west virginia department of environmental protection

Office of Oil and Gas
601 57th Street SE
Charleston, WV 25304
(304) 926-0450
(304) 926-0452 fax

Earl Ray Tomblin, Governor
Randy C. Huffman, Cabinet Secretary
www.dep.wv.gov

July 01, 2013

WELL WORK PERMIT

Horizontal 6A Well

This permit, API Well Number: 47-10302896, issued to STONE ENERGY CORPORATION, is evidence of permission granted to perform the specified well work at the location described on the attached pages and located on the attached plat, subject to the provisions of Chapter 22 of the West Virginia Code of 1931, as amended, and all rules and regulations promulgated thereunder, and to all conditions and provisions outlined in the pages attached hereto. Notification shall be given by the operator to the Oil and Gas Inspector at least 24 hours prior to the construction of roads, locations, and/or pits for any permitted work. In addition, the well operator shall notify the same inspector 24 hours before any actual well work is commenced and prior to running and cementing casing. Spills or emergency discharges must be promptly reported by the operator to 1-800-642-3074 and to the Oil and Gas inspector.

Please be advised that form WR-35, Well Operators Report of Well Work is to be submitted to this office within 90 days completion of permitted well work, as should form WR-34 Discharge Monitoring Report within 30 days of discharge of pits, if applicable. Failure to abide by all statutory and regulatory provisions governing all duties and operations hereunder may result in suspension or revocation of this permit and, in addition, may result in civil and/or criminal penalties being imposed upon the operators.

In addition to the applicable requirements of this permit, and the statutes and rules governing oil and gas activity in WV, this permit may contain specific conditions which must be followed. Permit conditions are attached to this cover letter.

Per 35CSR-4-5.2.g this permit will expire in two (2) years from the issue date unless permitted well work is commenced. If there are any questions, please feel free to contact me at (304) 926-0499 ext. 1654.

James Martin
Chief

Operator's Well No: ZMBG #7H
Farm Name: ZUMPETTA, LAWRENCE , ET AL
API Well Number: 47-10302896
Permit Type: Horizontal 6A Well
Date Issued: 07/01/2013

07/05/2013

X)

PERMIT CONDITIONS

West Virginia Code § 22-6A-8(d) allows the Office of Oil and Gas to place specific conditions upon this permit. Permit conditions have the same effect as law. Failure to adhere to the specified permit conditions may result in enforcement action.

CONDITIONS

1. If the operator encounters an unanticipated void, or an anticipated void at an unanticipated depth, the operator shall notify the inspector within 24 hours. Modifications to the casing program may be necessary to comply with W. Va. Code § 22-6A-5a (12), which requires drilling to a minimum depth of thirty feet below the bottom of the void, and installing a minimum of twenty (20) feet of casing. Under no circumstance should the operator drill more than fifty (50) feet below the bottom of the void or install less than twenty (20) feet of casing below the bottom of the void.

2. When compacting fills, each lift before compaction shall not be more than 12 inches in height, and the fill material shall be within plus or minus 2% (unless soil test results show a greater range of moisture content is appropriate and 95% compaction can still be achieved) of the optimum moisture content as determined by the standard proctor density test, ASTM D698, Standard Test Method for Laboratory Compaction Characteristics of Soil Using Standard Effort. Each lift must meet 95 % compaction of the optimum density based on results from the standard proctor density test of the actual soils used in specific engineered fill sites. Each lift shall be tested for compaction, with a minimum of two tests per lift per acre of fill. All test results shall be maintained on site and available for review.

3. Operator shall install signage per § 22-6A-8g (6) (B) at all source water locations included in their approved water management plan within 24 hours of water management plan activation.

4. Oil and gas water supply wells will be registered with the Office of Oil and Gas and all such wells will be constructed and plugged in accordance with the standards of the Bureau for Public Health set forth in its Legislative rule entitled *Water Well Regulations,* 64 C.S.R. 19. Operator is to contact the Bureau of Public Health regarding permit requirements. In lieu of plugging, the operator may transfer the well to the surface owner upon agreement of the parties. All drinking water wells within fifteen hundred feet of the water supply well shall be flow tested by the operator upon request of the drinking well owner prior to operating the water supply well.

5. Pursuant to the requirements pertaining to the sampling of domestic water supply wells/springs the operator shall, no later than thirty (30) days after receipt of analytical data provide a written copy to the Chief and any of the users who may have requested such analyses.

103-2896

WW - 6B
(1/12)

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS
W.VA. CODE §22-6A - WELL WORK PERMIT APPLICATION

103 06 509

1) Well Operator:	STONE ENERGY CORPORATION	494490923	Wetzel	Magnolia	New Martinsville
		Operator ID	County	District	Quadrangle

2) Operator's Well Number: ZMBG #7H Well Pad Name: ZMBG

3 Elevation, current ground: 1,340' Elevation, proposed post-construction: 1,334'

4) Well Type: (a) Gas ■ Oil _____
Other _____
(b) If Gas: Shallow ■ Deep _____
Horizontal ■

5) Existing Pad? Yes or No: No

6) Proposed Target Formation(s), Depth(s), Anticipated Thicknesses and Associated Pressure(s):
The well is to be drilled in the Marcellus Shale formation. Depth is expected to be 6,716' TVD from ground level (-5,364' Sub-Sea). The Marcellus is expected to have a thickness of 56' and a rock pressure of 2,500 to 3,000 psi

7) Proposed Total Vertical Depth: 6,740' TVD
8) Formation at Total Vertical Depth: MARCELLUS SHALE
9) Proposed Total Measured Depth: 11,400' MD
10) Approximate Fresh Water Strata Depths: 80' Shallowest and 1,147' Deepest
11) Method to Determine Fresh Water Depth: Noticeable flow from flow line or when having to start soaping
12) Approximate Saltwater Depths: 1,800'
13) Approximate Coal Seam Depths: 1,142'
14) Approximate Depth to Possible Void (coal mine, karst, other): None Anticipated
15) Does land contain coal seams tributary or adjacent to, active mine? No ✓
16) Describe proposed well work: Construct well site according to approved engineering plans. MIRU conductor rig and set 20" conductor into solid rock and grout to surface. RDMO conductor rig. MIRU Top Hole Rig and drill setting 13.375" casing through fresh water and coal seams. Cement to surface. Drill and set 9.625" casing through salt water zones. Cement to surface. Continue drilling to KOP. RDMO Top Hole Rig and MIRU Horizontal Rig. Drill curve and lateral to TD. Set 5.5" production casing and cement 1000' back into 9.625" casing. RDMO Horizontal Rig.

17) Describe fracturing/stimulating methods in detail:
MIRU completion Equipment. Run CBL from approximately 30 degrees in the curve to surface. Perforate approximately 15 individual stages each separated by frac plugs in the lateral section. Stimulate each individual stage using sand laden slick water. RDMO Completion Equipment. MIRU service rig or coil tubing unit and clean out well bore. Run tubing into well bore using snubbing equipment to aid in fluid recovery and clean up well bore. Once completion activities have been finished and well is turned in line the well pad will be reclaimed. See attached Frac Chemical Addendum for additives that may be used during the stimulation.

18) Total area to be disturbed, including roads, stockpile area, pits, etc, (acres): 28.79

19) Area to be disturbed for well pad only, less access road (acres): 9.89

DMH
4-1-13

Received
Office of Oil & Gas
2013

07/05/2013

103-2896

WW - 6B
(1/12)

20) **CASING AND TUBING PROGRAM**

TYPE	Size	New or Used	Grade	Weight per ft.	FOOTAGE: For Drilling	INTERVALS: Left in Well	CEMENT: Fill -up (Cu. Ft.)
Conductor	20"	New	LS	94.0	40'	40'	38 CTS
Fresh Water	13.375"	New	J55	54.0	1,300'	1,300'	1,238 CTS
Coal	13.375"	New	J55	54.0	1,300'	1,300'	1,238 CTS
Intermediate	9.625"	New	J55	36.5	2,570'	2,570'	693 Lead - 357 Tail CTS
Production	5.5"	New	P110	20.0		11,400'	1,100 Lead - 1,648 Tail TOC @ 1,570'
Tubing	2.375"	New	J55	4.7		7,200'	N/A
Liners							

Note: The fresh water/coal string will be set above sea level and cemented to surface. DMH 4-1-13

TYPE	Size	Wellbore Diameter	Wall Thickness	Burst Pressure	Cement Type	Cement Yield
Conductor	20"	24"	0.375"	N/A	Type 1	1.18
Fresh Water	13.375"	17.5"	0.380"	2,730 psi	Class A	1.19
Coal	13.375"	17.5"	0.380"	2,730 psi	Class A	1.19
Intermediate	9.625"	12.25"	0.352"	3,520 psi	Class A	Lead 1.26 - Tail 1.19
Production	5.5"	8.75"	0.361"	12,360 psi	Class A	Lead 1.25 - Tail 1.23
Tubing	2.375"	N/A	0.190"	7,700 psi	N/A	N/A
Liners						

PACKERS

Kind:	N/A			
Sizes:				
Depths Set:				

103-2896

WW - 6B
(1/12)

21) Describe centralizer placement for each casing string. -Fresh Water/Coal string will incorporate the use of bow spring centralizers with one (1) being placed above guide shoe and one (1) every second joint to surface for a total of 17 bow spring centralizers will be run.

- Intermediate string will incorporate the use of bow spring centralizers with one (1) being placed above the guide shoe, one (1) above the float collar, and one (1) every third joint to surface. One (1) rigid centralizer will be placed near the surface. A total of 23 bow spring centralizers will be run.

- Production string will incorporate the use of alternating left and right hand spiral centralizers with one (1) every fourth joint from TD to KOP, one (1) every third joint from KOP to top of nudge or slant, and one (1) bow spring centralizers placed on every third joint to TOC. A total of 62 Spiral and 10 Bow Spring will be be run.

22) Describe all cement additives associated with each cement type. - Fresh Water/Coal string will be cemented using a slurry of Class A cement with 0.10 lb/sx Cello flake, 0.20% BWOB Anti-Foam, and 1.0% BWOB CaCl2

- Intermediate string will be cemented using a Lead and Tail slurry; Lead is Class A cement with 0.20 gps Accelerator, 0.07 gps Dispersant, 0.10 gps Anti-Foam, 4.0% BWOB Expanding Agent, and 0.50% BWOB Gas Control Agent. Tail is Class A cement with 1.0% BWOB CaCl2, 0.1 lb/sx Cello-Flake, and 0.2% BWOB Anti Foam.

-Production string will be cemented using a Lead and Tail slurry; Lead is Class A cement with 0.10 gps Dispersant, 0.10 gps Anti-Foam, 0.05 gps Retarder, 4.0% BWOB Expanding Agent, and 0.50% BWOB Gas Control Agent. Tail is Class A cement with 0.90% BWOB Dispersant, 0.30% BWOB Fluid Loss, 0.20% BWOB Anti-Foam, and 0.60% BWOB Retarder.

23) Proposed borehole conditioning procedures.

- Fresh Water/Coal section will be conditioned by circulating air through the drill sting at TD for between 30 to 60 minutes until well bore is clean of cuttings.

- Intermediate section will be conditioned by circulating air and/or stiff foam through drill string at TD for between 30 to 120 minutes until well bore is clear of cuttings.

- Production section will be conditioned by circulating drilling fluid through the drill string at TD fro between 60 to 720 minutes until shakers are clear of cutting and drill string pulls free of bottom.

*Note: Attach additional sheets as needed.

DMH
4-1-13

2013

07/05/2013

103-2896

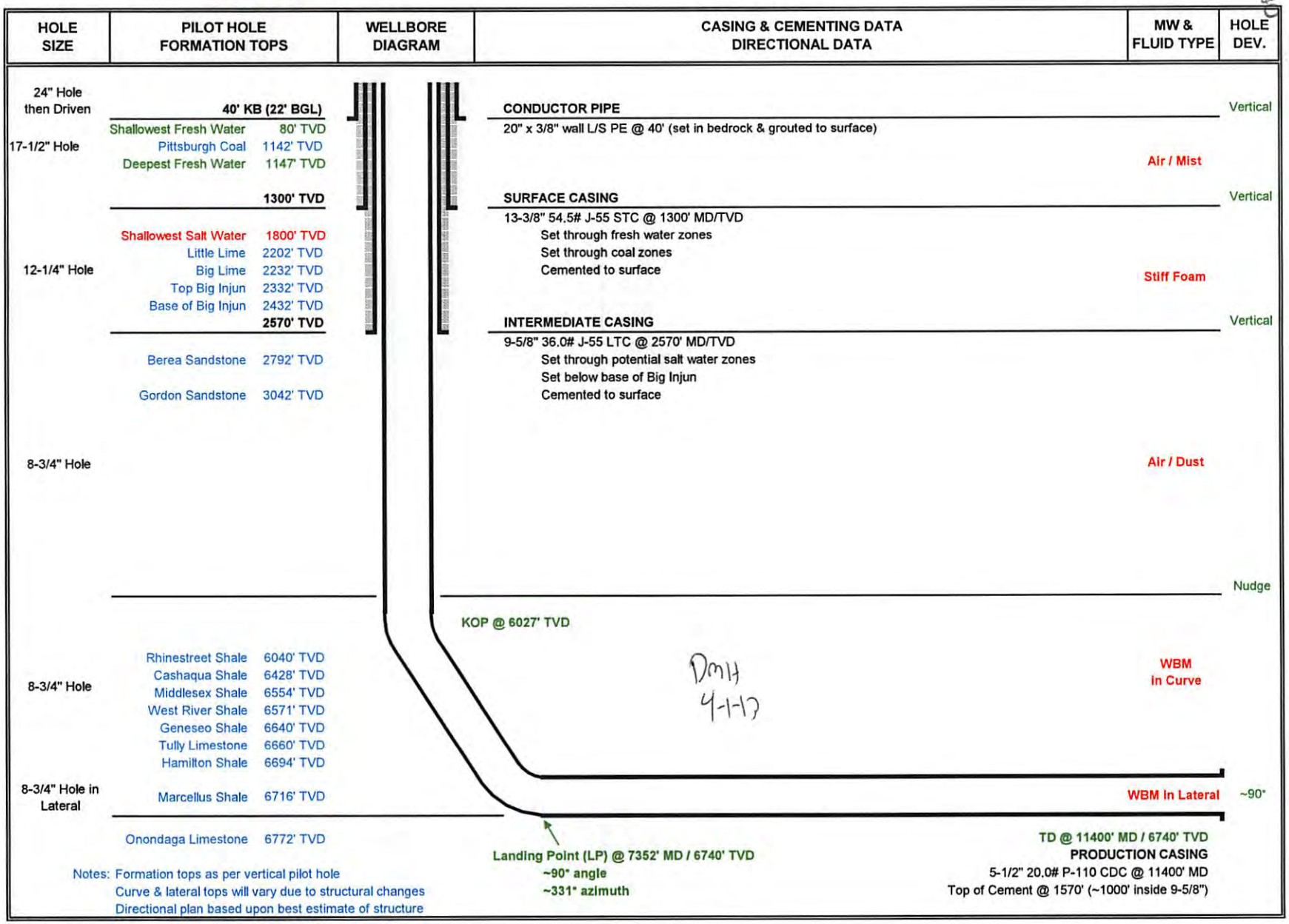
Received
Office of Oil & Gas
APR 2 2 2013

STONE ENERGY - PROPOSED HORIZONTAL

Revision: 14-Mar-13

Well: ZMBG #7H
State: West Virginia
County: Wetzel
District: Magnolia
Prospect: Mary
Location: Surface: North = 4,387,962 East = 515,408 (UTM NAD 83)
PBHL: North = 4,389,183 East = 514,969 (UTM NAD 83)
PTD: 11400' MD / 6740' TVD

Permit Number: 47-103-0
Permit Issued:
Post Construction Ground Elevation: 1334'
Kelly Bushing: 18'
Rig:
Spud Date:
TD Date:
Rig Release Date:



Notes: Formation tops as per vertical pilot hole
Curve & lateral tops will vary due to structural changes
Directional plan based upon best estimate of structure

WW-9
Rev. 1/12

API No. 47 - 103 - 2896
Operator's Well No. ZMBG #7H

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS

CONSTRUCTION AND RECLAMATION PLAN AND SITE REGISTRATION APPLICATION FORM
GENERAL PERMIT FOR OIL AND GAS PIT WASTE DISCHARGE

Operator Name STONE ENERGY CORPORATION OP Code 494490923

Watershed Tributary of Doolin Run Quadrangle New Martinsville

Elevation 1,340' County Wetzel District Magnolia

Description of anticipated Pit Waste: There will not be a waste pit constructed on this well site

Do you anticipate using more than 5,000 bbls of water to complete the proposed well work? Yes ✓ No _____

Will a synthetic liner be used in the pit? N/A. If so, what mil.? N/A

Proposed Disposal Method For Treated Pit Wastes:

_____ Land Application
■ Underground Injection (UIC Permit Number Hunter Disposal 2D0859721, 34-121-24037, 34-121-24086)
■ Reuse (at API Number Flow back will be stored in tanks and re-used at other well site)
_____ Off Site Disposal (Supply form WW-9 for disposal location)
_____ Other (Explain _____

Drilling medium anticipated for this well? Air, freshwater, oil based, etc. Vertical section: Air and Drilling Soap, Curve and Lateral: Brine fluid
-If oil based, what type? Synthetic, petroleum, etc. N/A
Additives to be used? See Attached WW-9 Addendum
Will closed loop system be used ? Both Top Hole and Horizontal drilling rigs will incorporate the use of a closed loop system
Drill cuttings disposal method? Leave in pit, landfill, removed offsite, etc. Approved and permitted of site landfill
-If left in pit and plan to solidify what medium will be used? Cement, lime, N/A
-Landfill or offsite name/permit number? Wetzel County Sanitary Landfill (SWF-1021/WV0109185)

DMH
4-1-13

I certify that I understand and agree to the terms and conditions of the GENERAL WATER POLLUTION PERMIT issued on August 1, 2005, by the Office of Oil and Gas of the West Virginia Department of Environmental Protection. I understand that the provisions of the permit are enforceable by law. Violations of any term or condition of the general permit and/or other applicable law or regulation can lead to enforcement action.

I certify under penalty of law that I have personally examined and am familiar with the information submitted on this application form and all attachments thereto and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine or imprisonment.

Company Official Signature _____

Company Official (Typed Name) Timothy P. McGregor

Company Official Title Land Coordinator

Subscribed and sworn before me this 27th day of March, 20 13

Danielle L. Snoderly Notary Public

My commission expires 5/18/2021

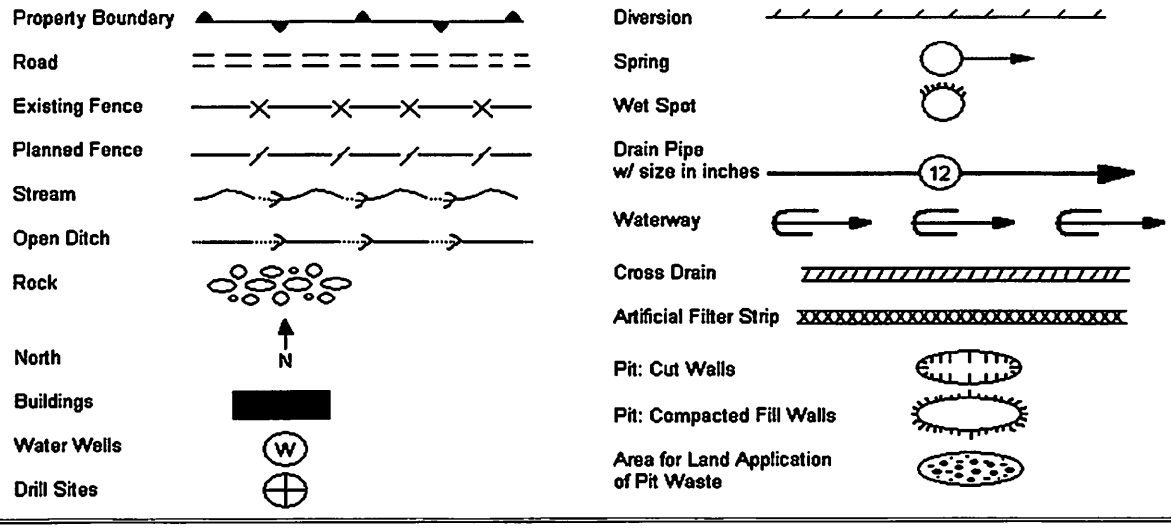
OFFICIAL SEAL
NOTARY PUBLIC
STATE OF WEST VIRGINIA
DANIELLE L SNODERLY
RR2 Box 248A, Fairmont, WV 26554
My Commission Expires May 18, 2021

Received
Office of Oil & Gas
APR 2 2013

07/05/2013

WW-9
Rev. 1/12

API No. 47 - 103 - 2896
Operator's Well No. ZMBG #7H



Proposed Revegetation Treatment: Acres Disturbed 28.79 Prevegetation pH _____

Lime 2.0 Tons/acre or to correct to pH 6.5

Fertilizer (10-20-20 or equivalent) 500 - 750 lbs/acre (500 lbs minimum)

Mulch 0.50 to 0.75 TPA + Straw Tons/acre

Seed Mixtures

Area I		Area II	
Seed Type	lbs/acre	Seed Type	lbs/acre
Marcellus Mix	100.0	Marcellus Mix	100.0
White or Ladino Clover	10.0	White or Ladino Clover	10.0
Orchard Grass	40.0	Orchard Grass	40.0
Winter Rye	50.0	Winter Rye	50.0

Attach:
Drawing(s) of road, location,pit and proposed area for land application.

Photocopied section of involved 7.5' topographic sheet.

Plan Approved by: _____

Comments: _____

Title: Oil + Gas Inspector Date: 4-1-13

Field Reviewed? (✓) Yes ( ) No

Office of Oil & Gas

APR 2013

07/05/2013

V4/22

Water Management Plan:
Secondary Water Sources

WMP- 01201 | API/ID Number 047-103-02896 | Operator: Stone Energy Corporation

ZMBG #7H

Important:

For each proposed secondary water source identified in your water management plan (i.e., groundwater well, lake/reservoir, recycled frac water, multi-site impoundment, out-of-state source), DEP makes no estimation of the availability of water. These sources may prove to be unsuitable water supplies. Please review the following notes:

- For groundwater supply wells, DEP recommends that the operator contact the local health department prior to drilling any new well; and reminds the operator that all drinking water wells within 1,500 feet of a water supply well shall be flow- and quality-tested by the operator at the request of the drinking well owner prior to operation of the water supply well.
- For each proposed multi-site impoundment water source identified in your water management plan (if applicable), DEP will review the withdrawal limits established in the referenced Water Management Plan for current suitability and provide to the operator these limits for each identified intake. Note that withdrawal limits may be modified as necessary based on changing demands upon that water supply.

Multi-site impoundment

Source ID: 17040 Source Name Pribble Freshwater Impoundment

Source start date: 2/1/2014

Source end date: 2/1/2015

Source Lat: 39.685144 Source Long: -80.820002 County Wetzel

Max. Daily Purchase (gal)

Total Volume from Source (gal): 4,902,200

DEP Comments:

The intake identified above has been defined in a previous water management plan. The thresholds established in that plan govern this water management plan unless otherwise noted.

Reference: WMP-277

APPROVED MAY 28 2013

07/05/2013

Important:

For each proposed secondary water source identified in your water management plan (i.e., groundwater well, lake/reservoir, recycled frac water, multi-site impoundment, out-of-state source), DEP makes no estimation of the availability of water. These sources may prove to be unsuitable water supplies. Please review the following notes:

- For groundwater supply wells, DEP recommends that the operator contact the local health department prior to drilling any new well; and reminds the operator that all drinking water wells within 1,500 feet of a water supply well shall be flow- and quality-tested by the operator at the request of the drinking well owner prior to operation of the water supply well.
- For each proposed multi-site impoundment water source identified in your water management plan (if applicable), DEP will review the withdrawal limits established in the referenced Water Management Plan for current suitability and provide to the operator these limits for each identified intake. Note that withdrawal limits may be modified as necessary based on changing demands upon that water supply.

Recycled Frac Water

Source ID: 17041 Source Name Varioius

Source start date: 2/1/2014
Source end date: 2/1/2015

Source Lat: Source Long: County

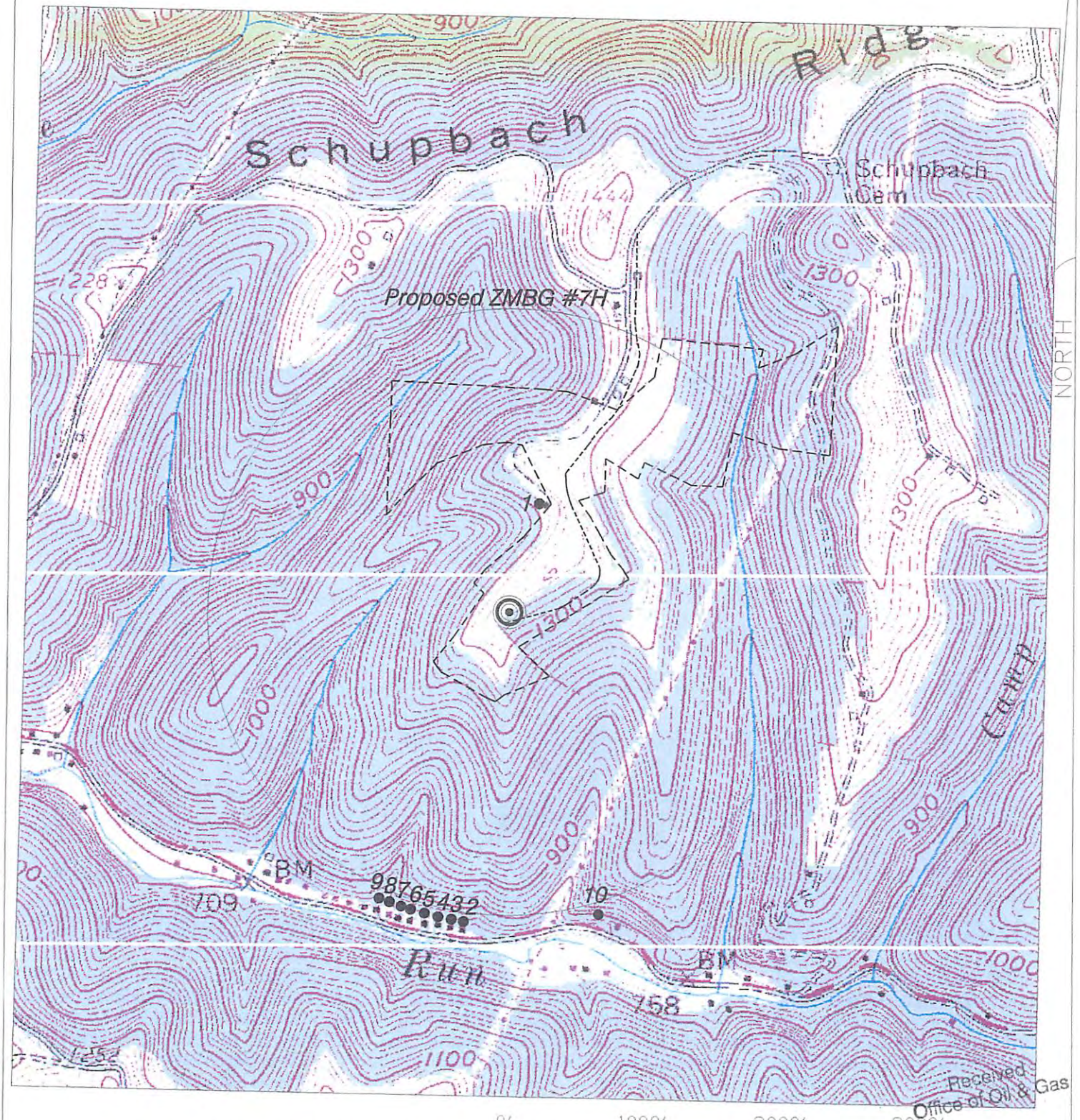
Max. Daily Purchase (gal) Total Volume from Source (gal): 347,800

DEP Comments:

103-2896

Form W-9

STONE ENERGY CORP.
ZMBG #7H WATER



SCALE: 1-INCH = 1000-FEET

0' 1000' 2000' 3000'

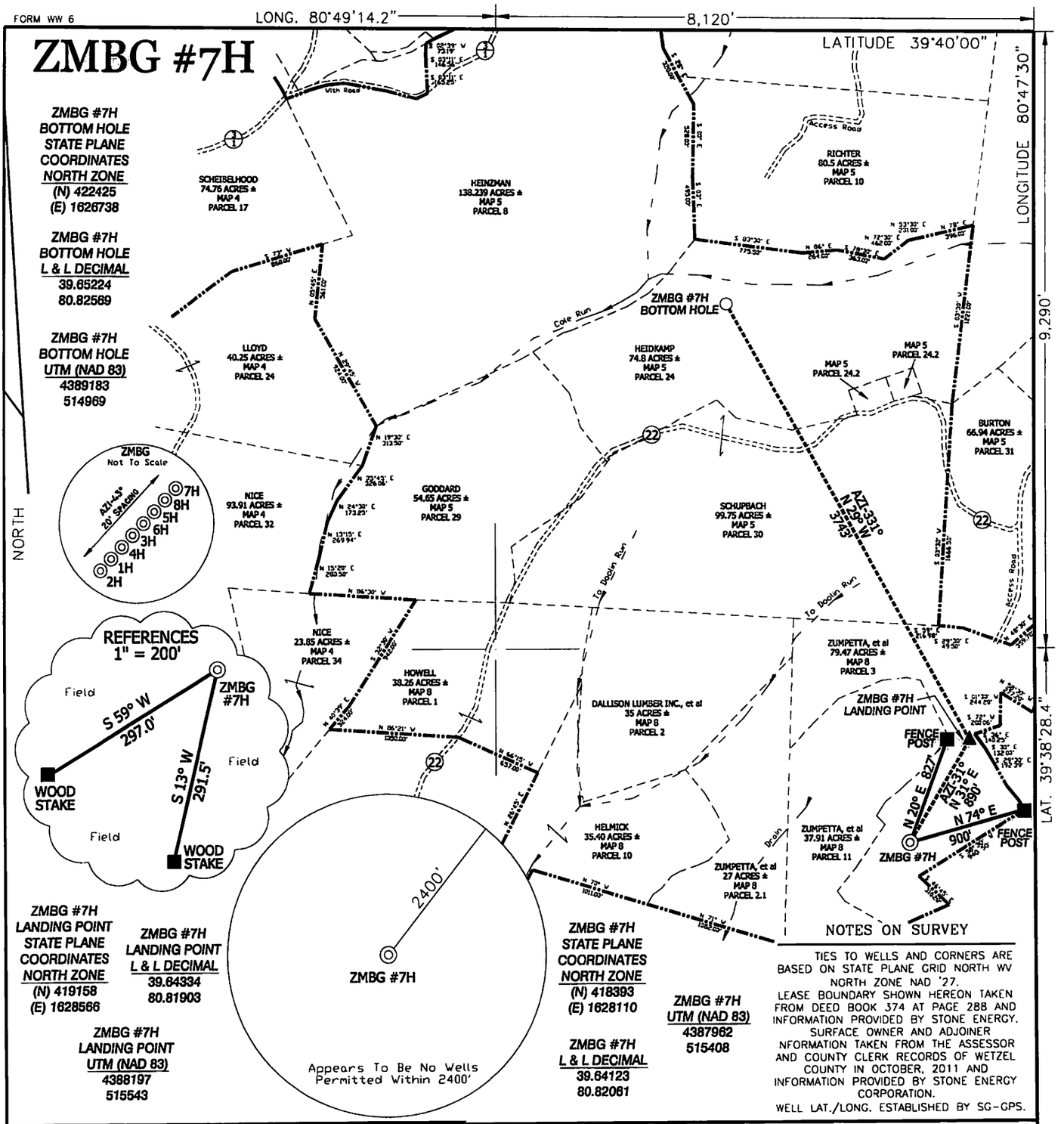
Received
Office of Oil & Gas
APR 22 2013

HUPP Surveying & Mapping P.O. BOX 647 GRANTSVILLE, WV 26147 PH: (304)354-7035 E-MAIL: hupp@frontiernet.net	1" = 1000' New Martinsville Quad	Stone Energy Corporation PO Box 52807 Lafayette, LA 70508	---------- Existing Access Road 1000' Water Sampling Radius # Proposed Water Sources

07052013

FORM WW 6

ZMBG #7H



NOTES ON SURVEY

TIES TO WELLS AND CORNERS ARE BASED ON STATE PLANE GRID NORTH WV NORTH ZONE NAD '27. LEASE BOUNDARY SHOWN HEREON TAKEN FROM DEED BOOK 374 AT PAGE 288 AND INFORMATION PROVIDED BY STONE ENERGY. SURFACE OWNER AND ADJOINER NFORMATION TAKEN FROM THE ASSESSOR AND COUNTY CLERK RECORDS OF WETZEL COUNTY IN OCTOBER, 2011 AND INFORMATION PROVIDED BY STONE ENERGY CORPORATION. WELL LAT./LONG. ESTABLISHED BY SG-GPS.

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. 834 Doyle Hupp Jr.

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 JANUARY 20, 20 12

OPERATORS WELL NO. ZMBG #7H

API WELL NO. 47 — 103 — H6A 2896
STATE — COUNTY — PERMIT

MINIMUM DEGREE OF ACCURACY 1/2500

PROVEN SOURCE OF ELEVATION SG-GPS(OPUS)

FILE NO. W2068 (BK 49-6)

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 254.02± 07/05/2013
PROPOSED WORK : LEASE NO. ___
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 6,750' MD 11,400'

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