3.85	328.52	2,776.85	6.84	-2.66	7.28	2.12	2.11	-3.88
2,871.00	4.65	329.92	2,870.59	12.83	-6.21	14.24	0.86	0.85	1.49
2,965.00	4.98	324.43	2,964.26	19.45	-10.50	22.10	0.60	0.35	-5.84
3,058.00	5.33	319.27	3,056.88	26.00	-15.66	30.33	0.62	0.38	-5.55
3,152.00	5.65	331.63	3,150.45	33.38	-20.71	39.22	1.30	0.34	13.15
3,244.00	5.76	330.36	3,242.00	41.38	-25.15	48.37	0.18	0.12	-1.38
3,337.00	6.34	339.47	3,334.48	50.25	-29.26	58.12	1.20	0.62	9.80
3,431.00	6.51	339.72	3,427.89	60.10	-32.92	68.53	0.18	0.18	0.27
3,523.00	6.69	337.04	3,519.28	69.93	-36.82	79.03	0.39	0.20	-2.91
3,613.00	7.03	333.79	3,608.64	79.70	-41.30	89.75	0.57	0.38	-3.61
3,705.00	6.35	336.32	3,700.01	89.41	-45.83	100.44	0.81	-0.74	2.75
3,798.00	6.14	331.62	3,792.46	98.50	-50.26	110.54	0.59	-0.23	-5.05
3,889.00	6.14	331.94	3,882.94	107.07	-54.86	120.27	0.04	0.00	0.35
3,980.00	6.40	341.13	3,973.40	116.17	-58.79	130.14	1.14	0.29	10.10

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STONE ENERGY

Scientific Drilling

Survey Report

Scientific Drilling

Company:	Stone Energy	**Local Co-ordinate Reference:**	Well 5H
Project:	Mary Prospect	**TVD Reference:**	GL 1341' & KB 18' @ 1341.00ft (Saxon 141)
Site:	ZMBG Pad	**MD Reference:**	GL 1341' & KB 18' @ 1341.00ft (Saxon 141)
Well:	5H	**North Reference:**	Grid
Wellbore:	OH	**Survey Calculation Method:**	Minimum Curvature
Design:	5H As Drilled	**Database:**	Northeast District

Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
4,075.00	6.40	340.36	4,067.80	126.16	-62.28	140.59	0.09	0.00	-0.81
4,165.00	6.56	338.80	4,157.23	135.68	-65.83	150.64	0.26	0.18	-1.73
4,257.00	6.52	336.31	4,248.63	145.36	-69.83	161.06	0.31	-0.04	-2.71
4,348.00	6.63	334.22	4,339.03	154.82	-74.19	171.45	0.29	0.12	-2.30
4,442.00	6.49	335.03	4,432.42	164.53	-78.79	182.17	0.18	-0.15	0.86
4,535.00	6.40	334.89	4,524.83	173.99	-83.21	192.59	0.10	-0.10	-0.15
4,628.00	6.33	336.12	4,617.26	183.37	-87.48	202.88	0.16	-0.08	1.32
4,721.00	7.33	335.23	4,709.59	193.44	-92.04	213.91	1.08	1.08	-0.96
4,814.00	7.22	339.48	4,801.85	204.30	-96.58	225.61	0.59	-0.12	4.57
4,907.00	7.43	339.52	4,894.09	215.41	-100.73	237.35	0.23	0.23	0.04
4,998.00	7.69	340.57	4,984.30	226.66	-104.81	249.19	0.32	0.29	1.15
5,090.00	7.16	333.69	5,075.53	237.61	-109.40	261.00	1.12	-0.58	-7.48
5,181.00	7.28	332.34	5,165.80	247.80	-114.59	272.43	0.23	0.13	-1.48
5,272.00	7.45	332.70	5,256.05	258.15	-119.98	284.09	0.19	0.19	0.40
5,365.00	7.75	331.81	5,348.24	269.03	-125.70	296.39	0.35	0.32	-0.96
5,459.00	6.35	339.44	5,441.53	279.49	-130.52	307.88	1.79	-1.49	8.12
5,551.00	6.20	340.46	5,532.97	288.93	-133.97	317.82	0.20	-0.16	1.11
5,642.00	6.24	341.94	5,623.44	298.26	-137.15	327.54	0.18	0.04	1.63
5,734.00	6.52	334.91	5,714.87	307.75	-140.91	337.67	0.90	0.30	-7.64
5,827.00	6.55	331.62	5,807.27	317.20	-145.67	348.24	0.40	0.03	-3.54
5,920.00	6.77	336.50	5,899.64	326.89	-150.38	359.01	0.65	0.24	5.25
5,950.00	6.81	335.41	5,929.43	330.13	-151.83	362.54	0.45	0.13	-3.63
6,013.00	6.81	335.41	5,991.99	336.92	-154.93	370.00	0.00	0.00	0.00
6,038.00	6.56	334.26	6,016.82	339.56	-156.17	372.90	1.13	-1.00	-4.60
6,069.00	6.39	336.31	6,047.62	342.73	-157.63	376.39	0.93	-0.55	6.61
6,099.00	6.06	332.13	6,077.44	345.66	-159.04	379.64	1.87	-1.10	-13.93
6,129.00	6.81	335.91	6,107.25	348.68	-160.51	382.99	2.87	2.50	12.60
6,160.00	9.00	339.63	6,137.96	352.63	-162.11	387.23	7.25	7.06	12.00
6,190.00	11.50	340.30	6,167.48	357.65	-163.93	392.50	8.34	8.33	2.23
6,220.00	13.50	342.00	6,196.76	363.80	-166.02	398.90	6.78	6.67	5.67
6,250.00	15.97	341.67	6,225.78	371.05	-168.40	406.41	8.24	8.23	-1.10
6,280.00	18.13	342.97	6,254.46	379.43	-171.07	415.04	7.31	7.20	4.33
6,310.00	20.34	342.71	6,282.78	388.87	-173.98	424.73	7.37	7.37	-0.87
6,341.00	22.46	342.64	6,311.64	399.67	-177.35	435.82	6.84	6.84	-0.23
6,370.00	24.65	342.53	6,338.22	410.72	-180.82	447.19	7.55	7.55	-0.38
6,400.00	26.90	341.18	6,365.24	423.12	-184.89	460.02	7.75	7.50	-4.50
6,431.00	29.23	339.37	6,392.59	436.84	-189.82	474.44	8.00	7.52	-5.84
6,461.00	31.33	337.95	6,418.50	450.93	-195.33	489.44	7.40	7.00	-4.73
6,491.00	33.50	335.59	6,443.82	465.70	-201.68	505.45	8.37	7.23	-7.87
6,521.00	35.83	334.26	6,468.49	481.15	-208.91	522.48	8.17	7.77	-4.43
6,552.00	38.61	334.37	6,493.18	498.05	-217.04	541.21	8.97	8.97	0.35
6,582.00	40.48	334.75	6,516.31	515.29	-225.24	560.28	6.29	6.23	1.27
6,612.00	42.80	334.59	6,538.73	533.31	-233.77	580.18	7.74	7.73	-0.53

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Survey Report

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Project:	Mary Prospect	**TVD Reference:**	GL 1341' & KB 18' @ 1341.00ft (Saxon 141)
Site:	ZMBG Pad	**MD Reference:**	GL 1341' & KB 18' @ 1341.00ft (Saxon 141)
Well:	5H	**North Reference:**	Grid
Wellbore:	OH	**Survey Calculation Method:**	Minimum Curvature
Design:	5H As Drilled	**Database:**	Northeast District

Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
6,642.00	44.79	334.09	6,560.38	552.02	-242.76	600.91	6.73	6.63	-1.67
6,673.00	47.84	333.12	6,581.79	572.10	-252.73	623.31	10.10	9.84	-3.13
6,703.00	50.33	332.45	6,601.44	592.26	-263.10	645.97	8.47	8.30	-2.23
6,733.00	53.03	332.33	6,620.04	613.11	-274.01	669.51	9.01	9.00	-0.40
6,764.00	55.40	331.74	6,638.16	635.32	-285.80	694.65	7.80	7.65	-1.90
6,794.00	57.57	331.58	6,654.73	657.33	-297.68	719.66	7.25	7.23	-0.53
6,825.00	59.38	330.67	6,670.94	680.47	-310.44	746.08	6.35	5.84	-2.94
6,855.00	62.03	331.58	6,685.61	703.38	-323.07	772.24	9.22	8.83	3.03
6,887.00	64.17	330.96	6,700.09	728.40	-336.79	800.78	6.91	6.69	-1.94
6,919.00	66.13	331.71	6,713.54	753.88	-350.71	829.81	6.48	6.13	2.34
6,951.00	68.33	331.53	6,725.92	779.84	-364.74	859.32	6.89	6.88	-0.56
6,983.00	70.86	331.84	6,737.08	806.24	-378.96	889.31	7.96	7.91	0.97
7,014.00	73.07	331.56	6,746.68	832.19	-392.93	918.78	7.18	7.13	-0.90
7,046.00	75.34	332.37	6,755.39	859.37	-407.41	949.57	7.50	7.09	2.53
7,078.00	77.41	332.65	6,762.92	886.95	-421.76	980.66	6.52	6.47	0.88
7,110.00	78.82	333.16	6,769.51	914.83	-436.02	1,011.97	4.67	4.41	1.59
7,142.00	80.32	333.70	6,775.31	942.98	-450.10	1,043.42	4.97	4.69	1.69
7,174.00	82.10	333.37	6,780.20	971.29	-464.19	1,075.02	5.66	5.56	-1.03
7,206.00	83.43	332.40	6,784.23	999.54	-478.66	1,106.75	5.13	4.16	-3.03
7,209.51	83.49	332.41	6,784.63	1,002.64	-480.28	1,110.24	1.83	1.81	0.25
ZMBG 5H_LP2									
7,238.00	84.01	332.48	6,787.73	1,027.74	-493.38	1,138.56	1.83	1.81	0.25
7,270.00	85.86	332.25	6,790.55	1,055.98	-508.16	1,170.43	5.83	5.78	-0.72
7,301.00	88.92	331.49	6,791.96	1,083.28	-522.76	1,201.39	10.17	9.87	-2.45
7,333.00	90.30	331.81	6,792.18	1,111.44	-537.95	1,233.39	4.43	4.31	1.00
7,365.00	90.64	331.38	6,791.92	1,139.59	-553.18	1,265.39	1.71	1.06	-1.34
7,429.00	91.98	329.33	6,790.46	1,195.19	-584.82	1,329.35	3.83	2.09	-3.20
7,492.00	91.61	328.41	6,788.48	1,249.09	-617.37	1,392.26	1.57	-0.59	-1.46
7,556.00	92.18	328.72	6,786.37	1,303.67	-650.73	1,456.14	1.01	0.89	0.48
7,620.00	91.71	328.65	6,784.19	1,358.32	-683.98	1,520.03	0.74	-0.73	-0.11
7,683.00	90.64	328.46	6,782.90	1,412.05	-716.84	1,582.94	1.72	-1.70	-0.30
7,747.00	90.97	329.10	6,782.00	1,466.78	-750.01	1,646.86	1.13	0.52	1.00
7,811.00	91.41	330.01	6,780.67	1,521.94	-782.43	1,710.81	1.58	0.69	1.42
7,874.00	92.15	330.32	6,778.72	1,576.56	-813.75	1,773.76	1.27	1.17	0.49
7,938.00	91.61	330.54	6,776.62	1,632.20	-845.32	1,837.72	0.91	-0.84	0.34
8,002.00	91.24	331.75	6,775.03	1,688.23	-876.20	1,901.70	1.98	-0.58	1.89
8,065.00	91.78	331.70	6,773.37	1,743.70	-906.03	1,964.67	0.86	0.86	-0.08
8,129.00	91.41	332.02	6,771.58	1,800.11	-936.20	2,028.65	0.76	-0.58	0.50
8,193.00	91.34	331.97	6,770.05	1,856.60	-966.24	2,092.63	0.13	-0.11	-0.08
8,256.00	92.19	332.88	6,768.11	1,912.42	-995.39	2,155.59	1.98	1.35	1.44
8,320.00	91.75	332.06	6,765.91	1,969.14	-1,024.96	2,219.54	1.45	-0.69	-1.28
8,384.00	91.27	330.05	6,764.22	2,025.12	-1,055.92	2,283.51	3.23	-0.75	-3.14
8,448.00	91.95	329.28	6,762.42	2,080.33	-1,088.23	2,347.45	1.60	1.06	-1.20

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Company:	Stone Energy	**Local Co-ordinate Reference:**	Well 5H
Project:	Mary Prospect	**TVD Reference:**	GL 1341' & KB 18' @ 1341.00ft (Saxon 141)
Site:	ZMBG Pad	**MD Reference:**	GL 1341' & KB 18' @ 1341.00ft (Saxon 141)
Well:	5H	**North Reference:**	Grid
Wellbore:	OH	**Survey Calculation Method:**	Minimum Curvature
Design:	5H As Drilled	**Database:**	Northeast District

Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
8,511.00	91.48	329.73	6,760.54	2,134.59	-1,120.18	2,410.39	1.03	-0.75	0.71
8,574.00	90.67	330.13	6,759.36	2,189.11	-1,151.75	2,473.35	1.43	-1.29	0.63
8,638.00	91.41	329.53	6,758.19	2,244.43	-1,183.90	2,537.32	1.49	1.16	-0.94
8,701.00	92.08	329.50	6,756.28	2,298.69	-1,215.85	2,600.25	1.06	1.06	-0.05
8,764.00	90.87	328.84	6,754.65	2,352.77	-1,248.13	2,663.18	2.19	-1.92	-1.05
8,828.00	89.97	329.75	6,754.18	2,407.79	-1,280.80	2,727.13	2.00	-1.41	1.42
8,891.00	90.24	328.97	6,754.07	2,462.00	-1,312.91	2,790.09	1.31	0.43	-1.24
8,955.00	92.26	330.37	6,752.67	2,517.22	-1,345.22	2,854.04	3.84	3.16	2.19
9,018.00	91.68	329.59	6,750.51	2,571.74	-1,376.72	2,916.98	1.54	-0.92	-1.24
9,082.00	91.65	331.37	6,748.65	2,627.40	-1,408.24	2,980.94	2.78	-0.05	2.78
9,145.00	92.63	331.54	6,746.29	2,682.71	-1,438.32	3,043.90	1.58	1.56	0.27
9,209.00	91.48	330.83	6,744.00	2,738.74	-1,469.15	3,107.85	2.11	-1.80	-1.11
9,273.00	90.64	330.41	6,742.82	2,794.50	-1,500.54	3,171.84	1.47	-1.31	-0.66
9,337.00	91.34	330.90	6,741.71	2,850.28	-1,531.90	3,235.82	1.34	1.09	0.77
9,400.00	90.84	331.66	6,740.51	2,905.52	-1,562.17	3,298.81	1.44	-0.79	1.21
9,464.00	90.77	332.20	6,739.61	2,961.99	-1,592.28	3,362.80	0.85	-0.11	0.84
9,527.00	91.71	333.31	6,738.25	3,017.98	-1,621.11	3,425.77	2.31	1.49	1.76
9,591.00	92.52	333.30	6,735.89	3,075.12	-1,649.85	3,489.69	1.27	1.27	-0.02
9,655.00	91.78	333.27	6,733.49	3,132.25	-1,678.60	3,553.61	1.16	-1.16	-0.05
9,718.00	91.28	331.90	6,731.80	3,188.15	-1,707.59	3,616.57	2.31	-0.79	-2.17
9,782.00	91.68	331.89	6,730.15	3,244.59	-1,737.73	3,680.55	0.63	0.63	-0.02
9,846.00	92.12	332.27	6,728.03	3,301.11	-1,767.68	3,744.51	0.91	0.69	0.59
9,909.00	90.84	330.55	6,726.40	3,356.40	-1,797.82	3,807.49	3.40	-2.03	-2.73
9,973.00	90.10	330.69	6,725.88	3,412.17	-1,829.22	3,871.48	1.18	-1.16	0.22
10,036.00	90.60	331.07	6,725.49	3,467.20	-1,859.87	3,934.47	1.00	0.79	0.60
10,099.00	91.61	329.05	6,724.28	3,521.78	-1,891.31	3,997.44	3.58	1.60	-3.21
10,163.00	92.11	328.32	6,722.20	3,576.43	-1,924.55	4,061.33	1.38	0.78	-1.14
10,225.00	92.62	326.84	6,719.64	3,628.72	-1,957.76	4,123.13	2.52	0.82	-2.39
10,289.00	91.88	327.18	6,717.13	3,682.36	-1,992.59	4,186.89	1.27	-1.16	0.53
10,352.00	91.45	327.80	6,715.30	3,735.47	-2,026.43	4,249.72	1.20	-0.68	0.98
10,416.00	91.38	329.38	6,713.72	3,790.07	-2,059.77	4,313.62	2.47	-0.11	2.47
10,479.00	91.91	330.19	6,711.91	3,844.49	-2,091.46	4,376.56	1.54	0.84	1.29
10,543.00	91.27	330.57	6,710.13	3,900.10	-2,123.08	4,440.53	1.16	-1.00	0.59
10,607.00	90.97	330.39	6,708.88	3,955.78	-2,154.61	4,504.50	0.55	-0.47	-0.28
10,666.00	91.75	330.91	6,707.48	4,007.19	-2,183.52	4,563.48	1.59	1.32	0.88
10,730.00	92.29	330.98	6,705.23	4,063.10	-2,214.58	4,627.44	0.85	0.84	0.11
10,793.00	91.31	331.01	6,703.25	4,118.18	-2,245.12	4,690.41	1.56	-1.56	0.05
10,857.00	90.77	331.82	6,702.09	4,174.36	-2,275.73	4,754.39	1.52	-0.84	1.27
10,920.00	91.41	331.29	6,700.89	4,229.75	-2,305.73	4,817.38	1.32	1.02	-0.84
10,984.00	91.95	331.54	6,699.01	4,285.92	-2,336.34	4,881.35	0.93	0.84	0.39
11,048.00	91.28	331.20	6,697.21	4,342.07	-2,367.00	4,945.33	1.17	-1.05	-0.53
11,111.00	91.08	331.75	6,695.91	4,397.42	-2,397.07	5,008.31	0.93	-0.32	0.87
11,175.00	91.75	331.18	6,694.33	4,453.62	-2,427.64	5,072.29	1.37	1.05	-0.89
11,239.00	92.38	331.80	6,692.02	4,509.82	-2,458.17	5,136.25	1.38	0.98	0.97

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Well:	5H	**North Reference:**	Grid
Wellbore:	OH	**Survey Calculation Method:**	Minimum Curvature
Design:	5H As Drilled	**Database:**	Northeast District

Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
11,302.00	91.75	331.53	6,689.75	4,565.24	-2,488.05	5,199.21	1.09	-1.00	-0.43
11,365.00	91.11	330.97	6,688.18	4,620.46	-2,518.34	5,262.19	1.35	-1.02	-0.89
11,429.00	91.38	330.38	6,686.79	4,676.24	-2,549.68	5,326.17	1.01	0.42	-0.92
11,492.00	91.61	330.37	6,685.15	4,730.99	-2,580.81	5,389.14	0.37	0.37	-0.02
11,556.00	91.14	330.02	6,683.61	4,786.51	-2,612.61	5,453.10	0.92	-0.73	-0.55
11,619.00	90.57	330.20	6,682.67	4,841.12	-2,644.00	5,516.08	0.95	-0.90	0.29
11,683.00	90.91	329.86	6,681.84	4,896.56	-2,675.97	5,580.05	0.75	0.53	-0.53
11,746.00	91.98	330.61	6,680.26	4,951.23	-2,707.24	5,643.02	2.07	1.70	1.19
11,810.00	91.81	330.50	6,678.14	5,006.93	-2,738.68	5,706.98	0.32	-0.27	-0.17
11,874.00	91.71	330.94	6,676.17	5,062.73	-2,769.97	5,770.94	0.70	-0.16	0.69
11,937.00	92.59	330.65	6,673.81	5,117.68	-2,800.68	5,833.89	1.47	1.40	-0.46
12,001.00	92.18	331.23	6,671.15	5,173.57	-2,831.74	5,897.83	1.11	-0.64	0.91
12,065.00	92.01	332.34	6,668.81	5,229.93	-2,861.98	5,961.79	1.75	-0.27	1.73
12,128.00	91.65	332.56	6,666.80	5,285.76	-2,891.10	6,024.75	0.67	-0.57	0.35
12,192.00	91.21	332.06	6,665.20	5,342.41	-2,920.84	6,088.72	1.04	-0.69	-0.78
12,255.00	91.54	330.67	6,663.69	5,397.69	-2,951.02	6,151.70	2.27	0.52	-2.21
Last SDI MWD Survey									
12,312.00	91.54	330.67	6,662.15	5,447.36	-2,978.93	6,208.67	0.00	0.00	0.00
Projection to Bit - ZMBG 5H_BHL2									

Design Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates +N/-S (ft)	Local Coordinates +E/-W (ft)	Comment
4.00	4.00	0.00	0.00	Ground Level
89.00	89.00	0.16	0.07	First SDI Gyro Survey
2,548.00	2,547.99	1.03	0.68	Last Gyro Survey
2,593.00	2,592.99	1.25	0.55	First SDI MWD Survey
12,255.00	6,663.69	5,397.69	-2,951.02	Last SDI MWD Survey
12,312.00	6,662.15	5,447.36	-2,978.93	Projection to Bit

Checked By: _____ Approved By: _____ Date: _____

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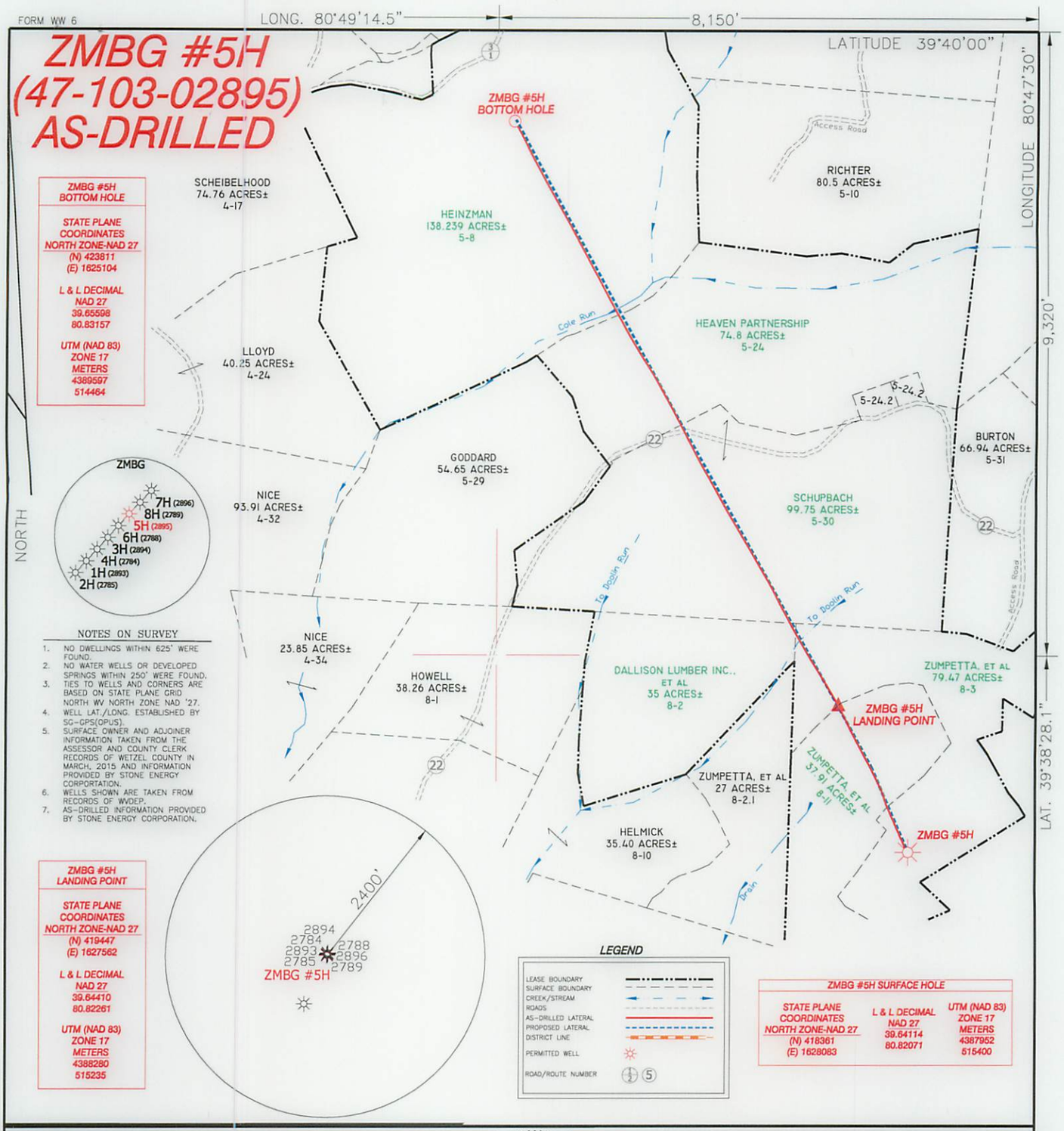
FORM WW 6

ZMBG #5H (47-103-02895) AS-DRILLED



ZMBG #5H BOTTOM HOLE

STATE PLANE COORDINATES NORTH ZONE-NAD 27
(N) 423811
(E) 1625104

L & L DECIMAL NAD 27
39.65598
80.83157

UTM (NAD 83) ZONE 17 METERS
4389597
514464

ZMBG #5H LANDING POINT

STATE PLANE COORDINATES NORTH ZONE-NAD 27
(N) 419447
(E) 1627562

L & L DECIMAL NAD 27
39.64410
80.82261

UTM (NAD 83) ZONE 17 METERS
4388280
515235

ZMBG #5H SURFACE HOLE

STATE PLANE COORDINATES NORTH ZONE-NAD 27	L & L DECIMAL NAD 27	UTM (NAD 83) ZONE 17 METERS
(N) 418361 (E) 1628083	39.64114 80.82071	4387952 515400

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 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 JULY 15, 20 15

OPERATORS WELL NO. ZMBG #5H

API WELL NO. 47 — 103 — 02895
STATE COUNTY PERMIT

MINIMUM DEGREE OF ACCURACY 1/2500 FILE NO. W2068 (BK 77-29)
SCALE 1" = 1000'
PROVEN SOURCE OF ELEVATION SG-GPS(OPUS)

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 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 465.17±
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 6,662' MD 12,312'

COUNTY NAME
PERMIT

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

WR-35
Rev. 8/23/13

PM

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

API 47 - 103 - 02896 County Wetzel District Magnolia
Quad New Martinsville Pad Name ZMBG Field/Pool Name Mary
Farm name Zumpetta, Lawrence et al Well Number #7H
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 4,387,962	Easting 515,408
Landing Point of Curve	Northing 4,388,353	Easting 515,457
Bottom Hole	Northing 4,389,184	Easting 514,970

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 7/1/2013 Date drilling commenced 10/16/2013 Date drilling ceased 7/21/2014
Date completion activities began 8/5/2014 Date completion activities ceased 2/13/2015
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 1,152 Cavern(s) encountered (Y/N) depths N
Is coal being mined in area (Y/N) N

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Reviewed by: JK

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API 47- 103 - 02896 Farm name Zumpetta, Lawrence et al Well number #7H

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"	90'	New	LS		N - GTS
Surface	17.5"	13.375"	1,257'	New	J55	116' & 191'	N - GTS
Coal	17.5"	13.375"	1,257'	New	J55	116' & 191'	N - GTS
Intermediate 1	12.25"	9.625"	2,571'	New	J55		Y - CTS
Intermediate 2							
Intermediate 3							
Production	8.75"	5.5"	10,556'	New	P110		N - TOC @ 1,305
Tubing	N/A	2.375"	7,266'	New	J55		N/A
Packer type and depth set		TAM Inflatable Packer @ 1,156' on 9.625" casing					

Comment Details Circulated 0 bbls cement to surface on 13.375" casing string. Circulated 34 bbls cement to surface on the 9.625" casing string. TOC on 5.5" after running CBL @ 1,305'.

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"	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	8.0
Intermediate 2							
Intermediate 3							
Production	Lead-TunedSpacer Tail-VariCem	Lead-178 Tail-1,890	Lead- 14.5 Tail-15.2	Lead-2.37 Tail-1.20	Lead-422 Tail-2,268	1,305	7.0
Tubing							

Drillers TD (ft) 10,559 MD / 6,715 TVD Loggers TD (ft) N/A
Deepest formation penetrated Marcellus Shale Plug back to (ft) _____
Plug back procedure _____

Kick off depth (ft) 5,706 MD / 5,691' 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 2, 4, 6, 8, 10, 12, 14, 16, 27 and 29. Intermediate casing had bow spring centralizers placed on joints 3, 7, 11, 15, 19, 23, 27, 31, 35, 39, 43, 47, 51, 55 and 59. Production casing had rigid spiral centralizers placed on every fourth joint beginning with joint 1 to joint 180. Ran a total of 46 rigid spiral centralizers. Ran Bow spring centralizers on every eighth joint from joint 188 to joint 236. A total of 7 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 - 02896 Farm name Zumpetta, Lawrence et al Well number #7H

PERFORATION RECORD

Stage No.	Perforation date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formation(s)
1	8/9/14	10,350	10,488	72	Marcellus Shale
2	10/17/14	10,145	10,279	72	Marcellus Shale
3	10/18/14	9,940	10,078	72	Marcellus Shale
4	10/19/14	9,735	9,873	72	Marcellus Shale
5	10/20/14	9,530	9,666	72	Marcellus Shale
6	10/21/14	9,322	9,473	72	Marcellus Shale
7	10/22/14	9,110	9,263	72	Marcellus Shale
8	10/23/14	8,900	9,053	72	Marcellus Shale
9	10/24/14	8,690	8,843	72	Marcellus Shale
10	10/26/14	8,483	8,629	72	Marcellus Shale
11	10/27/14	8,270	8,423	72	Marcellus Shale
12	10/28/14	8,052	8,210	126	Marcellus Shale
13	10/31/14	7,850	7,993	72	Marcellus Shale
14	11/1/14	7,644	7,793	72	Marcellus Shale
15	11/2/14	7,370	7,583	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	10/10/14	84.1	7,106	6,045	5,100	326,500	5,760	
2	10/18/14	85.8	7,171	5,632	4,857	364,860	6,146	
3	10/19/14	85.0	7,105	5,673	4,618	366,520	6,079	
4	10/20/14	85.3	7,319	8,746	5,244	364,100	6,149	
5	10/21/14	84.7	7,315	5,708	7,792	362,440	6,528	
6	10/22/14	84.7	7,216	5,989	4,917	361,840	6,070	
7	10/23/14	85.3	7,141	5,726	5,005	363,360	6,104	
8	10/24/14	80.6	6,852	6,294	5,096	359,460	6,054	
9	10/26/14	80.8	6,666	6,087	5,184	363,780	6,183	
10	10/27/14	80.4	6,701	6,062	5,035	362,960	6,012	
11	10/28/14	78.9	7,020	6,436	5,648	357,780	5,912	
12	10/29/14	72.1	8,243	8,823	5,066	345,780	10,156	
13	11/1/14	79.9	6,579	5,837	5,066	365,180	6,243	
14	11/2/14	80.0	6,454	6,491	4,470	369,439	6,216	
15	11/4/14	80.0	6,412	6,369	5,184	359,600	6,246	

Please insert additional pages as applicable.

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API 47- 103 - 02896 Farm name Zumpetta, Lawrence et al Well number #7H

PRODUCING FORMATION(S)	DEPTHS		
Marcellus Shale	6,794' to 6,717' TVD	7,370' to 10,488' MD	

Please insert additional pages as applicable.

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

SHUT-IN PRESSURE Surface 2,378 psi Bottom Hole 4,143 calculated psi DURATION OF TEST 67.7 hrs

OPEN FLOW	Gas	Oil	NGL	Water	GAS MEASURED BY
	2,130 mcfpd	bpd	105.3 bpd	486.7 bpd	□ 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					

Please insert additional pages as applicable.

Drilling Contractor Nomac (top-hole) & Saxon Drilling (horizontal)
Address 2034 Martins Branch Rd /9303 New Trails Drive City Mount Morris / The Woodlands State PA / TX Zip 25312 / 77381

Logging Company Scientific Drilling and Schlumberger
Address 3475 Washington Ave / 1178 US HWY 33 East City Finleyville / Weston State PA / WV Zip 15332 / 26452

Cementing Company Halliburton
Address 1628 Jackson Mill Road City Jane Lew State WV Zip 26378

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 8/25/2015

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

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ZMBG #7H
API 47-103-02896
Stone Energy Corporation

	Top (ft TVD)	Horizontal Top (ft MD)		Bottom (ft TVD)	Bottom (ft MD)	
Sandstone & Shale	Surface		*	1,152'		FW @ 100'
Coal	1,152'		*	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'		*	5,684'	5,702'	
Rhinestreet	5,684'	5,702'	~	6,498'	6,636'	
Cashaqua	6,498'	6,636'	~	6,615'	6,819'	
Middlesex	6,615'	6,819'	~	6,637'	6,852'	
West River	6,637'	6,852'	~	6,689'	6,955'	
Geneseo	6,689'	6,955'	~	6,706'	6,993'	
Tully Limestone	6,706'	6,993'	~	6,740'	7,085'	
Hamilton Shale	6,740'	7,085'	~	6,774'	7,218'	
Marcellus	6,774'	7,218'	~	6,715'	10,559'	
TD				6,715'	10,559'	

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

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103-02896

Hydraulic Fracturing Fluid Product Component Information Disclosure

Fracture Date:	11/4/2014
State:	West Virginia
County/Parish:	Wetzel County
API Number:	47-103-02896
Operator Name:	Stone Energy
Well Name and Number:	ZMBG #7H
Longitude:	515,408
Latitude:	4,387,962
Long/Lat Projection:	
Production Type:	Natural Gas
True Vertical Depth (TVD):	6715
Total Water Volume (gal)*:	4026123

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, Propping Agent, Fluid Loss	Water (Including Mix Water Supplied by Client)*	NA		85.96392%	
			Crystalline silica	14808-60-7	90.77231%	12.74087%	
			Hydrochloric acid	7647-01-0	1.03933%	0.14588%	
			Ammonium sulfate	7783-20-2	0.12996%	0.01824%	
			Polyethylene glycol monohexyl ether	31726-34-8	0.06970%	0.00978%	
			Glutaraldehyde	111-30-8	0.05291%	0.00743%	
			Diammonium peroxidisulphate	7727-54-0	0.03021%	0.00424%	
			Urea	57-13-6	0.02166%	0.00304%	
			Methanol	67-56-1	0.00602%	0.00085%	
			Dicoco dimethyl quaternary ammonium chloride	61789-77-3	0.00536%	0.00075%	
			Trisodium ortho phosphate	7601-54-9	0.00438%	0.00061%	
			Ethylene Glycol	107-21-1	0.00438%	0.00061%	
			Sodium erythorbate	6381-77-7	0.00328%	0.00046%	
			Thiourea formaldehyde polymer	Proprietary	0.00301%	0.00042%	
			Aliphatic acids	Proprietary	0.00231%	0.00032%	
			Calcium chloride	10043-52-4	0.00129%	0.00018%	
			Aliphatic alcohols, ethoxylated #2	Proprietary	0.00100%	0.00014%	
			Propargyl alcohol	107-19-7	0.00100%	0.00014%	
			Olefin hydrocarbon	Proprietary	0.00050%	0.00007%	
			Polypropylene glycol	25322-69-4	0.00027%	0.00004%	
			Hexadec-1-ene	629-73-2	0.00020%	0.00003%	
			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%

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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.

Project: Mary Prospect
Site: ZMBG Pad
Well: 7H
Wellbore: OH
Design: 7H As Drilled

Scientific Drilling

103-02896

WELL DETAILS: 7H

Ground Level: 1341.00

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.00	0.00	418393.00	1628110.00	39° 38' 28.413 N	80° 49' 14.204 W

REFERENCE INFORMATION

Co-ordinate (N/E) Reference: Well 7H, Grid North
Vertical (TVD) Reference: GL 1341' & KB 18' @ 1359.00ft (Saxon 141)
Section (VS) Reference: Slot - (0.00N, 0.00E)
Measured Depth Reference: GL 1341' & KB 18' @ 1359.00ft (Saxon 141)
Calculation Method: Minimum Curvature

PROJECT DETAILS: Mary Prospect

Geodetic System: US State Plane 1927 (Exact solution)
Datum: NAD 1927 (NADCON CONUS)
Ellipsoid: Clarke 1866
Zone: West Virginia North 4701
System Datum: Mean Sea Level

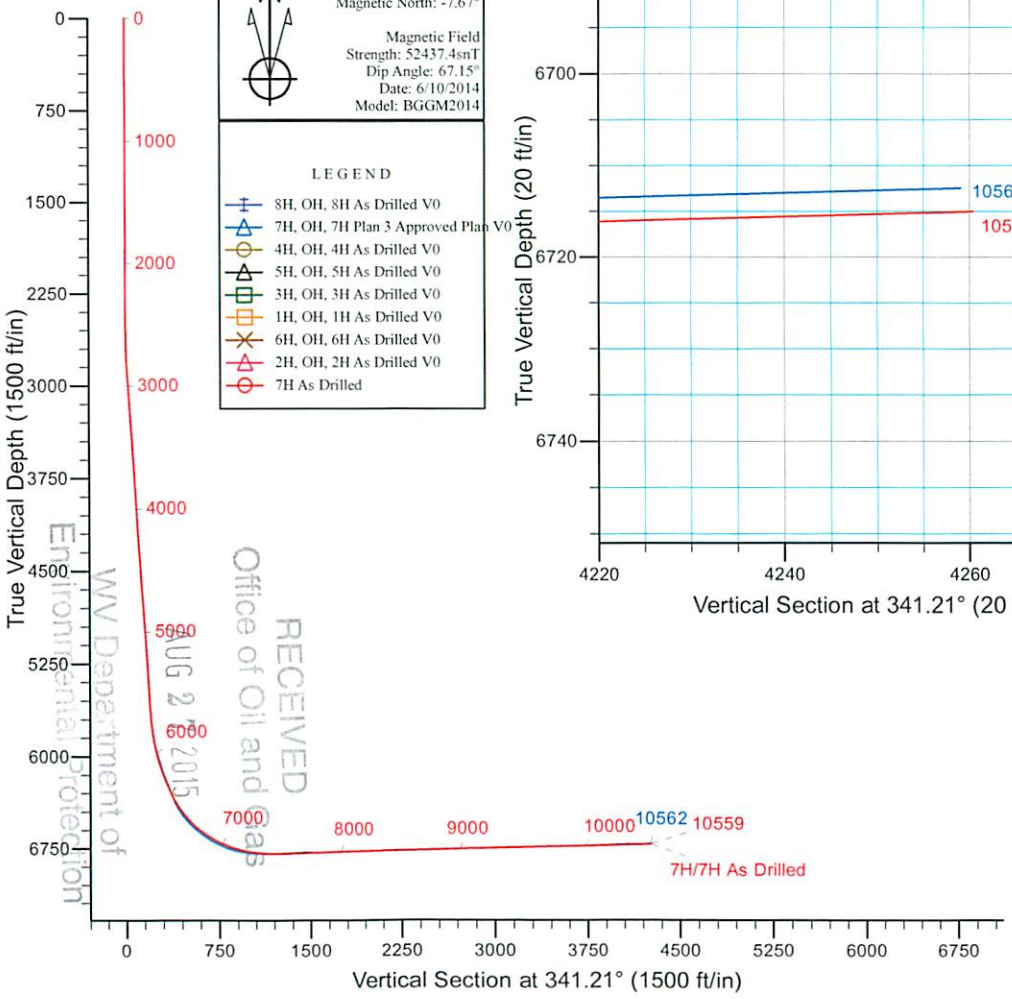
SECTION DETAILS

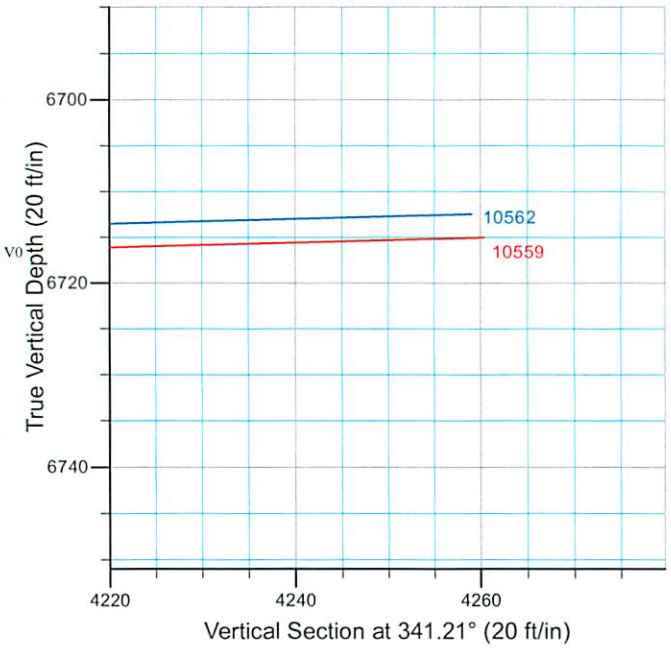
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target
1	5709.00	6.15	28.65	5694.33	258.28	135.28	0.00	0.00	200.93	
2	6132.91	31.56	33.58	6092.24	372.51	208.73	6.00	6.01	285.41	
3	6402.93	31.56	33.58	6322.33	490.24	286.88	0.00	0.00	371.69	
4	7370.08	91.50	331.00	6796.00	1241.70	174.90	8.00	-65.41	1119.17	ZMBG 7H_LP2
5	10561.58	91.50	331.00	6712.46	4032.01	-1372.00	0.00	0.00	4259.05	ZMBG 7H_BHL2

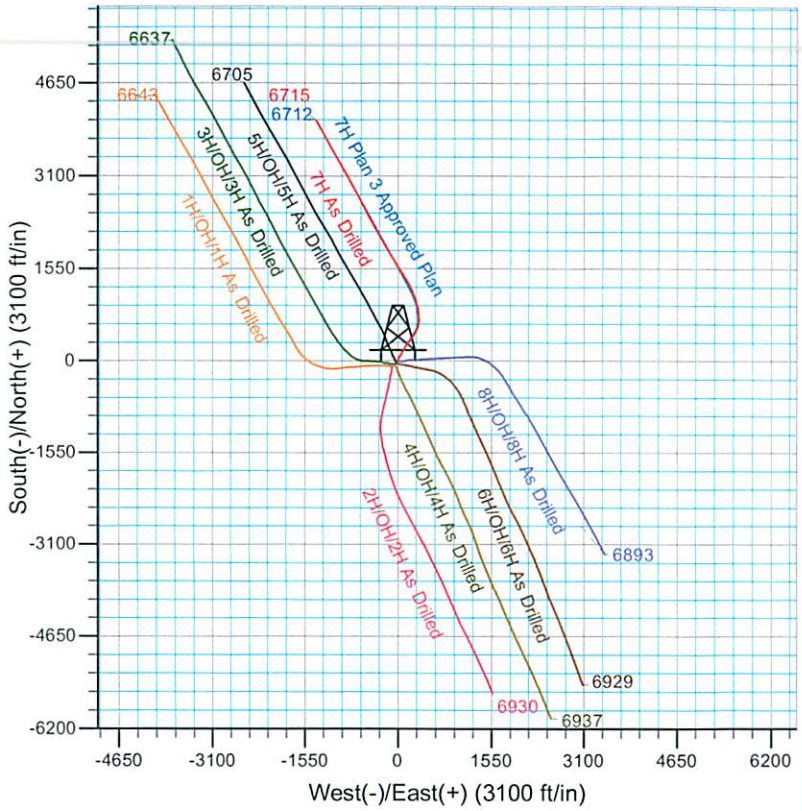
Azimuths to Grid North
True North: 0.84°
Magnetic North: -7.67°

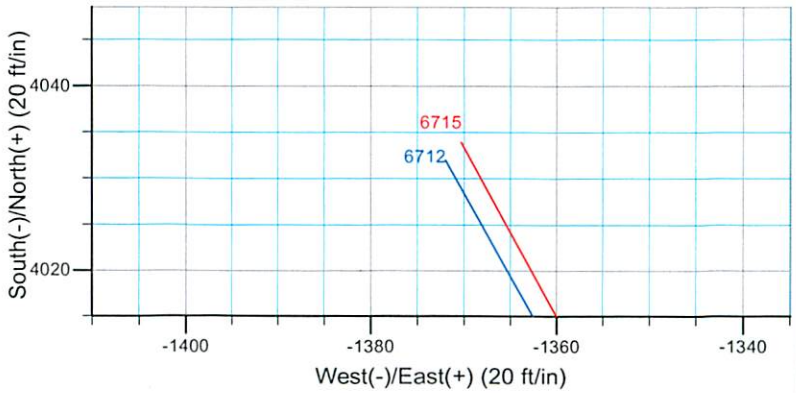
Magnetic Field
Strength: 52437.4snT
Dip Angle: 67.15°
Date: 6/10/2014
Model: BGGM2014

LEGEND
- 8H, OH, 8H As Drilled V0
- 7H, OH, 7H Plan 3 Approved Plan V0
- 4H, OH, 4H As Drilled V0
- 5H, OH, 5H As Drilled V0
- 3H, OH, 3H As Drilled V0
- 1H, OH, 1H As Drilled V0
- 6H, OH, 6H As Drilled V0
- 2H, OH, 2H As Drilled V0
- 7H As Drilled









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Stone Energy

Mary Prospect
ZMBG Pad
7H

OH

Design: 7H As Drilled

Standard Survey Report

27 June, 2014

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STONE ENERGY

Scientific Drilling
Survey Report

Scientific Drilling

Company:	Stone Energy	**Local Co-ordinate Reference:**	Well 7H
Project:	Mary Prospect	**TVD Reference:**	GL 1341' & KB 18' @ 1359.00ft (Saxon 141)
Site:	ZMBG Pad	**MD Reference:**	GL 1341' & KB 18' @ 1359.00ft (Saxon 141)
Well:	7H	**North Reference:**	Grid
Wellbore:	OH	**Survey Calculation Method:**	Minimum Curvature
Design:	7H As Drilled	**Database:**	Northeast District

Project Mary Prospect, West Virginia

Map System:	US State Plane 1927 (Exact solution)	**System Datum:**	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	West Virginia North 4701		

Site ZMBG Pad

Site Position:		**Northing:**	418,393.00 usft	**Latitude:**	39° 38' 28.413 N
From:	Map	**Easting:**	1,628,110.00 usft	**Longitude:**	80° 49' 14.204 W
Position Uncertainty:	0.00 ft	**Slot Radius:**	13-3/16 "	**Grid Convergence:**	-0.84 °

Well 7H

Well Position	**+N/-S**	0.00 ft	**Northing:**	418,393.00 usft	**Latitude:**	39° 38' 28.413 N
	+E/-W	0.00 ft	**Easting:**	1,628,110.00 usft	**Longitude:**	80° 49' 14.204 W
Position Uncertainty		0.00 ft	**Wellhead Elevation:**	ft	**Ground Level:**	1,341.00 ft

Wellbore OH

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	5/16/2013	-8.48	67.19	52,608
	BGGM2013	8/28/2013	-8.54	67.19	52,532
	BGGM2013	10/18/2013	-8.54	67.18	52,514
	BGGM2013	3/3/2014	-8.55	67.15	52,465
	BGGM2013	4/23/2014	-8.56	67.13	52,447
	BGGM2014	6/10/2014	-8.51	67.15	52,437

Design 7H As Drilled

Audit Notes:

Version:	1.0	**Phase:**	ACTUAL	**Tie On Depth:**	0.00

Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.00	0.00	0.00	341.21

Survey Program **Date** 6/27/2014

From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
22.00	2,552.00	Survey 1 - Gyro (OH)	VES GyroFlex	
2,639.00	5,709.00	Survey 2 - MWD (OH)	MWD SDI	MWD - Standard ver 1.0.1
5,711.00	10,559.00	Survey 3 - SDI MWD (OH)	MWD SDI	MWD - Standard ver 1.0.1

Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
22.00	0.00	360.00	22.00	0.00	0.00	0.00	0.00	0.00	0.00
Ground Level									
107.00	0.29	305.79	107.00	0.13	-0.17	0.18	0.34	0.34	0.00

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Site:	ZMBG Pad	**MD Reference:**	GL 1341' & KB 18' @ 1359.00ft (Saxon 141)
Well:	7H	**North Reference:**	Grid
Wellbore:	OH	**Survey Calculation Method:**	Minimum Curvature
Design:	7H As Drilled	**Database:**	Northeast District

Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
First Vaughn Gyro Survey									
207.00	0.35	322.11	207.00	0.51	-0.57	0.67	0.11	0.06	16.32
307.00	0.13	298.77	306.99	0.81	-0.85	1.04	0.24	-0.22	-23.34
407.00	0.27	294.00	406.99	0.96	-1.17	1.29	0.14	0.14	-4.77
507.00	0.21	316.13	506.99	1.19	-1.51	1.61	0.11	-0.06	22.13
607.00	0.26	334.40	606.99	1.53	-1.74	2.00	0.09	0.05	18.27
707.00	0.16	337.93	706.99	1.86	-1.89	2.37	0.10	-0.10	3.53
807.00	0.16	323.43	806.99	2.10	-2.02	2.64	0.04	0.00	-14.50
907.00	0.19	301.67	906.99	2.30	-2.25	2.90	0.07	0.03	-21.76
1,007.00	0.12	228.35	1,006.99	2.32	-2.47	2.99	0.19	-0.07	-73.32
1,107.00	0.23	249.60	1,106.99	2.18	-2.73	2.94	0.13	0.11	21.25
1,207.00	0.08	207.78	1,206.99	2.05	-2.95	2.89	0.18	-0.15	-41.82
1,307.00	0.16	216.83	1,306.99	1.87	-3.07	2.76	0.08	0.08	9.05
1,407.00	0.16	224.33	1,406.99	1.66	-3.25	2.62	0.02	0.00	7.50
1,507.00	0.21	222.75	1,506.99	1.43	-3.47	2.47	0.05	0.05	-1.58
1,607.00	0.19	217.31	1,606.99	1.16	-3.70	2.29	0.03	-0.02	-5.44
1,707.00	0.17	186.03	1,706.99	0.88	-3.81	2.06	0.10	-0.02	-31.28
1,807.00	0.25	212.34	1,806.99	0.55	-3.95	1.79	0.12	0.08	26.31
1,907.00	0.15	218.75	1,906.99	0.26	-4.14	1.58	0.10	-0.10	6.41
2,007.00	0.34	201.73	2,006.99	-0.11	-4.34	1.29	0.20	0.19	-17.02
2,107.00	0.40	213.98	2,106.98	-0.68	-4.64	0.85	0.10	0.06	12.25
2,207.00	0.15	165.85	2,206.98	-1.10	-4.80	0.51	0.32	-0.25	-48.13
2,307.00	0.16	337.35	2,306.98	-1.09	-4.83	0.52	0.31	0.01	171.50
2,407.00	0.16	332.15	2,406.98	-0.84	-4.95	0.80	0.01	0.00	-5.20
2,507.00	0.30	330.26	2,506.98	-0.49	-5.14	1.19	0.14	0.14	-1.89
2,552.00	0.44	327.40	2,551.98	-0.24	-5.29	1.47	0.31	0.31	-6.35
Last Vaughn Gyro Survey									
2,639.00	0.71	325.07	2,638.98	0.48	-5.78	2.32	0.31	0.31	-2.68
2,639.00	0.71	325.07	2,638.98	0.48	-5.78	2.32	0.02	0.00	0.00
First SDI MWD Survey									
2,730.00	2.05	3.32	2,729.95	2.57	-6.01	4.37	1.71	1.47	42.04
2,825.00	3.79	13.49	2,824.82	7.32	-5.18	8.59	1.90	1.83	10.71
2,916.00	5.21	24.75	2,915.54	13.99	-2.75	14.13	1.83	1.56	12.37
3,008.00	5.75	31.35	3,007.12	21.72	1.40	20.11	0.90	0.59	7.17
3,101.00	5.71	32.24	3,099.66	29.61	6.29	26.01	0.10	-0.04	0.96
3,193.00	5.80	25.76	3,191.19	37.67	10.75	32.20	0.71	0.10	-7.04
3,287.00	5.31	31.68	3,284.75	45.65	15.10	38.35	0.80	-0.52	6.30
3,379.00	5.15	32.05	3,376.37	52.77	19.53	43.67	0.18	-0.17	0.40
3,471.00	5.34	28.16	3,467.98	60.05	23.74	49.20	0.44	0.21	-4.23
3,565.00	5.35	27.33	3,561.58	67.80	27.82	55.22	0.08	0.01	-0.88
3,658.00	5.40	23.41	3,654.17	75.67	31.55	61.47	0.40	0.05	-4.22
3,751.00	5.69	30.44	3,746.73	83.66	35.62	67.72	0.79	0.31	7.56
3,844.00	5.69	30.65	3,839.27	91.60	40.31	73.73	0.02	0.00	0.23
3,937.00	5.55	27.79	3,931.83	99.54	44.75	79.82	0.34	-0.15	-3.08

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Scientific Drilling

Survey Report

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Company:	Stone Energy	**Local Co-ordinate Reference:**	Well 7H
Project:	Mary Prospect	**TVD Reference:**	GL 1341' & KB 18' @ 1359.00ft (Saxon 141)
Site:	ZMBG Pad	**MD Reference:**	GL 1341' & KB 18' @ 1359.00ft (Saxon 141)
Well:	7H	**North Reference:**	Grid
Wellbore:	OH	**Survey Calculation Method:**	Minimum Curvature
Design:	7H As Drilled	**Database:**	Northeast District

Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
4,030.00	5.48	25.59	4,024.40	107.53	48.77	86.08	0.24	-0.08	-2.37
4,123.00	5.63	34.42	4,116.96	115.29	53.27	91.99	0.93	0.16	9.49
4,215.00	5.62	33.43	4,208.52	122.78	58.30	97.45	0.11	-0.01	-1.08
4,309.00	6.32	27.48	4,302.01	131.21	63.22	103.85	0.99	0.74	-6.33
4,402.00	6.38	25.77	4,394.44	140.40	67.83	111.07	0.21	0.06	-1.84
4,495.00	6.07	32.01	4,486.89	149.22	72.68	117.86	0.80	-0.33	6.71
4,589.00	6.01	31.31	4,580.37	157.64	77.87	124.15	0.10	-0.06	-0.74
4,681.00	6.20	28.71	4,671.85	166.12	82.76	130.60	0.36	0.21	-2.83
4,775.00	6.17	25.72	4,765.30	175.12	87.39	137.63	0.34	-0.03	-3.18
4,865.00	6.31	23.93	4,854.77	184.00	91.50	144.71	0.27	0.16	-1.99
4,959.00	5.86	28.42	4,948.24	192.94	95.88	151.77	0.70	-0.48	4.78
5,052.00	5.84	30.32	5,040.75	201.20	100.53	158.09	0.21	-0.02	2.04
5,146.00	6.08	26.69	5,134.25	209.77	105.18	164.71	0.48	0.26	-3.86
5,238.00	5.53	33.30	5,225.78	217.83	109.80	170.85	0.94	-0.60	7.18
5,333.00	5.54	35.03	5,320.33	225.41	114.94	176.37	0.18	0.01	1.82
5,429.00	5.77	35.84	5,415.87	233.12	120.43	181.90	0.25	0.24	0.84
5,524.00	5.88	31.12	5,510.38	241.16	125.74	187.80	0.52	0.12	-4.97
5,615.00	6.15	28.34	5,600.87	249.44	130.46	194.11	0.44	0.30	-3.05
5,646.00	6.15	28.65	5,631.70	252.36	132.05	196.37	0.11	0.00	1.00
5,709.00	6.15	28.65	5,694.33	258.28	135.28	200.93	0.00	0.00	0.00
5,711.00	7.54	33.78	5,696.32	258.48	135.41	201.08	75.76	69.41	256.15
5,743.00	9.51	37.73	5,727.97	262.32	138.19	203.82	6.42	6.16	12.34
5,775.00	11.85	41.63	5,759.41	266.87	142.00	206.90	7.65	7.31	12.19
5,807.00	13.87	41.53	5,790.61	272.19	146.72	210.42	6.31	6.31	-0.31
5,838.00	15.84	42.19	5,820.57	278.11	152.03	214.31	6.38	6.35	2.13
5,870.00	17.64	41.54	5,851.21	284.98	158.18	218.83	5.66	5.63	-2.03
5,902.00	19.13	40.57	5,881.58	292.59	164.80	223.90	4.75	4.66	-3.03
5,934.00	21.08	38.88	5,911.63	301.05	171.82	229.65	6.36	6.09	-5.28
5,966.00	22.40	36.60	5,941.35	310.43	179.07	236.19	4.90	4.13	-7.13
5,997.00	23.21	34.03	5,969.93	320.23	186.01	243.24	4.14	2.61	-8.29
6,029.00	24.79	33.51	5,999.16	331.05	193.25	251.15	4.98	4.94	-1.63
6,061.00	26.29	33.84	6,028.03	342.53	200.90	259.56	4.71	4.69	1.03
6,092.00	27.80	34.12	6,055.64	354.22	208.78	268.08	4.89	4.87	0.90
6,124.00	29.19	35.13	6,083.77	366.78	217.45	277.18	4.60	4.34	3.16
6,156.00	30.70	34.36	6,111.49	379.91	226.55	286.67	4.87	4.72	-2.41
6,187.00	31.74	33.64	6,138.00	393.23	235.54	296.39	3.56	3.35	-2.32
6,219.00	32.32	33.76	6,165.13	407.35	244.95	306.72	1.82	1.81	0.38
6,251.00	32.70	33.63	6,192.12	421.66	254.49	317.20	1.21	1.19	-0.41
6,283.00	32.99	32.01	6,219.00	436.24	263.90	327.97	2.89	0.91	-5.06
6,315.00	33.67	31.82	6,245.74	451.17	273.19	339.11	2.15	2.13	-0.59
6,347.00	34.01	30.87	6,272.32	466.39	282.46	350.53	1.97	1.06	-2.97
6,378.00	33.83	30.25	6,298.04	481.28	291.26	361.80	1.26	-0.58	-2.00
6,410.00	34.66	29.85	6,324.49	496.87	300.28	373.65	2.69	2.59	-1.25

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Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
6,442.00	36.32	26.99	6,350.55	513.21	309.11	386.27	7.34	5.19	-8.94
6,474.00	38.37	24.37	6,375.99	530.70	317.51	400.13	8.10	6.41	-8.19
6,506.00	39.85	22.10	6,400.82	549.25	325.46	415.13	6.43	4.63	-7.09
6,537.00	41.18	18.31	6,424.39	568.15	332.41	430.78	9.03	4.29	-12.23
6,569.00	42.01	14.43	6,448.33	588.52	338.39	448.14	8.46	2.59	-12.13
6,601.00	42.85	10.85	6,471.95	609.58	343.10	466.56	7.99	2.63	-11.19
6,633.00	43.91	6.94	6,495.21	631.29	346.49	486.02	9.02	3.31	-12.22
6,664.00	45.62	4.37	6,517.22	653.01	348.64	505.89	8.03	5.52	-8.29
6,696.00	46.88	2.38	6,539.35	676.08	349.99	527.29	5.97	3.94	-6.22
6,728.00	47.99	359.21	6,561.00	699.64	350.32	549.50	8.08	3.47	-9.91
6,760.00	49.70	356.21	6,582.06	723.71	349.34	572.59	8.85	5.34	-9.38
6,792.00	52.26	354.82	6,602.21	748.49	347.40	596.68	8.68	8.00	-4.34
6,824.00	54.46	354.31	6,621.30	774.05	344.96	621.66	6.99	6.88	-1.59
6,856.00	56.57	353.71	6,639.42	800.28	342.21	647.38	6.77	6.59	-1.88
6,887.00	58.36	351.94	6,656.09	826.21	338.94	672.98	7.52	5.77	-5.71
6,919.00	60.66	350.89	6,672.33	853.47	334.82	700.12	7.72	7.19	-3.28
6,950.00	63.05	349.46	6,686.95	880.40	330.15	727.11	8.72	7.71	-4.61
6,982.00	64.95	348.18	6,700.98	908.61	324.57	755.62	6.94	5.94	-4.00
7,013.00	66.32	346.89	6,713.77	936.19	318.48	783.69	5.82	4.42	-4.16
7,045.00	68.32	345.48	6,726.11	964.85	311.43	813.10	7.46	6.25	-4.41
7,077.00	70.13	343.89	6,737.46	993.71	303.52	842.96	7.32	5.66	-4.97
7,109.00	72.16	342.09	6,747.80	1,022.66	294.66	873.23	8.28	6.34	-5.63
7,141.00	74.18	341.62	6,757.06	1,051.77	285.12	903.85	6.47	6.31	-1.47
7,173.00	76.22	340.19	6,765.24	1,081.00	275.00	934.79	7.70	6.38	-4.47
7,204.00	78.11	339.98	6,772.12	1,109.42	264.70	965.01	6.13	6.10	-0.68
7,236.00	79.87	337.94	6,778.24	1,138.73	253.43	996.39	8.33	5.50	-6.38
7,268.00	81.16	336.35	6,783.51	1,167.81	241.17	1,027.87	6.35	4.03	-4.97
7,300.00	82.46	334.19	6,788.07	1,196.58	227.92	1,059.37	7.82	4.06	-6.75
7,332.00	84.29	332.86	6,791.76	1,225.03	213.75	1,090.87	7.05	5.72	-4.16
7,364.00	87.55	331.68	6,794.04	1,253.28	198.90	1,122.40	10.83	10.19	-3.69
7,395.00	89.83	330.69	6,794.74	1,280.43	183.96	1,152.91	8.02	7.35	-3.19
7,427.00	90.44	328.99	6,794.67	1,308.10	167.88	1,184.28	5.64	1.91	-5.31
7,490.00	90.37	327.97	6,794.22	1,361.80	134.95	1,245.73	1.62	-0.11	-1.62
7,554.00	91.11	328.31	6,793.40	1,416.15	101.17	1,308.07	1.27	1.16	0.53
7,618.00	91.95	328.51	6,791.69	1,470.65	67.66	1,370.46	1.35	1.31	0.31
7,682.00	92.05	327.01	6,789.45	1,524.75	33.54	1,432.66	2.35	0.16	-2.34
7,745.00	91.62	326.11	6,787.44	1,577.29	-1.16	1,493.58	1.58	-0.68	-1.43
7,809.00	91.51	327.94	6,785.69	1,630.96	-35.98	1,555.61	2.86	-0.17	2.86
7,872.00	92.05	329.85	6,783.73	1,684.87	-68.51	1,617.13	3.15	0.86	3.03
7,936.00	91.95	330.00	6,781.50	1,740.22	-100.56	1,679.85	0.28	-0.16	0.23
8,000.00	91.68	330.63	6,779.47	1,795.79	-132.24	1,742.67	1.07	-0.42	0.98
8,063.00	91.44	330.56	6,777.76	1,850.66	-163.16	1,804.56	0.40	-0.38	-0.11
8,127.00	91.38	330.18	6,776.18	1,906.27	-194.79	1,867.40	0.60	-0.09	-0.59

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STONE ENERGY

Scientific Drilling
Survey Report

Scientific Drilling

Company:	Stone Energy	**Local Co-ordinate Reference:**	Well 7H
Project:	Mary Prospect	**TVD Reference:**	GL 1341' & KB 18' @ 1359.00ft (Saxon 141)
Site:	ZMBG Pad	**MD Reference:**	GL 1341' & KB 18' @ 1359.00ft (Saxon 141)
Well:	7H	**North Reference:**	Grid
Wellbore:	OH	**Survey Calculation Method:**	Minimum Curvature
Design:	7H As Drilled	**Database:**	Northeast District

Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
8,191.00	92.22	329.93	6,774.17	1,961.70	-226.72	1,930.16	1.37	1.31	-0.39
8,255.00	91.82	329.42	6,771.92	2,016.91	-259.02	1,992.83	1.01	-0.63	-0.80
8,318.00	90.50	329.56	6,770.64	2,071.17	-291.00	2,054.51	2.11	-2.10	0.22
8,382.00	90.60	328.75	6,770.03	2,126.12	-323.81	2,117.09	1.28	0.16	-1.27
8,446.00	90.74	330.52	6,769.28	2,181.33	-356.16	2,179.78	2.77	0.22	2.77
8,509.00	90.67	331.03	6,768.50	2,236.31	-386.91	2,241.74	0.82	-0.11	0.81
8,573.00	91.44	330.94	6,767.32	2,292.27	-417.95	2,304.71	1.21	1.20	-0.14
8,637.00	92.02	331.92	6,765.39	2,348.45	-448.54	2,367.75	1.78	0.91	1.53
8,700.00	91.68	332.58	6,763.36	2,404.17	-477.86	2,429.95	1.18	-0.54	1.05
8,763.00	91.41	332.77	6,761.66	2,460.12	-506.77	2,492.23	0.52	-0.43	0.30
8,827.00	92.28	333.40	6,759.60	2,517.16	-535.72	2,555.55	1.68	1.36	0.98
8,890.00	92.39	332.35	6,757.03	2,573.18	-564.42	2,617.84	1.67	0.17	-1.67
8,954.00	92.19	331.29	6,754.47	2,629.55	-594.62	2,680.93	1.68	-0.31	-1.66
9,017.00	91.44	331.84	6,752.48	2,684.92	-624.61	2,743.01	1.48	-1.19	0.87
9,081.00	91.11	331.91	6,751.06	2,741.35	-654.77	2,806.14	0.53	-0.52	0.11
9,144.00	92.08	332.62	6,749.30	2,797.09	-684.08	2,868.35	1.91	1.54	1.13
9,208.00	91.81	331.64	6,747.13	2,853.63	-713.98	2,931.51	1.59	-0.42	-1.53
9,272.00	91.85	330.55	6,745.09	2,909.63	-744.89	2,994.48	1.70	0.06	-1.70
9,335.00	91.91	330.64	6,743.02	2,964.48	-775.81	3,056.37	0.17	0.10	0.14
9,399.00	90.70	330.82	6,741.56	3,020.30	-807.09	3,119.29	1.91	-1.89	0.28
9,462.00	90.84	330.70	6,740.71	3,075.27	-837.86	3,181.24	0.29	0.22	-0.19
9,525.00	91.45	330.49	6,739.46	3,130.14	-868.79	3,243.15	1.02	0.97	-0.33
9,589.00	91.04	330.22	6,738.07	3,185.75	-900.44	3,305.99	0.77	-0.64	-0.42
9,653.00	90.27	330.13	6,737.33	3,241.27	-932.26	3,368.80	1.21	-1.20	-0.14
9,716.00	90.50	330.40	6,736.91	3,295.97	-963.51	3,430.65	0.56	0.37	0.43
9,780.00	91.54	330.91	6,735.77	3,351.75	-994.87	3,493.56	1.81	1.63	0.80
9,843.00	91.61	330.63	6,734.04	3,406.71	-1,025.62	3,555.50	0.46	0.11	-0.44
9,906.00	91.41	329.86	6,732.38	3,461.38	-1,056.88	3,617.32	1.26	-0.32	-1.22
9,970.00	91.21	330.68	6,730.92	3,516.94	-1,088.61	3,680.14	1.32	-0.31	1.28
10,034.00	91.18	331.36	6,729.58	3,572.91	-1,119.61	3,743.12	1.06	-0.05	1.06
10,097.00	91.35	330.94	6,728.19	3,628.08	-1,150.00	3,805.14	0.72	0.27	-0.67
10,161.00	91.04	331.38	6,726.86	3,684.13	-1,180.86	3,868.14	0.84	-0.48	0.69
10,225.00	92.18	331.98	6,725.06	3,740.45	-1,211.21	3,931.23	2.01	1.78	0.94
10,288.00	92.29	331.16	6,722.60	3,795.81	-1,241.18	3,993.30	1.31	0.17	-1.30
10,352.00	91.54	331.70	6,720.46	3,851.98	-1,271.77	4,056.33	1.44	-1.17	0.84
10,416.00	91.81	331.59	6,718.59	3,908.28	-1,302.16	4,119.41	0.46	0.42	-0.17
10,479.00	91.04	331.59	6,717.02	3,963.67	-1,332.12	4,181.51	1.22	-1.22	0.00
10,501.00	91.48	331.45	6,716.54	3,983.01	-1,342.61	4,203.19	2.10	2.00	-0.64
Last SDI MWD Survey									
10,559.00	91.48	331.45	6,715.04	4,033.94	-1,370.32	4,260.33	0.00	0.00	0.00
Projection to Bit									

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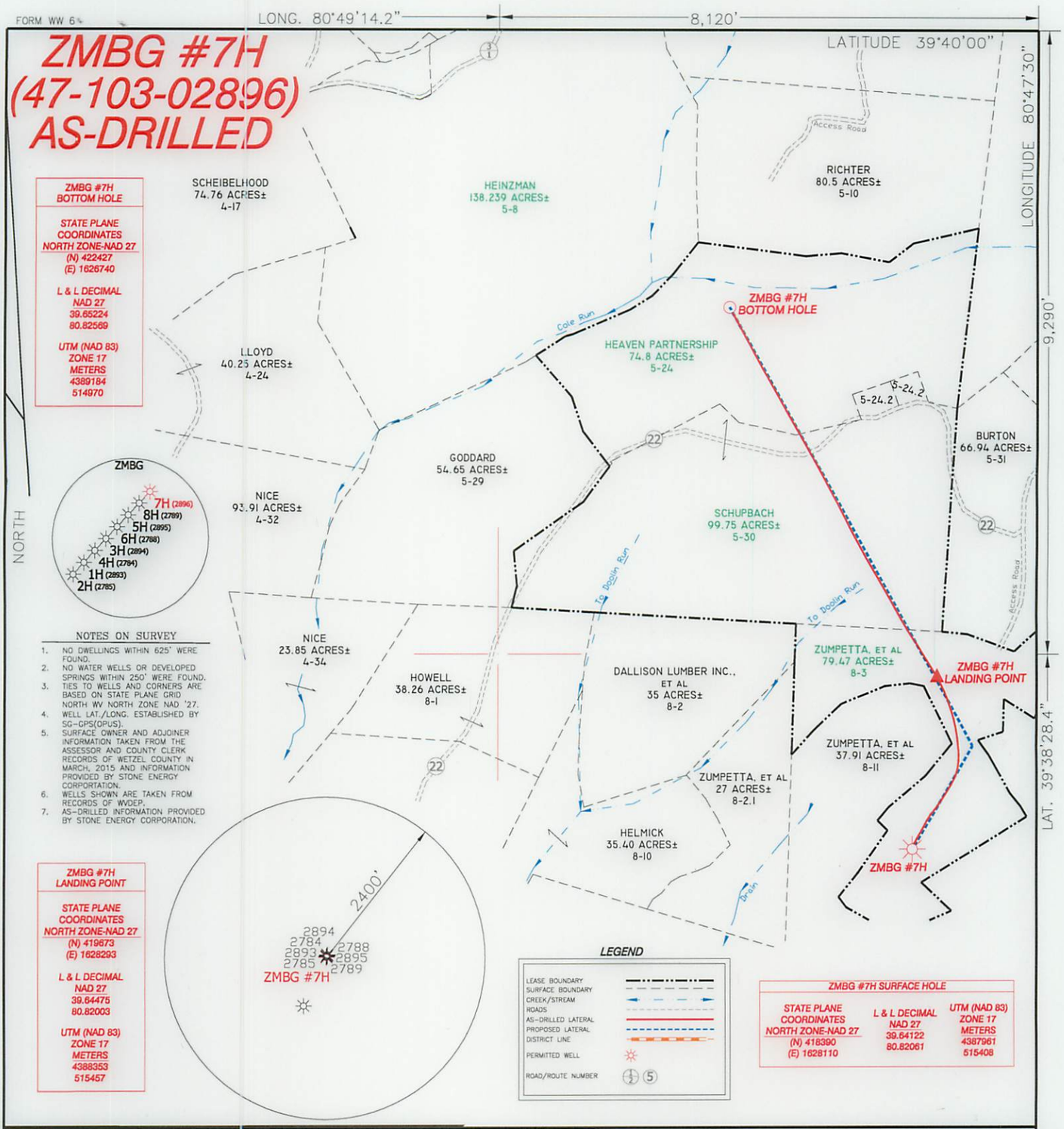
FORM WW 6

ZMBG #7H (47-103-02896) AS-DRILLED



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 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 JULY 15, 20 15

OPERATORS WELL NO. ZMBG #7H

API WELL NO. 47 — 103 — 02896
STATE COUNTY PERMIT

MINIMUM DEGREE OF ACCURACY 1/2500 FILE NO. W2068 (BK 77-29)
SCALE 1" = 1000'
PROVEN SOURCE OF ELEVATION SG-GPS(OPUS)

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 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 254.02±
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 6,715' MD 10,559'

COUNTY NAME
PERMIT

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

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

API 47 - 103 - 03043 County WETZEL District GRANT
Quad BIG RUN 7.5' Pad Name BIG192 Field/Pool Name
Farm name RICHARD DALLISON ET AL Well Number 513920
Operator (as registered with the OOG) EQT Production Company
Address 625 Liberty Ave. EQT Plaza, Suite 1700 City Pittsburgh State PA Zip 15222

As Drilled location NAD 83/UTM Attach an as-drilled plat, profile view, and deviation survey

Top hole	Northing	4,375,409	Easting	535,935
Landing Point of Curve	Northing	4,375,580	Easting	535,837
Bottom Hole	Northing	4,377,627	Easting	535,173

Elevation (ft) 1452 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)
Water base Mud 13.5 ppg barium sulfate, sodium chloride, xanthan gum, polyanionic cellulose, modified starch, sodium hydroxide, phosphonates and alkyl phophates, glutaraldehyde solution, calcium hydroxide, partially hydrolyzed polyacrylamide/polyacrylate, potassium chloride, sodium carbonate, ground walnut shells, alcohol and modified fatty acid, ferrochrome lignosulfonate, calcium carbonate, fibrous cellulose

Date permit issued 12/08/2014 Date drilling commenced 02/05/2015 Date drilling ceased 05/13/2015
Date completion activities began 6/5/2015 Date completion activities ceased 6/17/2015
Verbal plugging (Y/N) N Date permission granted N/A Granted by N/A

Please note: Operator is required to submit a plugging application within 5 days of verbal permission to plug

Freshwater depth(s) ft 549',581',780' Open mine(s) (Y/N) depths N
Salt water depth(s) ft 2257',2370' Void(s) encountered (Y/N) depths N
Coal depth(s) ft 743',804',919',1009',1240' Cavern(s) encountered (Y/N) depths N
Is coal being mined in area (Y/N) N

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API 47- 103 - 03043 Farm name RICHARD DALLISON ET AL Well number 513920

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	28"	26"	50'	NEW	A-500 40LB/FT	NONE	Y
Surface	17.5"	13.375"	1004'	NEW	J-55 54.5LB/FT	668'	Y
Coal							
Intermediate 1	12.375" & 12.25"	9.625"	2749'	NEW	A-500 40LB/FT	2112'	Y
Intermediate 2							
Intermediate 3							
Production	8.5"	5.5"	15,630'	NEW	P-110 20LB/FT	NONE	N
Tubing							
Packer type and depth set							

Comment Details

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	CLASS A	61	15.6	1.18	71.98	0	8
Surface	CLASS A	955	15.6	1.20	972	0	8
Coal							
Intermediate 1	CLASS A / CLASS A	1065	15.6	1.18	1256.7	0	8
Intermediate 2							
Intermediate 3							
Production	CLASS H / CLASS H	720/949	15.2/15.6	1.25/2.06	2855	4,550' MD	72
Tubing							

Drillers TD (ft) 15,630 Loggers TD (ft) N/A

Deepest formation penetrated Marcellus Plug back to (ft) N/A

Plug back procedure N/A

Kick off depth (ft) 6,046

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

CONDUCTOR- NONE

SURFACE- JOINTS: 1,11,20

INTERMEDIATE- RAN AT LEAST EVERY 500' FEET

PRODUCTION- 267 Composite Centralizers. One on every joint from TD to 4,550' MD

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 - 03043 Farm name RICHARD DALLISON ET AL Well number 513920

PERFORATION RECORD

Stage No.	Perforation date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formation(s)
					Please See Attached

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)
						Please	See	Attached

Please insert additional pages as applicable.

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API 47- 103 - 03043 Farm name RICHARD DALLISON ET AL Well number 513920

PRODUCING FORMATION(S)	DEPTHS			
Marcellus	7,633'	TVD	7,973'	MD

Please insert additional pages as applicable.

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

SHUT-IN PRESSURE Surface 1,995 psi Bottom Hole N/A psi DURATION OF TEST 88.5 hrs

OPEN FLOW	Gas	Oil	NGL	Water	GAS MEASURED BY
	10,607 mcfpd	N/A bpd	0 bpd	1326.6 bpd	☐ 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		

Please insert additional pages as applicable.

Drilling Contractor ALPHA HUNTER DRILLING (RIG 6)
Address P.O. BOX 430 City RENO State OH Zip 45773

Logging Company
Address City State Zip

Cementing Company NABORS ENERGY SERVICES
Address 2504 Smith Creek Road City WAYNESBURG State PA Zip 15370

Stimulating Company C&J Energy Services
Address 3990 Rogerdale City Houston State TX Zip 77042

Please insert additional pages as applicable.

Completed by Jim Helmick Telephone 412-395-5518
Signature Title VP Completions Date 9/8/2015

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

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API 47- 103 - 03043 Farm name RICHARD DALLISON ET AL Well number 513920

Drilling Contractor Savanna Drilling
Address 2204 Timberloch Place Suite 230 City Woodlands State TX Zip 77380

Logging Company GYRODATA
Address 601 MAYER ST City BRIDGEVILLE State PA Zip 15017

Logging Company _____
Address _____ City _____ State _____ Zip _____

Cementing Company Baker Hughes
Address 837 Philippi Pike City Clarksburgh State WV Zip 26301

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API 47 - 103 - 03043

Formation Name	Final Top MD (ftGL) (ft)	Final Top TVD (ft)	Final Btm MD (ftGL) (ft)	Final Btm TVD (ft)
FRESH WATER ZONE	0	0	783	783
SAND/SHALE	0	0	746	746
WASHIGNTON COAL	746	746	748	748
SAND/SHALE	748	748	807	807
COAL	807	807	817	817
SAND/SHALE	817	817	922	922
COAL	922	922	927	927
SAND/SHALE	927	927	1,012	1,012
COAL	1,012	1,012	1,022	1,022
SAND/SHALE	1,022	1,022	1,243	1,243
PITTSBURGH COAL	1,243	1,243	1,248	1,248
SAND/SHALE	1,248	1,248	2,444	2,444
MAXTON	2,444	2,444	2,484	2,484
BIG LIME	2,484	2,484	2,623	2,623
BIG INJUN	2,623	2,623	2,874	2,874
WEIR	2,874	2,874	3,082	3,082
GANTZ	3,082	3,082	3,108	3,108
50F	3,108	3,108	3,193	3,193
30F	3,193	3,193	3,310	3,310
GORDON	3,310	3,310	3,390	3,390
4TH	3,390	3,390	3,539	3,539
BAYARD	3,539	3,539	3,965	3,965
WARREN	3,965	3,965	4,117	4,117
SPEECHLEY	4,117	4,117	5,006	5,005
RILEY	5,006	5,005	5,641	5,640
BENSON	5,641	5,640	5,967	5,966
ALEXANDER	5,967	5,966	6,546	6,494
RHINESTREET	6,546	6,494	7,334	7,198
SONYEA	7,334	7,198	7,511	7,359
MIDDLESEX	7,511	7,359	7,577	7,414
GENESSEE	7,577	7,414	7,692	7,501
GENESEO	7,692	7,501	7,731	7,527
TULLY	7,731	7,527	7,766	7,548
HAMILTON	7,766	7,548	7,973	7,633
MARCELLUS	7,973	7,633	15,630	7,654

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API 47 - 103 - 03043

PHOENIX
TECHNOLOGY SERVICES

EQT Production - Marcellus

Wetzel County, WV
Wetzel County 513920
Well 513920

Main Wellbore

Design: 513920 As Drilled Surveys

Standard Survey Report

11 May, 2015

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EQT
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PHOENIX TECHNOLOGY SERVICES 103-03043

PHX
Survey Report

EQT Where energy meets innovation.

Database:	EDM 5000.1 Single User Db	**Local Co-ordinate Reference:**	Site Wetzel County 513920
Company:	EQT Production - Marcellus	**TVD Reference:**	KB@16 @ 1468.0usft
Project:	Wetzel County, WV	**MD Reference:**	KB@16 @ 1468.0usft
Site:	Wetzel County 513920	**North Reference:**	Grid
Well:	Well 513920	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Main Wellbore		
Design:	513920 As Drilled Surveys		

Project: Wetzel County, WV

Map System:	US State Plane 1927 (Exact solution)	**System Datum:**	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	West Virginia North 4701		Using geodetic scale factor

Site: Wetzel County 513920

Site Position:		**Northing:**	376,073.40 usft	**Latitude:**	39.53
From:	Map	**Easting:**	1,694,783.40 usft	**Longitude:**	-80.58
Position Uncertainty:	0.0 usft	**Slot Radius:**	13-3/16 "	**Grid Convergence:**	-0.69 °

Well: Well 513920

Well Position	**+N/-S**	0.0 usft	**Northing:**	376,073.40 usft	**Latitude:**	39° 31' 38.983 N
	+E/-W	0.0 usft	**Easting:**	1,694,783.40 usft	**Longitude:**	80° 34' 55.433 W
Position Uncertainty		0.0 usft	**Wellhead Elevation:**	usft	**Ground Level:**	1,452.0 usft

Wellbore: Main Wellbore

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	4/13/2015	-8.32	67.07	52,545

Design: 513920 As Drilled Surveys

Audit Notes:

Version:	1.0	**Phase:**	ACTUAL	**Tie On Depth:**	0.0

Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.0	0.0	0.0	342.00

Survey Program Date 5/11/2015

From ()	To (usft)	Survey (Wellbore)	Tool Name	Description
0.00	5,995.0	513920 Gyrodata Gyros (Main Wellbore)	GYD_DP_MS	Gyrodata gyro-compassing and drop
0.00	15,630.0	513920 PHX MWD (Main Wellbore)	PHX+MWD+HDGM	PHX+OWSG MWD + HDGM

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	Subsea Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.0	0.00	0.00	0.0	-1,468.0	0.0	0.0	0.0	0.00	0.00	0.00
103.0	0.04	81.78	103.0	-1,365.0	0.0	0.0	0.0	0.04	0.04	0.00
203.0	0.05	313.60	203.0	-1,265.0	0.0	0.0	0.0	0.08	0.01	-128.18
303.0	0.18	255.10	303.0	-1,165.0	0.0	-0.1	0.1	0.16	0.13	-58.50
403.0	0.22	223.00	403.0	-1,065.0	-0.2	-0.4	0.0	0.12	0.04	-32.10
503.0	0.07	224.33	503.0	-965.0	-0.3	-0.6	-0.1	0.15	-0.15	1.33
603.0	0.10	164.75	603.0	-865.0	-0.5	-0.6	-0.2	0.09	0.03	-59.58
703.0	0.08	137.86	703.0	-765.0	-0.6	-0.6	-0.4	0.05	-0.02	-26.89

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Database:	EDM 5000.1 Single User Db	**Local Co-ordinate Reference:**	Site Wetzel County 513920
Company:	EQT Production - Marcellus	**TVD Reference:**	KB@16 @ 1468.0usft
Project:	Wetzel County, WV	**MD Reference:**	KB@16 @ 1468.0usft
Site:	Wetzel County 513920	**North Reference:**	Grid
Well:	Well 513920	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Main Wellbore		
Design:	513920 As Drilled Surveys		

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	Subsea Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
803.0	0.09	151.79	803.0	-665.0	-0.7	-0.5	-0.5	0.02	0.01	13.93
903.0	0.08	332.70	903.0	-565.0	-0.7	-0.5	-0.5	0.17	-0.01	-179.09
1,003.0	0.22	335.68	1,003.0	-465.0	-0.5	-0.6	-0.3	0.14	0.14	2.98
1,103.0	0.51	346.09	1,103.0	-365.0	0.1	-0.8	0.3	0.30	0.29	10.41
1,203.0	0.59	351.03	1,203.0	-265.0	1.1	-0.9	1.3	0.09	0.08	4.94
1,303.0	0.65	351.05	1,303.0	-165.0	2.1	-1.1	2.4	0.06	0.06	0.02
1,403.0	0.53	350.81	1,403.0	-65.0	3.1	-1.3	3.4	0.12	-0.12	-0.24
1,503.0	0.57	3.15	1,503.0	35.0	4.1	-1.3	4.3	0.12	0.04	12.34
1,603.0	0.59	358.32	1,603.0	135.0	5.1	-1.3	5.3	0.05	0.02	-4.83
1,703.0	0.56	358.30	1,703.0	235.0	6.1	-1.3	6.2	0.03	-0.03	-0.02
1,803.0	0.60	9.14	1,803.0	335.0	7.1	-1.3	7.2	0.12	0.04	10.84
1,903.0	0.69	2.68	1,903.0	435.0	8.2	-1.2	8.2	0.12	0.09	-6.46
2,003.0	0.53	2.75	2,002.9	534.9	9.3	-1.1	9.2	0.16	-0.16	0.07
2,103.0	0.52	5.78	2,102.9	634.9	10.2	-1.0	10.0	0.03	-0.01	3.03
2,203.0	0.61	5.76	2,202.9	734.9	11.2	-0.9	10.9	0.09	0.09	-0.02
2,303.0	0.81	348.58	2,302.9	834.9	12.4	-1.0	12.1	0.29	0.20	-17.18
2,403.0	1.24	334.48	2,402.9	934.9	14.1	-1.6	13.9	0.50	0.43	-14.10
2,503.0	1.81	330.55	2,502.9	1,034.9	16.4	-2.9	16.5	0.58	0.57	-3.93
2,603.0	2.16	333.58	2,602.8	1,134.8	19.5	-4.5	19.9	0.37	0.35	3.03
2,703.0	2.35	336.18	2,702.7	1,234.7	23.1	-6.2	23.8	0.22	0.19	2.60
2,803.0	2.39	335.42	2,802.7	1,334.7	26.8	-7.9	27.9	0.05	0.04	-0.76
2,903.0	1.90	333.42	2,902.6	1,434.6	30.2	-9.5	31.7	0.50	-0.49	-2.00
3,003.0	1.42	327.70	3,002.5	1,534.5	32.7	-10.9	34.5	0.51	-0.48	-5.72
3,103.0	0.94	325.05	3,102.5	1,634.5	34.5	-12.0	36.5	0.48	-0.48	-2.65
3,203.0	0.80	318.54	3,202.5	1,734.5	35.7	-12.9	37.9	0.17	-0.14	-6.51
3,303.0	0.49	323.72	3,302.5	1,834.5	36.5	-13.6	39.0	0.32	-0.31	5.18
3,403.0	0.46	317.44	3,402.5	1,934.5	37.2	-14.2	39.7	0.06	-0.03	-6.28
3,503.0	0.43	319.58	3,502.5	2,034.5	37.7	-14.7	40.4	0.03	-0.03	2.14
3,603.0	0.43	325.62	3,602.5	2,134.5	38.3	-15.1	41.1	0.05	0.00	6.04
3,703.0	0.48	326.95	3,702.5	2,234.5	39.0	-15.6	41.9	0.05	0.05	1.33
3,803.0	0.47	325.04	3,802.5	2,334.5	39.7	-16.0	42.7	0.02	-0.01	-1.91
3,903.0	0.49	326.59	3,902.5	2,434.5	40.4	-16.5	43.5	0.02	0.02	1.55
4,003.0	0.44	319.06	4,002.5	2,534.5	41.0	-17.0	44.3	0.08	-0.05	-7.53
4,103.0	0.43	320.65	4,102.5	2,634.5	41.6	-17.5	45.0	0.02	-0.01	1.59
4,203.0	0.31	294.14	4,202.5	2,734.5	42.0	-18.0	45.5	0.21	-0.12	-26.51
4,303.0	0.32	296.16	4,302.5	2,834.5	42.2	-18.5	45.9	0.01	0.01	2.02
4,403.0	0.34	294.57	4,402.5	2,934.5	42.5	-19.0	46.3	0.02	0.02	-1.59
4,503.0	0.44	292.24	4,502.5	3,034.5	42.8	-19.6	46.7	0.10	0.10	-2.33
4,603.0	0.56	288.73	4,602.5	3,134.5	43.1	-20.4	47.3	0.12	0.12	-3.51
4,703.0	0.59	288.51	4,702.5	3,234.5	43.4	-21.4	47.9	0.03	0.03	-0.22
4,803.0	0.65	287.00	4,802.5	3,334.5	43.7	-22.4	48.5	0.06	0.06	-1.51
4,903.0	0.61	290.81	4,902.5	3,434.5	44.1	-23.5	49.2	0.06	-0.04	3.81

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Database:	EDM 5000.1 Single User Db	**Local Co-ordinate Reference:**	Site Wetzel County 513920
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Project:	Wetzel County, WV	**MD Reference:**	KB@16 @ 1468.0usft
Site:	Wetzel County 513920	**North Reference:**	Grid
Well:	Well 513920	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Main Wellbore		
Design:	513920 As Drilled Surveys		

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	Subsea Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
5,003.0	0.68	290.96	5,002.4	3,534.4	44.5	-24.5	49.9	0.07	0.07	0.15
5,103.0	0.67	287.12	5,102.4	3,634.4	44.9	-25.6	50.6	0.05	-0.01	-3.84
5,203.0	0.66	286.41	5,202.4	3,734.4	45.2	-26.7	51.2	0.01	-0.01	-0.71
5,303.0	0.70	287.64	5,302.4	3,834.4	45.5	-27.9	51.9	0.04	0.04	1.23
5,403.0	0.74	286.48	5,402.4	3,934.4	45.9	-29.1	52.6	0.04	0.04	-1.16
5,503.0	0.60	299.66	5,502.4	4,034.4	46.3	-30.1	53.4	0.21	-0.14	13.18
5,603.0	0.60	306.86	5,602.4	4,134.4	46.9	-31.0	54.2	0.08	0.00	7.20
5,703.0	0.66	300.07	5,702.4	4,234.4	47.5	-31.9	55.1	0.10	0.06	-6.79
5,803.0	0.76	294.92	5,802.4	4,334.4	48.1	-33.0	55.9	0.12	0.10	-5.15
5,903.0	0.77	296.94	5,902.4	4,434.4	48.7	-34.2	56.9	0.03	0.01	2.02
Gyro Tie In=5995' MD										
5,995.0	0.94	290.82	5,994.4	4,526.4	49.2	-35.5	57.8	0.21	0.18	-6.65
6,014.0	1.10	298.30	6,013.4	4,545.4	49.4	-35.8	58.0	1.09	0.84	39.37
KOP=6046' MD										
6,046.0	1.90	184.90	6,045.4	4,577.4	49.0	-36.1	57.7	7.95	2.50	-354.38
6,078.0	6.40	168.00	6,077.3	4,609.3	46.7	-35.8	55.5	14.42	14.06	-52.81
6,109.0	9.50	163.80	6,108.0	4,640.0	42.6	-34.7	51.2	10.17	10.00	-13.55
6,141.0	11.60	162.40	6,139.4	4,671.4	37.0	-33.0	45.3	6.61	6.56	-4.38
6,172.0	13.80	163.80	6,169.7	4,701.7	30.4	-31.0	38.5	7.17	7.10	4.52
6,204.0	16.70	165.40	6,200.5	4,732.5	22.3	-28.8	30.1	9.16	9.06	5.00
6,235.0	19.40	166.40	6,230.0	4,762.0	13.0	-26.5	20.5	8.77	8.71	3.23
6,267.0	21.60	166.10	6,260.0	4,792.0	2.1	-23.8	9.4	6.88	6.88	-0.94
6,298.0	24.20	166.20	6,288.5	4,820.5	-9.6	-20.9	-2.7	8.39	8.39	0.32
6,330.0	26.90	166.00	6,317.4	4,849.4	-23.0	-17.6	-16.4	8.44	8.44	-0.63
6,361.0	29.90	166.00	6,344.7	4,876.7	-37.3	-14.0	-31.1	9.68	9.68	0.00
6,393.0	32.30	166.00	6,372.1	4,904.1	-53.3	-10.0	-47.6	7.50	7.50	0.00
6,425.0	35.10	166.70	6,398.7	4,930.7	-70.6	-5.9	-65.3	8.83	8.75	2.19
6,456.0	38.20	168.00	6,423.6	4,955.6	-88.6	-1.8	-83.7	10.31	10.00	4.19
6,488.0	39.00	168.80	6,448.6	4,980.6	-108.2	2.2	-103.6	2.95	2.50	2.50
6,519.0	38.80	168.10	6,472.7	5,004.7	-127.3	6.1	-122.9	1.56	-0.65	-2.26
6,551.0	40.00	165.40	6,497.4	5,029.4	-147.0	10.8	-143.2	6.54	3.75	-8.44
6,583.0	42.00	163.80	6,521.6	5,053.6	-167.3	16.3	-164.1	7.06	6.25	-5.00
6,614.0	42.10	163.10	6,544.6	5,076.6	-187.2	22.3	-184.9	1.55	0.32	-2.26
6,645.0	41.20	163.70	6,567.8	5,099.8	-206.9	28.1	-205.5	3.18	-2.90	1.94
6,677.0	40.80	166.60	6,591.9	5,123.9	-227.2	33.5	-226.4	6.08	-1.25	9.06
6,709.0	40.50	169.70	6,616.2	5,148.2	-247.6	37.8	-247.2	6.38	-0.94	9.69
6,740.0	38.90	170.30	6,640.0	5,172.0	-267.1	41.2	-266.8	5.31	-5.16	1.94
6,772.0	36.00	168.90	6,665.4	5,197.4	-286.2	44.7	-286.0	9.44	-9.06	-4.38
6,803.0	32.40	169.00	6,691.1	5,223.1	-303.3	48.1	-303.3	11.61	-11.61	0.32
6,835.0	29.20	169.40	6,718.6	5,250.6	-319.4	51.2	-319.6	10.02	-10.00	1.25
6,866.0	27.00	169.30	6,745.9	5,277.9	-333.8	53.9	-334.1	7.10	-7.10	-0.32
6,898.0	23.80	169.70	6,774.8	5,306.8	-347.3	56.4	-347.7	10.01	-10.00	1.25
6,930.0	20.70	171.90	6,804.4	5,336.4	-359.2	58.3	-359.7	10.03	-9.69	6.88

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Company:	EQT Production - Marcellus	**TVD Reference:**	KB@16 @ 1468.0usft
Project:	Wetzel County, WV	**MD Reference:**	KB@16 @ 1468.0usft
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Well:	Well 513920	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Main Wellbore		
Design:	513920 As Drilled Surveys		

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	Subsea Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
6,961.0	18.20	171.80	6,833.6	5,365.6	-369.4	59.8	-369.8	8.07	-8.06	-0.32
6,993.0	15.90	173.90	6,864.2	5,396.2	-378.7	61.0	-379.0	7.44	-7.19	6.56
7,024.0	13.70	179.30	6,894.2	5,426.2	-386.6	61.4	-386.7	8.37	-7.10	17.42
7,056.0	11.40	187.50	6,925.4	5,457.4	-393.6	61.1	-393.2	9.08	-7.19	25.63
7,087.0	9.70	198.40	6,955.9	5,487.9	-399.1	59.9	-398.0	8.43	-5.48	35.16
7,119.0	8.40	213.90	6,987.5	5,519.5	-403.6	57.7	-401.7	8.60	-4.06	48.44
7,151.0	8.20	236.80	7,019.2	5,551.2	-406.8	54.5	-403.7	10.28	-0.63	71.56
7,182.0	9.10	259.80	7,049.9	5,581.9	-408.4	50.2	-403.9	11.44	2.90	74.19
7,214.0	11.70	275.60	7,081.3	5,613.3	-408.5	44.5	-402.3	11.99	8.13	49.38
7,245.0	12.50	293.10	7,111.7	5,643.7	-406.9	38.3	-398.8	12.06	2.58	56.45
7,277.0	12.60	310.60	7,142.9	5,674.9	-403.3	32.4	-393.6	11.84	0.31	54.69
7,308.0	15.30	315.10	7,173.0	5,705.0	-398.2	27.0	-387.0	9.38	8.71	14.52
7,340.0	19.00	316.70	7,203.6	5,735.6	-391.4	20.4	-378.6	11.66	11.56	5.00
7,372.0	20.80	325.00	7,233.7	5,765.7	-383.0	13.6	-368.4	10.46	5.63	25.94
7,403.0	22.10	327.80	7,262.5	5,794.5	-373.5	7.3	-357.5	5.34	4.19	9.03
7,435.0	24.60	328.70	7,291.9	5,823.9	-362.7	0.7	-345.2	7.89	7.81	2.81
7,466.0	27.60	328.50	7,319.7	5,851.7	-351.1	-6.4	-331.9	9.68	9.68	-0.65
7,498.0	30.20	329.70	7,347.7	5,879.7	-337.8	-14.4	-316.8	8.32	8.13	3.75
7,530.0	31.70	331.90	7,375.2	5,907.2	-323.5	-22.4	-300.7	5.87	4.69	6.88
7,561.0	34.00	334.40	7,401.2	5,933.2	-308.5	-30.0	-284.1	8.61	7.42	8.06
7,593.0	36.50	335.50	7,427.3	5,959.3	-291.7	-37.8	-265.8	8.06	7.81	3.44
7,624.0	40.30	336.40	7,451.6	5,983.6	-274.1	-45.6	-246.6	12.39	12.26	2.90
7,656.0	43.20	336.70	7,475.5	6,007.5	-254.6	-54.1	-225.4	9.08	9.06	0.94
7,687.0	46.70	337.30	7,497.4	6,029.4	-234.4	-62.7	-203.6	11.37	11.29	1.94
7,719.0	49.60	338.70	7,518.8	6,050.8	-212.3	-71.6	-179.8	9.63	9.06	4.38
7,750.0	53.20	339.40	7,538.1	6,070.1	-189.7	-80.2	-155.6	11.75	11.61	2.26
7,782.0	56.60	340.00	7,556.5	6,088.5	-165.2	-89.3	-129.5	10.74	10.63	1.88
7,814.0	60.30	341.20	7,573.3	6,105.3	-139.4	-98.4	-102.2	12.00	11.56	3.75
7,845.0	63.20	342.90	7,587.9	6,119.9	-113.5	-106.8	-74.9	10.53	9.35	5.48
7,877.0	66.00	344.30	7,601.7	6,133.7	-85.7	-114.9	-46.0	9.60	8.75	4.38
7,908.0	68.90	344.70	7,613.6	6,145.6	-58.1	-122.6	-17.4	9.43	9.35	1.29
7,939.0	72.30	344.60	7,623.9	6,155.9	-30.0	-130.3	11.8	10.97	10.97	-0.32
7,971.0	75.30	344.30	7,632.8	6,164.8	-0.4	-138.6	42.5	9.42	9.38	-0.94
8,003.0	77.50	343.60	7,640.3	6,172.3	29.5	-147.2	73.6	7.20	6.88	-2.19
8,034.0	80.40	342.70	7,646.2	6,178.2	58.6	-156.0	104.0	9.78	9.35	-2.90
8,066.0	85.20	342.70	7,650.3	6,182.3	89.0	-165.4	135.7	15.00	15.00	0.00
LP=8097' MD/ 7652' TVD										
8,097.0	89.00	343.00	7,651.8	6,183.8	118.5	-174.5	166.7	12.30	12.26	0.97
8,150.0	89.60	342.40	7,652.5	6,184.5	169.1	-190.3	219.7	1.60	1.13	-1.13
8,214.0	89.30	341.00	7,653.1	6,185.1	229.9	-210.4	283.7	2.24	-0.47	-2.19
8,276.0	89.40	341.70	7,653.8	6,185.8	288.6	-230.2	345.7	1.14	0.16	1.13
Deepest Point of WEll=8340' MD/ 7654' TVD										
8,340.0	90.40	342.30	7,653.9	6,185.9	349.5	-250.0	409.6	1.82	1.56	0.94

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Database:	EDM 5000.1 Single User Db	**Local Co-ordinate Reference:**	Site Wetzel County 513920
Company:	EQT Production - Marcellus	**TVD Reference:**	KB@16 @ 1468.0usft
Project:	Wetzel County, WV	**MD Reference:**	KB@16 @ 1468.0usft
Site:	Wetzel County 513920	**North Reference:**	Grid
Well:	Well 513920	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Main Wellbore		
Design:	513920 As Drilled Surveys		

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	Subsea Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
8,403.0	91.30	341.70	7,653.0	6,185.0	409.4	-269.5	472.6	1.72	1.43	-0.95
8,466.0	91.70	341.20	7,651.3	6,183.3	469.1	-289.5	535.6	1.02	0.63	-0.79
8,529.0	91.80	341.70	7,649.4	6,181.4	528.8	-309.5	598.6	0.81	0.16	0.79
8,592.0	91.50	343.70	7,647.6	6,179.6	588.9	-328.3	661.6	3.21	-0.48	3.17
8,655.0	91.40	343.60	7,646.0	6,178.0	649.4	-346.0	724.5	0.22	-0.16	-0.16
8,719.0	90.60	344.20	7,644.9	6,176.9	710.8	-363.7	788.5	1.56	-1.25	0.94
8,782.0	90.20	345.00	7,644.4	6,176.4	771.6	-380.5	851.4	1.42	-0.63	1.27
8,845.0	90.10	343.80	7,644.3	6,176.3	832.3	-397.4	914.3	1.91	-0.16	-1.90
8,908.0	90.10	343.50	7,644.1	6,176.1	892.7	-415.1	977.3	0.48	0.00	-0.48
8,971.0	90.00	343.00	7,644.1	6,176.1	953.0	-433.3	1,040.3	0.81	-0.16	-0.79
9,034.0	89.90	342.10	7,644.1	6,176.1	1,013.1	-452.2	1,103.3	1.44	-0.16	-1.43
9,097.0	90.80	343.60	7,643.8	6,175.8	1,073.3	-470.8	1,166.3	2.78	1.43	2.38
9,160.0	91.20	344.00	7,642.7	6,174.7	1,133.8	-488.3	1,229.2	0.90	0.63	0.63
9,223.0	91.00	342.40	7,641.5	6,173.5	1,194.1	-506.5	1,292.2	2.56	-0.32	-2.54
9,287.0	90.40	342.80	7,640.7	6,172.7	1,255.2	-525.7	1,356.2	1.13	-0.94	0.63
9,349.0	90.30	343.20	7,640.3	6,172.3	1,314.5	-543.8	1,418.2	0.67	-0.16	0.65
9,413.0	90.10	342.30	7,640.1	6,172.1	1,375.6	-562.8	1,482.2	1.44	-0.31	-1.41
9,476.0	89.80	342.60	7,640.1	6,172.1	1,435.7	-581.8	1,545.2	0.67	-0.48	0.48
9,539.0	89.50	341.70	7,640.5	6,172.5	1,495.6	-601.1	1,608.2	1.51	-0.48	-1.43
9,602.0	90.50	342.80	7,640.5	6,172.5	1,555.6	-620.3	1,671.2	2.36	1.59	1.75
9,665.0	90.90	343.80	7,639.7	6,171.7	1,616.0	-638.4	1,734.2	1.71	0.63	1.59
9,728.0	91.00	343.80	7,638.7	6,170.7	1,676.5	-656.0	1,797.1	0.16	0.16	0.00
9,791.0	90.60	343.40	7,637.8	6,169.8	1,736.9	-673.8	1,860.1	0.90	-0.63	-0.63
9,854.0	90.40	343.30	7,637.3	6,169.3	1,797.2	-691.8	1,923.1	0.35	-0.32	-0.16
9,917.0	90.30	343.10	7,636.9	6,168.9	1,857.5	-710.0	1,986.0	0.35	-0.16	-0.32
9,980.0	89.90	342.30	7,636.8	6,168.8	1,917.7	-728.8	2,049.0	1.42	-0.63	-1.27
10,043.0	89.50	341.40	7,637.1	6,169.1	1,977.6	-748.4	2,112.0	1.56	-0.63	-1.43
10,106.0	89.60	341.50	7,637.6	6,169.6	2,037.3	-768.4	2,175.0	0.22	0.16	0.16
10,169.0	90.10	341.00	7,637.8	6,169.8	2,096.9	-788.7	2,238.0	1.12	0.79	-0.79
10,232.0	91.20	342.90	7,637.0	6,169.0	2,156.8	-808.2	2,301.0	3.48	1.75	3.02
10,296.0	91.70	343.60	7,635.4	6,167.4	2,218.1	-826.6	2,365.0	1.34	0.78	1.09
10,358.0	91.80	344.80	7,633.5	6,165.5	2,277.7	-843.5	2,426.9	1.94	0.16	1.94
10,421.0	90.50	344.90	7,632.3	6,164.3	2,338.5	-860.0	2,489.8	2.07	-2.06	0.16
10,484.0	90.10	344.20	7,631.9	6,163.9	2,399.2	-876.7	2,552.8	1.28	-0.63	-1.11
10,548.0	89.90	344.00	7,631.9	6,163.9	2,460.8	-894.3	2,616.7	0.44	-0.31	-0.31
10,611.0	89.70	343.70	7,632.2	6,164.2	2,521.3	-911.8	2,679.7	0.57	-0.32	-0.48
10,674.0	89.30	343.80	7,632.7	6,164.7	2,581.8	-929.4	2,742.6	0.65	-0.63	-0.16
10,737.0	88.90	343.30	7,633.7	6,165.7	2,642.2	-947.3	2,805.6	1.02	-0.63	-0.79
10,800.0	89.50	344.20	7,634.6	6,166.6	2,702.7	-964.9	2,868.6	1.72	0.95	1.43
10,863.0	90.00	344.60	7,634.9	6,166.9	2,763.4	-981.8	2,931.5	1.02	0.79	0.63
10,926.0	89.90	343.00	7,634.9	6,166.9	2,823.9	-999.4	2,994.5	2.54	-0.16	-2.54
10,990.0	89.80	342.10	7,635.1	6,167.1	2,884.9	-1,018.6	3,058.5	1.41	-0.16	-1.41
11,053.0	90.60	342.10	7,634.9	6,166.9	2,944.9	-1,038.0	3,121.5	1.27	1.27	0.00

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Project:	Wetzel County, WV	**MD Reference:**	KB@16 @ 1468.0usft
Site:	Wetzel County 513920	**North Reference:**	Grid
Well:	Well 513920	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Main Wellbore		
Design:	513920 As Drilled Surveys		

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	Subsea Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
11,116.0	91.40	341.80	7,633.8	6,165.8	3,004.8	-1,057.5	3,184.5	1.36	1.27	-0.48
11,179.0	91.20	342.00	7,632.3	6,164.3	3,064.6	-1,077.1	3,247.5	0.45	-0.32	0.32
11,243.0	90.70	341.60	7,631.3	6,163.3	3,125.4	-1,097.0	3,311.4	1.00	-0.78	-0.63
11,306.0	90.40	341.50	7,630.7	6,162.7	3,185.2	-1,117.0	3,374.4	0.50	-0.48	-0.16
11,369.0	90.00	342.00	7,630.4	6,162.4	3,245.0	-1,136.7	3,437.4	1.02	-0.63	0.79
11,432.0	89.70	341.20	7,630.6	6,162.6	3,304.8	-1,156.6	3,500.4	1.36	-0.48	-1.27
11,495.0	90.90	342.30	7,630.3	6,162.3	3,364.6	-1,176.3	3,563.4	2.58	1.90	1.75
11,558.0	91.20	343.00	7,629.1	6,161.1	3,424.7	-1,195.1	3,626.4	1.21	0.48	1.11
11,621.0	91.00	343.10	7,627.9	6,159.9	3,485.0	-1,213.5	3,689.4	0.35	-0.32	0.16
11,684.0	90.60	342.90	7,627.0	6,159.0	3,545.2	-1,231.9	3,752.4	0.71	-0.63	-0.32
11,747.0	90.30	342.30	7,626.5	6,158.5	3,605.3	-1,250.7	3,815.4	1.06	-0.48	-0.95
11,810.0	90.10	342.10	7,626.3	6,158.3	3,665.3	-1,270.0	3,878.4	0.45	-0.32	-0.32
11,873.0	89.40	343.10	7,626.6	6,158.6	3,725.4	-1,288.8	3,941.4	1.94	-1.11	1.59
11,936.0	89.70	343.30	7,627.1	6,159.1	3,785.7	-1,307.0	4,004.4	0.57	0.48	0.32
12,000.0	89.20	342.70	7,627.7	6,159.7	3,846.9	-1,325.7	4,068.3	1.22	-0.78	-0.94
12,063.0	90.40	344.10	7,627.9	6,159.9	3,907.3	-1,343.7	4,131.3	2.93	1.90	2.22
12,125.0	91.10	344.30	7,627.1	6,159.1	3,967.0	-1,360.6	4,193.3	1.17	1.13	0.32
12,188.0	91.00	343.60	7,626.0	6,158.0	4,027.5	-1,378.0	4,256.2	1.12	-0.16	-1.11
12,251.0	91.40	342.60	7,624.6	6,156.6	4,087.8	-1,396.3	4,319.2	1.71	0.63	-1.59
12,315.0	91.60	341.20	7,623.0	6,155.0	4,148.6	-1,416.2	4,383.2	2.21	0.31	-2.19
12,378.0	91.80	342.50	7,621.1	6,153.1	4,208.4	-1,435.8	4,446.1	2.09	0.32	2.06
12,441.0	91.60	342.40	7,619.2	6,151.2	4,268.5	-1,454.8	4,509.1	0.35	-0.32	-0.16
12,504.0	90.20	343.60	7,618.2	6,150.2	4,328.7	-1,473.2	4,572.1	2.93	-2.22	1.90
12,567.0	90.20	343.60	7,618.0	6,150.0	4,389.1	-1,491.0	4,635.1	0.00	0.00	0.00
12,630.0	90.30	342.60	7,617.7	6,149.7	4,449.4	-1,509.3	4,698.1	1.60	0.16	-1.59
12,693.0	90.60	343.20	7,617.2	6,149.2	4,509.6	-1,527.9	4,761.0	1.06	0.48	0.95
12,756.0	90.40	344.00	7,616.7	6,148.7	4,570.1	-1,545.6	4,824.0	1.31	-0.32	1.27
12,819.0	90.40	344.20	7,616.3	6,148.3	4,630.6	-1,562.9	4,887.0	0.32	0.00	0.32
12,883.0	90.20	342.90	7,615.9	6,147.9	4,692.0	-1,581.0	4,950.9	2.06	-0.31	-2.03
12,946.0	90.20	343.50	7,615.7	6,147.7	4,752.3	-1,599.2	5,013.9	0.95	0.00	0.95
13,009.0	89.90	342.40	7,615.6	6,147.6	4,812.6	-1,617.7	5,076.9	1.81	-0.48	-1.75
13,073.0	90.20	343.30	7,615.6	6,147.6	4,873.7	-1,636.6	5,140.9	1.48	0.47	1.41
13,137.0	90.20	343.10	7,615.4	6,147.4	4,935.0	-1,655.1	5,204.9	0.31	0.00	-0.31
13,200.0	89.90	341.80	7,615.3	6,147.3	4,995.0	-1,674.1	5,267.9	2.12	-0.48	-2.06
13,264.0	89.90	341.60	7,615.4	6,147.4	5,055.8	-1,694.2	5,331.9	0.31	0.00	-0.31
13,327.0	90.00	342.60	7,615.5	6,147.5	5,115.8	-1,713.5	5,394.9	1.60	0.16	1.59
13,391.0	90.10	343.40	7,615.4	6,147.4	5,177.0	-1,732.2	5,458.9	1.26	0.16	1.25
13,454.0	90.10	342.60	7,615.3	6,147.3	5,237.2	-1,750.7	5,521.9	1.27	0.00	-1.27
13,518.0	91.20	344.20	7,614.6	6,146.6	5,298.5	-1,768.9	5,585.8	3.03	1.72	2.50
13,581.0	91.80	343.90	7,612.9	6,144.9	5,359.1	-1,786.3	5,648.8	1.06	0.95	-0.48
13,645.0	92.10	344.00	7,610.8	6,142.8	5,420.6	-1,803.9	5,712.7	0.49	0.47	0.16
13,708.0	90.90	343.20	7,609.1	6,141.1	5,481.0	-1,821.7	5,775.7	2.29	-1.90	-1.27

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Company:	EQT Production - Marcellus	**TVD Reference:**	KB@16 @ 1468.0usft
Project:	Wetzel County, WV	**MD Reference:**	KB@16 @ 1468.0usft
Site:	Wetzel County 513920	**North Reference:**	Grid
Well:	Well 513920	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Main Wellbore		
Design:	513920 As Drilled Surveys		

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	Subsea Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
13,772.0	89.90	341.30	7,608.7	6,140.7	5,541.9	-1,841.2	5,839.7	3.35	-1.56	-2.97
13,835.0	90.10	341.70	7,608.7	6,140.7	5,601.7	-1,861.2	5,902.7	0.71	0.32	0.63
13,899.0	90.80	343.10	7,608.2	6,140.2	5,662.7	-1,880.6	5,966.6	2.45	1.09	2.19
13,962.0	91.20	343.20	7,607.1	6,139.1	5,723.0	-1,898.8	6,029.6	0.65	0.63	0.16
14,026.0	91.00	343.10	7,605.8	6,137.8	5,784.2	-1,917.4	6,093.6	0.35	-0.31	-0.16
14,089.0	91.30	344.30	7,604.6	6,136.6	5,844.6	-1,935.1	6,156.6	1.96	0.48	1.90
14,152.0	91.50	345.60	7,603.0	6,135.0	5,905.5	-1,951.4	6,219.5	2.09	0.32	2.06
14,216.0	90.40	344.70	7,602.0	6,134.0	5,967.3	-1,967.8	6,283.3	2.22	-1.72	-1.41
14,279.0	89.90	344.30	7,601.8	6,133.8	6,028.0	-1,984.6	6,346.3	1.02	-0.79	-0.63
14,343.0	89.20	344.60	7,602.3	6,134.3	6,089.7	-2,001.8	6,410.2	1.19	-1.09	0.47
14,406.0	89.10	344.50	7,603.2	6,135.2	6,150.4	-2,018.6	6,473.2	0.22	-0.16	-0.16
14,470.0	90.30	344.60	7,603.6	6,135.6	6,212.1	-2,035.6	6,537.1	1.88	1.88	0.16
14,533.0	91.30	344.50	7,602.7	6,134.7	6,272.8	-2,052.4	6,600.0	1.60	1.59	-0.16
14,596.0	90.60	344.10	7,601.7	6,133.7	6,333.4	-2,069.5	6,663.0	1.28	-1.11	-0.63
14,660.0	90.80	343.00	7,600.9	6,132.9	6,394.8	-2,087.6	6,726.9	1.75	0.31	-1.72
14,723.0	90.60	341.60	7,600.1	6,132.1	6,454.8	-2,106.7	6,789.9	2.24	-0.32	-2.22
14,786.0	90.40	340.40	7,599.5	6,131.5	6,514.4	-2,127.2	6,852.9	1.93	-0.32	-1.90
14,849.0	90.30	340.60	7,599.2	6,131.2	6,573.8	-2,148.3	6,915.9	0.35	-0.16	0.32
14,912.0	90.60	342.10	7,598.7	6,130.7	6,633.5	-2,168.4	6,978.9	2.43	0.48	2.38
14,975.0	90.60	341.70	7,598.0	6,130.0	6,693.3	-2,188.0	7,041.9	0.63	0.00	-0.63
15,038.0	91.00	341.90	7,597.1	6,129.1	6,753.2	-2,207.7	7,104.9	0.71	0.63	0.32
15,101.0	91.40	342.00	7,595.8	6,127.8	6,813.1	-2,227.2	7,167.9	0.65	0.63	0.16
15,165.0	90.10	341.40	7,595.0	6,127.0	6,873.8	-2,247.3	7,231.8	2.24	-2.03	-0.94
15,228.0	89.70	342.20	7,595.1	6,127.1	6,933.7	-2,266.9	7,294.8	1.42	-0.63	1.27
15,291.0	89.90	341.60	7,595.3	6,127.3	6,993.6	-2,286.5	7,357.8	1.00	0.32	-0.95
15,354.0	90.20	342.10	7,595.2	6,127.2	7,053.4	-2,306.1	7,420.8	0.93	0.48	0.79
15,417.0	90.50	343.10	7,594.9	6,126.9	7,113.5	-2,325.0	7,483.8	1.66	0.48	1.59
15,480.0	90.60	343.60	7,594.3	6,126.3	7,173.9	-2,343.0	7,546.8	0.81	0.16	0.79
15,543.0	91.30	343.70	7,593.2	6,125.2	7,234.3	-2,360.8	7,609.8	1.12	1.11	0.16
Final Survey=15572' MD/7593' TVD										
15,572.0	91.60	343.60	7,592.5	6,124.5	7,262.2	-2,368.9	7,638.8	1.09	1.03	-0.34
Projection to TD=15630' MD/ 7591' TVD										
15,630.0	91.60	343.60	7,590.9	6,122.9	7,317.8	-2,385.3	7,696.7	0.00	0.00	0.00

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Database:	EDM 5000.1 Single User Db	**Local Co-ordinate Reference:**	Site Wetzel County 513920
Company:	EQT Production - Marcellus	**TVD Reference:**	KB@16 @ 1468.0usft
Project:	Wetzel County, WV	**MD Reference:**	KB@16 @ 1468.0usft
Site:	Wetzel County 513920	**North Reference:**	Grid
Well:	Well 513920	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Main Wellbore		
Design:	513920 As Drilled Surveys		

Design Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates +N/-S (usft)	Local Coordinates +E/-W (usft)	Comment
5,995.0	5,994.4	49.2	-35.5	Gyro Tie In=5995' MD
6,046.0	6,045.4	49.0	-36.1	KOP=6046' MD
8,097.0	7,651.8	118.5	-174.5	LP=8097' MD/ 7652' TVD
8,340.0	7,653.9	349.5	-250.0	Deepest Point of WEll=8340' MD/ 7654' TVD
15,572.0	7,592.5	7,262.2	-2,368.9	Final Survey=15572' MD/7593' TVD
15,630.0	7,590.9	7,317.8	-2,385.3	Projection to TD=15630' MD/ 7591' TVD

Checked By: _____ Approved By: _____ Date: _____

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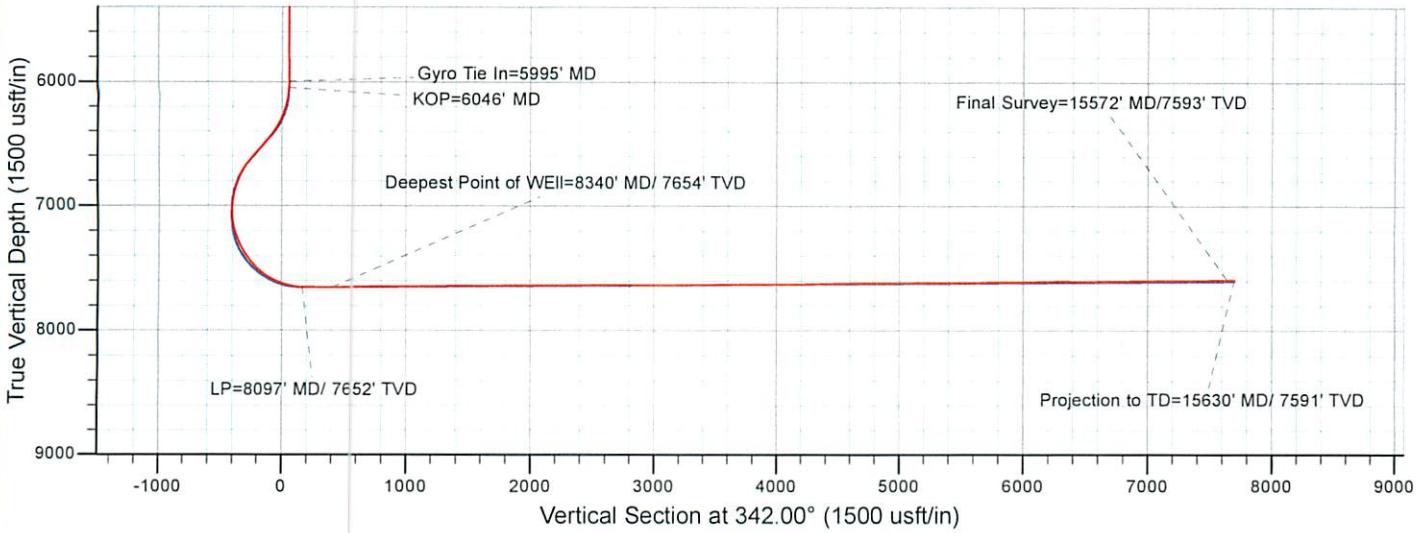
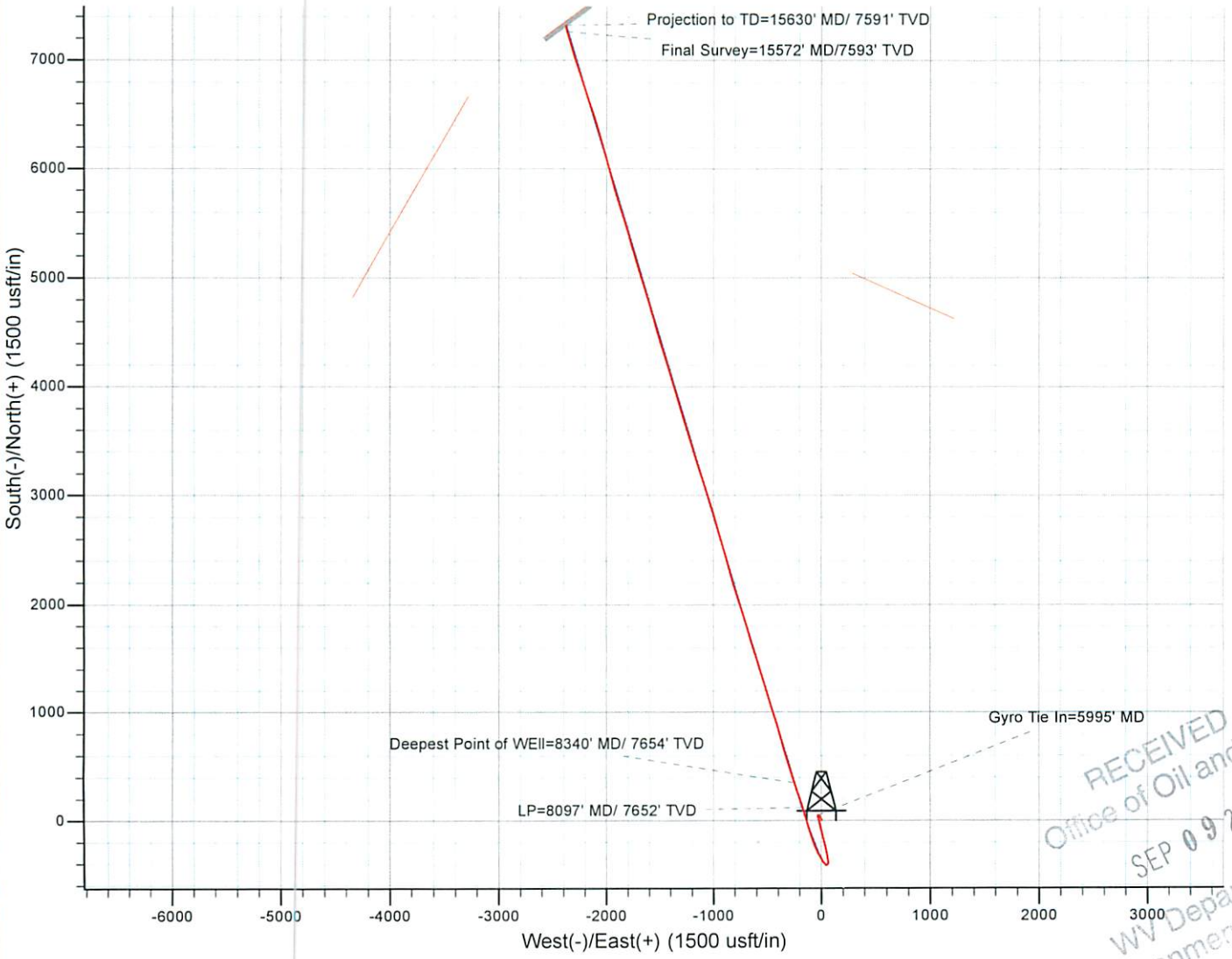
PHOENIX TECHNOLOGY SERVICES

EQT Production - Marcellus

Project: Wetzel County, WV
Site: Wetzel County 513920
Well: Well 513920
Wellbore: Main Wellbore
Design: 513920 As Drilled Surveys





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513920 - 47-103-03043-0000 - Stimulated Stages								
Stage Number	Stimulation 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)
Initiation Sleeve	6/5/2015	11.9	6,654.00	8,023.00	5,854.00	0	1379	0
1	6/5/2015	78.6	8,488.00	8,803.00	4,022.00	201,200	6096	0
2	6/5/2015	77.1	8,376.00	8,756.00	4,610.00	201,200	6454	0
3	6/6/2015	76	8,112.00	8,328.00	5,024.00	201,600	6288	0
4	6/6/2015	76.3	8,192.00	8,694.00	4,933.00	201,100	6094	0
5	6/6/2015	83.2	8,333.00	8,712.00	4,649.00	201,800	5843	0
6	6/6/2015	86.3	8,211.00	8,756.00	5,214.00	200,400	5988	0
7	6/7/2015	81.6	8,298.00	8,769.00	4,830.00	201,400	5923	0
8	6/7/2015	80.6	8,148.00	8,573.00	4,795.00	201,200	5596	0
9	6/7/2015	83.1	8,372.00	8,993.00	4,876.00	201,800	5575	0
10	6/7/2015	77.3	8,482.00	9,407.00	4,887.00	201,100	7148	0
11	6/8/2015	77.3	8,485.00	9,329.00	4,425.00	199,700	6262	0
12	6/8/2015	78.3	8,352.00	9,000.00	4,585.00	200,300	5857	0
13	6/8/2015	84.1	8,098.00	8,570.00	4,978.00	200,100	5599	0
14	6/8/2015	83.2	8,329.00	8,817.00	4,899.00	200,700	5812	0
15	6/8/2015	82.2	8,348.00	8,761.00	4,847.00	201,100	5717	0
16	6/9/2015	75.3	8,488.00	9,320.00	5,497.00	198,300	9381	0
17	6/10/2015	79.80	8,672.00	9,105.00	5,056	200,400	5,411	0
18	6/10/2015	83.10	8,633.00	9,290.00	5,574	199,600	5,394	0
19	6/10/2015	90.40	8,969.00	9,397.00	5,701	199,500	5,551	0
20	6/10/2015	90.90	9,066.00	9,446.00	5,502	200,300	5,686	0
21	6/11/2015	92.30	9,069.00	9,449.00	5,690	203,000	5,436	0
22	6/11/2015	85.50	8,851.00	9,312.00	5,930	200,700	5,083	0
23	6/11/2015	99.7	8,851.00	9,488.00	5,683.00	200,200	7221	0
24	6/11/2015	92.1	9,067.00	9,504.00	5,698.00	200,100	5419	0
25	6/12/2015	100.4	8,655.00	9,199.00	5,309.00	199,100	5287	0
26	6/12/2015	94.5	8,571.00	9,187.00	5,503.00	201,000	5639	0
27	6/12/2015	100.9	8,451.00	8,801.00	4,986.00	199,700	5605	0
28	6/13/2015	100.4	8,925.00	9,293.00	4,944.00	199,600	5387	0
29	6/13/2015	95.5	8,456.00	8,646.00	4,689.00	202,100	5416	0
30	6/13/2015	96.5	8,724.00	9,502.00	5,097.00	200,400	5213	0
31	6/13/2015	99.1	8,618.00	9,395.00	5,398.00	201,600	5461	0
32	6/13/2015	100.3	8,636.00	9,495.00	5,632.00	199,700	5221	0
33	6/14/2015	100.5	8,551.00	8,734.00	5,469.00	203,900	5106	0
34	6/14/2015	100.1	8,582.00	8,918.00	5,255.00	202,500	5008	0
35	6/14/2015	98.7	8,369.00	9,169.00	4,870.00	201,300	5327	0
36	6/14/2015	86.4	8,279.00	9,111.00	5,499.00	204,400	5194	0
37	6/14/2015	100.1	8,353.00	8,530.00	5,066.00	203,000	5279	0
38	6/14/2015	100.7	8,427.00	9,019.00	5,180.00	199,000	5012	0
39	6/15/2015	101.60	8,241.00	8,598.00	5,047	198,800	5,306	0
40	6/15/2015	100.80	8,591.00	8,956.00	4,994	199,700	5,053	0
41	6/15/2015	100.9	8,244.00	8,667.00	4,611.00	200,400	5217	0
42	6/15/2015	100.7	8,163.00	8,395.00	4,875.00	199,100	5279	0
43	6/15/2015	101.7	8,122.00	8,564.00	5,681.00	203,800	5196	0
44	6/15/2015	101.7	8,056.00	9,052.00	5,654.00	201,200	5210	0
45	6/15/2015	105.20	8,404.00	8,624.00	5,638	199,400	5,148	0
46	6/16/2015	102.20	8,438.00	8,982.00	5,482	200,500	5,084	0
47	6/16/2015	101.90	8,141.00	8,471.00	5,324	200,400	4,986	0
48	6/16/2015	101.50	8,161.00	8,778.00	5,444	199,600	4,997	0
49	6/16/2015	100.40	8,066.00	8,665.00	5,409	200,000	5,098	0
50	6/16/2015	101.90	8,103.00	9,106.00	5,439	201,600	5,094	0

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513920 - 47-103-03043-0000 - Perforations					
Stage Number	Perforation Date	Top Perf Depth (ftKB)	Bottom Perf Depth (ftKB)	Number of Shots	Formation
Initiation Sleeve	6/2/2015	15,628.00	15,630.00	10	MARCELLUS
1	6/5/2015	15,484.00	15,576.00	32	MARCELLUS
2	6/5/2015	15,334.00	15,452.00	40	MARCELLUS
3	6/6/2015	15,184.00	15,306.00	40	MARCELLUS
4	6/6/2015	15,034.00	15,156.00	40	MARCELLUS
5	6/6/2015	14,882.00	15,006.00	40	MARCELLUS
6	6/6/2015	14,734.00	14,856.00	40	MARCELLUS
7	6/6/2015	14,584.00	14,706.00	40	MARCELLUS
8	6/7/2015	14,436.00	14,554.00	40	MARCELLUS
9	6/7/2015	14,284.00	14,406.00	40	MARCELLUS
10	6/7/2015	14,134.00	14,256.00	40	MARCELLUS
11	6/7/2015	13,984.00	14,106.00	40	MARCELLUS
12	6/8/2015	13,834.00	13,956.00	40	MARCELLUS
13	6/8/2015	13,684.00	13,806.00	40	MARCELLUS
14	6/8/2015	13,534.00	13,656.00	40	MARCELLUS
15	6/8/2015	13,384.00	13,506.00	40	MARCELLUS
16	6/9/2015	13,234.00	13,356.00	40	MARCELLUS
17	6/10/2015	13,084.00	13,206.00	40	MARCELLUS
18	6/10/2015	12,934.00	13,054.00	40	MARCELLUS
19	6/10/2015	12,784.00	12,904.00	40	MARCELLUS
20	6/10/2015	12,634.00	12,754.00	40	MARCELLUS
21	6/11/2015	12,484.00	12,606.00	40	MARCELLUS
22	6/11/2015	12,334.00	12,452.00	40	MARCELLUS
23	6/11/2015	12,184.00	12,306.00	40	MARCELLUS
24	6/11/2015	12,034.00	12,156.00	40	MARCELLUS
25	6/12/2015	11,884.00	12,004.00	40	MARCELLUS
26	6/12/2015	11,734.00	11,854.00	40	MARCELLUS
27	6/12/2015	11,584.00	11,706.00	40	MARCELLUS
28	6/12/2015	11,432.00	11,554.00	40	MARCELLUS
29	6/13/2015	11,284.00	11,406.00	40	MARCELLUS
30	6/13/2015	11,134.00	11,254.00	40	MARCELLUS
31	6/13/2015	10,984.00	11,104.00	40	MARCELLUS
32	6/13/2015	10,834.00	10,956.00	40	MARCELLUS
33	6/13/2015	10,684.00	10,806.00	40	MARCELLUS
34	6/14/2015	10,534.00	10,656.00	40	MARCELLUS
35	6/14/2015	10,386.00	10,504.00	40	MARCELLUS
36	6/14/2015	10,234.00	10,354.00	40	MARCELLUS
37	6/14/2015	10,084.00	10,204.00	40	MARCELLUS
38	6/14/2015	9,934.00	10,054.00	40	MARCELLUS
39	6/14/2015	9,784.00	9,904.00	40	MARCELLUS
40	6/15/2015	9,632.00	9,754.00	40	MARCELLUS
41	6/15/2015	9,484.00	9,604.00	40	MARCELLUS
42	6/15/2015	9,334.00	9,456.00	40	MARCELLUS
43	6/15/2015	9,184.00	9,304.00	40	MARCELLUS
44	6/15/2015	9,034.00	9,152.00	40	MARCELLUS
45	6/15/2015	8,884.00	9,006.00	40	MARCELLUS
46	6/16/2015	8,734.00	8,854.00	40	MARCELLUS
47	6/16/2015	8,587.00	8,704.00	40	MARCELLUS
48	6/16/2015	8,434.00	8,556.00	40	MARCELLUS
49	6/16/2015	8,284.00	8,406.00	40	MARCELLUS
50	6/16/2015	8,134.00	8,256.00	40	MARCELLUS

Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	6/5/2015
Job End Date:	6/17/2015
State:	West Virginia
County:	Wetzel
API Number:	47-103-03043-00-00
Operator Name:	EQT Production
Well Name and Number:	513920
Longitude:	-80.58206500
Latitude:	39.52749500
Datum:	NAD83
Federal/Tribal Well:	NO
True Vertical Depth:	7,633
Total Base Water Volume (gal):	11,845,512
Total Base Non Water Volume:	0

103-03043

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
Water	C and J Energy Services	Carrier/Base Fluid					
			Water	7732-18-5	100.00000	90.39380	None
Sand (Proppant)	C and J Energy Services	Proppant					
			Silica Substrate	14808-60-7	100.00000	9.17977	None
WFR-12W	C and J Energy Services	Friction reducer					
			Anionic water-soluble polymer	Proprietary	100.00000	0.07389	None
MC MX 437-5	Multi-Chem	Calcium nitrate solution					
			Calcium nitrate	10124-37-5	60.00000	0.05677	None
Hydrochloric Acid (15%)	C and J Energy Services	Acidizing					
			Hydrochloric Acid	7647-01-0	15.00000	0.03276	None
Super TSC LT	C and J Energy Services	Scale control					
			Proprietary non-hazardous materials	Proprietary	100.00000	0.02688	None
LSG-100	C and J Energy Services	Gelling agent					
			Solvent naphtha	64742-47-8	65.00000	0.00777	None
			Proprietary non-hazardous polymers	Proprietary	60.00000	0.00717	None

AI-2	C and J Energy Services	Acid Inhibitor					
			Glycol Ethers	111-76-2	40.00000	0.00016	None
			Propargyl Alcohol	107-19-7	40.00000	0.00016	None
			Isopropyl Alcohol	67-63-0	40.00000	0.00016	None
			Ethoxylated Nonylphenol	68412-54-4	13.00000	0.00005	None
			Benzyl Chloride-Quaternized	72480-70-7	10.00000	0.00004	None
OB-2	C and J Energy Services	Gel Breaker					
			Ammonium Persulfate	7727-54-0	100.00000	0.00014	None
			Sillica, crystalline quartz	7631-86-9	30.00000	0.00004	None
WFR-6W	C and J Energy Services	Friction reducer					
			Anionic water-soluble polymer	Proprietary	100.00000	0.00014	None

Ingredients shown above are subject to 29 CFR 1910.1200(i) and appear on Material Safety Data Sheets (MSDS). Ingredients shown below are Non-MSDS.

* 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%

Note: For Field Development Products (products that begin with FDP), MSDS level only information has been provided.
Ingredient information for chemicals subject to 29 CFR 1910.1200(i) and Appendix D are obtained from suppliers Material Safety Data Sheets (MSDS)

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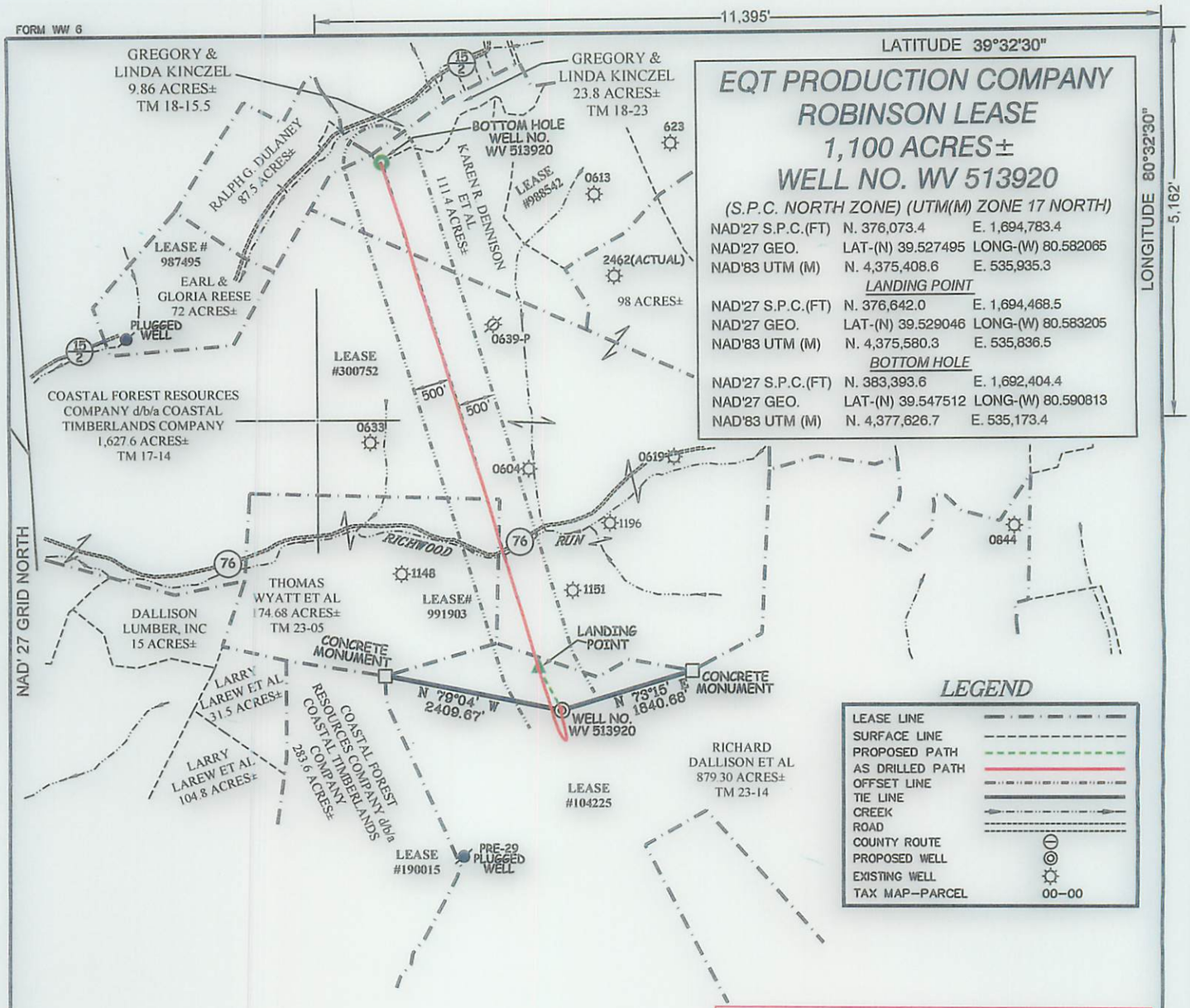

EQT PRODUCTION COMPANY
ROBINSON LEASE
1,100 ACRES±
WELL NO. WV 513920

(S.P.C. NORTH ZONE) (UTM(M) ZONE 17 NORTH)

NAD'27 S.P.C.(FT)	N. 376,073.4	E. 1,694,783.4
NAD'27 GEO.	LAT-(N) 39.527495	LONG-(W) 80.582065
NAD'83 UTM (M)	N. 4,375,408.6	E. 535,935.3
LANDING POINT		
NAD'27 S.P.C.(FT)	N. 376,642.0	E. 1,694,468.5
NAD'27 GEO.	LAT-(N) 39.529046	LONG-(W) 80.583205
NAD'83 UTM (M)	N. 4,375,580.3	E. 535,836.5
BOTTOM HOLE		
NAD'27 S.P.C.(FT)	N. 383,393.6	E. 1,692,404.4
NAD'27 GEO.	LAT-(N) 39.547512	LONG-(W) 80.590813
NAD'83 UTM (M)	N. 4,377,626.7	E. 535,173.4

LEGEND

LEASE LINE	
SURFACE LINE	
PROPOSED PATH	
AS DRILLED PATH	
OFFSET LINE	
TIE LINE	
CREEK	
ROAD	
COUNTY ROUTE	
PROPOSED WELL	
EXISTING WELL	
TAX MAP–PARCEL	00–00

AS DRILLED COORDINATES FOR WELL NO. WV 513920

(S.P.C. NORTH ZONE) (UTM(M) ZONE 17 NORTH)

NAD'27 S.P.C.(FT)	N. 376,073.4	E. 1,694,783.4
NAD'27 GEO.	LAT-(N) 39.527495	LONG-(W) 80.582065
NAD'83 UTM (M)	N. 4,375,408.6	E. 535,935.3
BOTTOM HOLE		
NAD'27 S.P.C.(FT)	N. 383,390.8	E. 1,692,396.2
NAD'27 GEO.	LAT-(N) 39.547505	LONG-(W) 80.590835
NAD'83 UTM (M)	N. 4,377,625.8	E. 535,171.5

ROYALTY OWNERS		
MILLS WETZEL LANDS INC.	1000 AC.±	LEASE NO. 300752
GLADY WILLEY ET AL	175 AC.±	LEASE NO. 991903
CNX	280 AC.±	LEASE NO. 988542

NOTES ON SURVEY

1. NO WATER WELLS WERE FOUND WITHIN 250' OF PROPOSED GAS WELL. NO AGRICULTURAL BUILDINGS ≥ 2500 SQ. FT. OR DWELLINGS WERE FOUND WITHIN 625' OF THE CENTER OF PROPOSED WELL PAD.
2. AS DRILLED INFORMATION PROVIDED BY EQT.

Professional Energy Consultants
A DIVISION OF SMITH LAND SURVEYING, INC.
SLS SURVEYORS ENGINEERS ENVIRONMENTAL PROJECT MGMT.
(304) 462-5634 WWW.SLSSURVEYS.COM

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 REGULATIONS ISSUED AND PRESCRIBED BY THE DIVISION OF ENVIRONMENTAL PROTECTION.

P.S. 2288 *Earl N. Thompson*

EARL N. THOMPSON LICENSED No. 2288 STATE OF WEST VIRGINIA PROFESSIONAL SURVEYOR

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

DATE APRIL 18, 20 13

REVISED 06/07/13, 07/09/14, 08/05/14 & 05/26/15

OPERATORS WELL NO. WV 513920

API WELL NO. 47 — 103 — 03043H
STATE COUNTY PERMIT

MINIMUM DEGREE OF ACCURACY 1 / 200 FILE NO. 7797AD513920

SCALE 1" = 2000'

HORIZONTAL & VERTICAL CONTROL DETERMINED BY DGPS (SURVEY GRADE TIE TO CORS NETWORK)

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 1,452' (PAD ELEVATION) WATERSHED AUNTY RUN OF SOUTH FORK FISHING CREEK

DISTRICT GRANT COUNTY WETZEL QUADRANGLE BIG RUN 7.5'

SURFACE OWNER RICHARD DALLISON ET AL ACREAGE 879.30±

ROYALTY OWNER ED BROOME, INC ET AL ACREAGE 1,100±

PROPOSED WORK : LEASE NO. 104225

DRILL X CONVERT ___ DRILL DEEPER ___ REDRILL ___ FRACTURE OR STIMULATE X 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 7,631'

WELL OPERATOR EQT PRODUCTION COMPANY DESIGNATED AGENT REX C. RAY

ADDRESS 115 PROFESSIONAL PLACE P.O. BOX 280 ADDRESS 115 PROFESSIONAL PLACE P.O. BOX 280

BRIDGEPORT, WV 26330 BRIDGEPORT, WV 26330

COUNTY NAME

PERMIT