



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

December 11, 2013

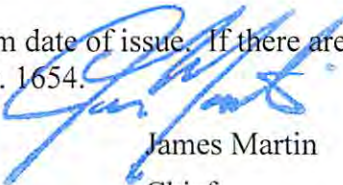
WELL WORK PLUGGING PERMIT

Plugging

This permit, API Well Number: 47-9500430, issued to GASTAR EXPLORATION USA, INC., 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.

Upon completion of the plugging well work, the above named operator will reclaim the site according to the provisions of WV Code 22-6-30. The above named operator will also file, as required in WV Code 22-6-23, an affidavit on form WR-38 by two experienced persons in the operator's employment and the Oil and Gas inspector that the work authorized under this permit was performed and a description given. Failure to abide by all statutory and regulatory provisions governing all duties and operations here under may result in suspensions or revocation of this permit and in addition may result in civil and/or criminal penalties being imposed upon the operator.

This permit will expire in two (2) years from date of issue. If there are any questions, please free to contact me at (304) 926-0499 ext. 1654.



James Martin
Chief

Operator's Well No: M.W. SPENCER NO. 21
Farm Name: SPENCER, ALVA D. ., ESTATE
API Well Number: 47-9500430
Permit Type: Plugging
Date Issued: 12/11/2013

PERMIT CONDITIONS

West Virginia Code § 22-6-11 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. In the event of an accident or explosion causing loss of life or serious personal injury in or about the well or while working on the well, the well operator or its contractor shall give notice, stating the particulars of the accident or explosion, to the oil and gas inspector and the Chief within twenty-four (24) hours.
2. Well work activities shall not constitute a hazard to the safety of persons.

1) Date: September 18, 2013
2) Operator's Well Number M.W. Spencer No.21
3) API Well No: 47 - 095 - 0430
State County Permit

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

APPLICATION FOR A PERMIT TO PLUG AND ABANDON

4) WELL TYPE: Oil X Gas X Liquid Injection _____ Waste Disposal _____
(If "Gas", Production _____ Underground Storage _____) Deep _____ Shallow X
5) LOCATION: Elevation: 1084' Watershed: Indian Creek
District: McElroy 05 County: Tyler 95 Quadrangle Shirley 7.5' 607
6) WELL OPERATOR: Gastar Exploration, Ltd. 494487685 7) DESIGNATED AGENT Mike McCown
Address 229 W. Main St., Suite 301 Address 229 W. Main St., Suite 301
Clarksburg, WV 26301 Clarksburg, WV 26301
8) OIL & GAS INSPECTOR TO BE NOTIFIED 9) PLUGGING CONTRACTOR
Name Joe Taylor Name _____
Address 497 Claylick Road Address _____
Ripley, WV 25271

10) WORK ORDER: The work order for the manner of plugging this well is as follows:

<u>CASING</u>	
13"	333' CTS
7"	2,014'
<u>LINERS</u>	

TD-2,238' Coal: NA
Gel 2238 - 2120
Plug No. 1 2120 - 1960
Freepoint, Cut & Pull 7" Casing at 1,600' (Est.)
Plug No. 2 1650 - 1550
Plug No. 3 1130 - 1030
Plug No. 4 380 - 280
Plug No. 5 100 - Surface

NOTES:

Free point, cut and pull all casing strings present. Place 100 ft. cement plug at bottom of any casing left in well.
Fill Well Bore with 6% Gel Between all Cement Plugs
Erect Monument with API No.

CEMENT PLUGS MUST BE A MINIMUM OF 100' CLASS A CEMENT WITH NO MORE THAN 3% CaCl2 AND NO OTHER ADDITIVES.

Received

NOV 6 2013

Inspector 24 hours before permitted work can commence.

Office of Oil and Gas
WV Dept. of Environmental Protection

Work order approved by Inspector

Date 10-28-13

9500430P

ENGINEERING DEPT.

RECEIVED

JUN 16 1972

JUN 13 1972



STATE OF WEST VIRGINIA
DEPARTMENT OF MINES

OIL & GAS DIVISION
DEPT. OF MINES

Oil and Gas Division

WELL RECORD

Rotary Oil
Cable Gas _____
Recycling Comb. _____
Water Flood _____ Storage _____
Disposal _____ (Kind)

Quadrangle West Union
Permit No. Tyl-430

Company Quaker State Oil Refining Corporation
Address P.O. Box 1327, Parkersburg, W.Va.
Farm M. V. Spencer Heirs Acres 258
Location (waters) Indian Creek
Well No. 21 Elev. 1084
District McElroy County Tyler
The surface of tract is owned in fee by M. V. Spencer Heirs
Address Alma, W. Va.
Mineral rights are owned by Quaker State
Address _____
Drilling Commenced 12-13-71
Drilling Completed 2-3-72
Initial open flow _____ cu. ft. _____ bbls.
Final production _____ cu. ft. per day 5 bbls.
Well open 24 hrs. before test 2 RP.

Casing and Tubing	Used in Drilling	Left in Well	Cement fill up Cu. ft. (Sks.)
Size 20-16			
Cond. 13-10"	333	333	cmt. to surface
9 5/8			
8 5/8			
7	2014	2014	
5 1/2			
4 1/2			
3			
2			
Liners Used			

Well treatment details:
Shot 100 quarts Nitro
2122 - 2160

Attach copy of cementing record.

Coal was encountered at None Feet _____ Inches _____
Fresh water None Feet _____ Salt Water None Feet _____
Producing Sand Big Injun Depth 2072

Formation	Color	Hard or Soft	Top Feet	Bottom Feet	Oil, Gas or Water	* Remarks
Shale			0'	170'		
Sand & Shale			170'	332'		
Shale			332'	498'		
Sand			498'	615'		
Shale			615'	746'		
Sand			746'	760'		
Shale			760'	808'		
Sand			808'	878'		
Shale			878'	1076'		
Sand			1076'	1100'		
Shale			1100'	1280'		
Sand			1280'	1302'		
Shale			1302'	1382'		
Sand			1382'	1472'		
Shale			1472'	1604'		
Sand (Broken)			1604'	1695'		
Shale			1695'	1742'		
Sand (Broken)			1742'	1805'		
Shale			1805'	1850'		
Sand (Broken)			1850'	1865'		
Shale			1865'	1950'		
Little Lime			1950'	1964'		
Pencil Cave			1964'	1980'		

Received

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Office of Oil and Gas
WV Dept. of Environmental Protection

(over)
* Indicates Electric Log tops in the remarks section.

Formation	Color	Hard or Soft	Top Feet	Bottom Feet	Oil, Gas or Water	• Remarks
Big Lime			1980'	2040'		
Keener			2040'	2072'		
Big Injun			2072'	2238'		
					Gas Pay 2088' - 2125'	
					Oil Pay 2125' - 2152'	

12/13/2013

Date June 12, 1972

APPROVED QUAKER STATE OIL REFINING CORP, Owner

By Don Bush
(Title) Geologist

95004308

CK 35127
100037

WW-4A
Revised 6-07
Surface Owner Copy

1) Date: September 18, 2013
2) Operator's Well Number M.W. Spencer No.21
3) API Well No: 47 - 095 - 0430
State County Permit

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS
NOTICE OF APPLICATION TO PLUG AND ABANDON A WELL

4) Surface Owner(s) to be served:
(a) Name Alva D. Spencer Estate
Address C/O Marcia Mronzinski
3471 Maradee Ct.
(b) Name Farwell, MI 48622
Address _____
(c) Name _____
Address _____
6) Inspector Joe Taylor
Address 497 Claylick Road
Ripley, WV 25271
Telephone 304-380-7469

5) (a) Coal Operator:
Name NA
Address _____
(b) Coal Owner(s) with Declaration
Name NA
Address _____
Name _____
Address _____
NA
(c) Coal Lessee with Declaration
Name _____
Address _____

TO THE PERSON(S) NAMED ABOVE: You should have received this Form and the following documents:

- 1) The Application to Plug and Abandon a Well on Form WW-4B, which sets out the parties involved in the work, and describes the well and its location and the plugging work order; and
- 2) The plat (surveyor's map) showing the well location on Form WW-6

The reason you have received these documents is that you have rights regarding the application which are summarized in the instructions on the reverse side. However, you are not required to take any action at all.

Take notice that under Chapter 22-6 of the West Virginia Code, the undersigned well operator proposes to file or has filed this Notice and Application and accompanying documents for a permit to plug and abandon a well with the Chief of the Office of Oil and Gas, West Virginia Department of Environmental Protection, with respect to the well at the location described on the attached Application and depicted on the attached Form WW-6. Copies of this Notice, the Application, and the plat have been mailed by registered or certified mail or delivered by hand to the person(s) named above (or by publication in certain circumstances) on or before the day of mailing or delivery to the Chief.

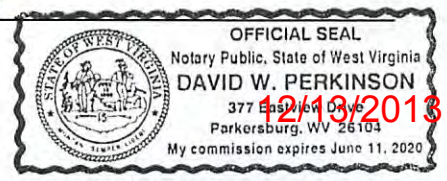
Received
NOV 6 2013

Well Operator Gastar Exploration, Ltd.
By: Mike McCown
Its: COO & Designated Agent
Address 229 W. Main St., Suite 301
Clarksburg, WV 26301
Telephone (304) 622-4796

Subscribed and sworn before me this 4th day of October, 2013

David W. Perkinson Notary Public

My Commission Expires June 11, 2020



SURFACE OWNER WAIVER

Operator's Well
Number

M.W. Spencer No.21
47- 095- 0430

INSTRUCTIONS TO SURFACE OWNERS NAMED ON PAGE WW4-A

The well operator named on page WW-4A is applying for a permit from the State to plug and abandon a well. (Note: If the surface tract is owned by more than three persons, then these materials were served on you because your name appeared on the Sheriff's tax ticket on the land or because you actually occupy the surface tract. In either case, you may be the only owner who will actually receive these materials.) See Chapter 22 of the West Virginia Code. Well work permits are valid for 24 months. If you do not own any interest in the surface tract, please forward these materials to the true owner immediately if you know who it is. Also, please notify the well operator and the Office of Oil and Gas.

NOTE: YOU ARE NOT REQUIRED TO FILE ANY COMMENT.

WHERE TO FILE COMMENTS AND OBTAIN ADDITIONAL INFORMATION:

Chief, Office of Oil and Gas
Department of Environmental Protection
601 57th St. SE
Charleston, WV 25304
(304) 926-0450

Time Limits and methods for filing comments. The law requires these materials to be served on or before the date the operator files his Application. You have **FIVE (5) DAYS** after the filing date to file your comments. Comments must be filed in person or received in the mail by the Chief's office by the time stated above. You may call the Chief's office to be sure of the date. Check with your postmaster to ensure adequate delivery time or to arrange special expedited handling. If you have been contacted by the well operator and you have signed a "voluntary statement of no objection" to the planned work described in these materials, then the permit may be issued at any time.

Comments must be in writing. Your comments must include your name, address and telephone number, the well operator's name and well number and the approximate location of the proposed well site including district and county from the application. You may add other documents, such as sketches, maps or photographs to support your comments.

The Chief has the power to deny or condition a well work permit based on comments on the following grounds:

- 1) The proposed well work will constitute a hazard to the safety of persons.
- 2) The soil erosion and sediment control plan is not adequate or effective;
- 3) Damage would occur to publicly owned lands or resources;
- 4) The proposed well work fails to protect fresh water sources or supplies;
- 5) The applicant has committed a substantial violation of a previous permit or a substantial violation of one or more of the rules promulgated under Chapter 22, and has failed to abate or seek review of the violation..."

If you want a copy of the permit as it is issued or a copy of the order denying the permit, you should request a copy from the Chief.

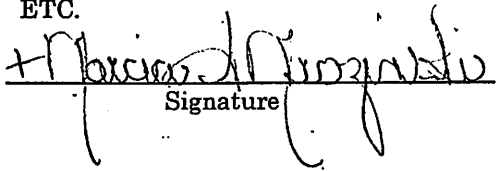
VOLUNTARY STATEMENT OF NO OBJECTION

I hereby state that I have read the instructions to surface owners and that I have received copies of a Notice and Application For A Permit To Plug And Abandon on Forms WW-4A and WW-4B, and a survey plat.

I further state that I have no objection to the planned work described in these materials, and I have no objection to a permit being issued on those materials.

FOR EXECUTION BY A NATURAL PERSON
ETC.

FOR EXECUTION BY A CORPORATION,


 Date 11/5/2013 Name _____
 Signature By _____
 Its _____

 Date

Signature _____ Date **12/13/2013**

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 Gastar Exploration, Ltd. OP Code 494487685
Watershed Indian Creek Quadrangle Shirley 7.5'
Elevation 1084' County Tyler District McElroy

Description of anticipated Pit Waste: Fluids encountered in plugging subject well

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

Will a synthetic liner be used in pit? Yes If so, what mil.? 10 20

Proposed Disposal Method For Treated Pit Wastes:
X Land Application
 Underground Injection (UIC Permit Number)
 Reuse (at API Number)
 Off Site Disposal (Supply Form WW-9 for disposal location)
 Other (Explain)

Drilling medium anticipated for this well? Air, fresh water, oil based, etc. NA
- If oilbased, what type? Synthetic, petroleum, etc.

Additives to be used?

Drill cuttings disposal method? Leave in pit, landfill, removed offsite, etc. NA
- If left in pit and plan to solidify, what medium will be used? Cement, lime, sawdust NA
- Landfill or offsite name/permit number?

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.

Received

Company Official Signature *Mike McCown*
Company Official (Typed Name) Mike McCown NOV 6 2013
Company Official Title COO & Designated Agent

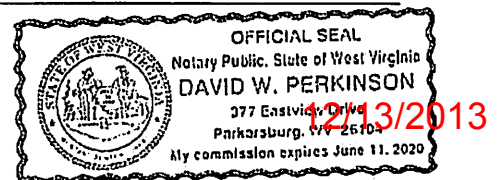
Office of Oil and Gas
Department of Environmental Protection

Subscribed and sworn before me this 4th day of October, 2013

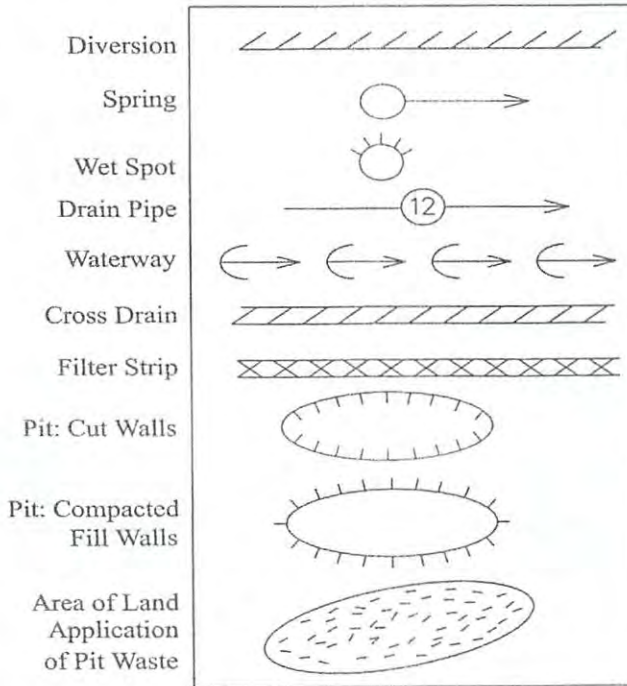
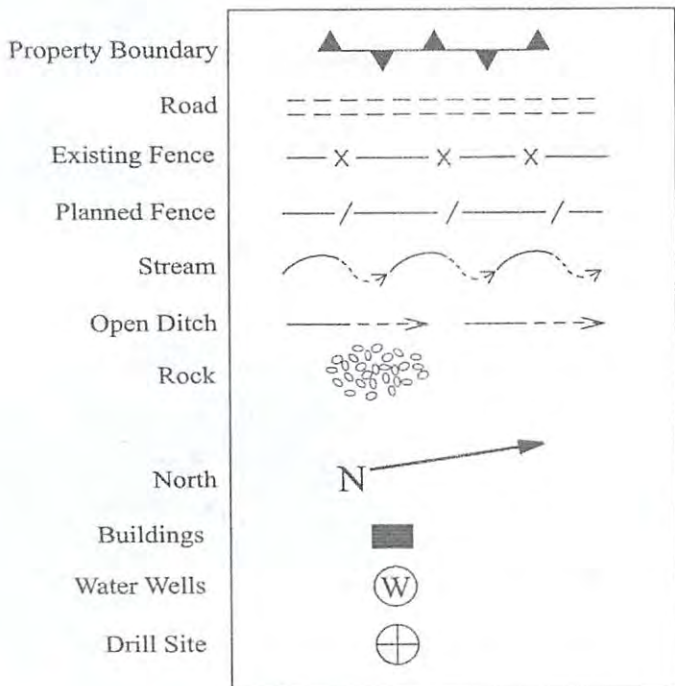
David W. Perkinson

Notary Public

My commission expires June 11, 2020



Legend



Proposed Revegetation Treatment: Acres Disturbed Area I Approx. 0.2 Ac. Prevegetation pH _____
Area II Approx. 0.1 Ac.
 Lime 2 Tons/Acre or Correct to pH 6.5
 Fertilizer (10-20-20 or Equivalent) 500 Lbs./Acre (500 lbs. Minimum)
 Mulch Straw 2 Tons/Acre

SEED MIXTURES

<u>Area I (Location)</u>	
Seed Type	Lbs./Ac.
Tall Fescue	40
Ladino Clover	5

<u>Area II (Road)</u>	
Seed Type	Lbs./Ac.
Tall Fescue	40
Ladino Clover	5

Attach:
 Drawing(s) of road, location, pit and proposed area for land application
 Photocopied section of involved 7.5' topographic sheet.

Plan Approved by: [Signature]
 Comments: _____

Title: Inspector

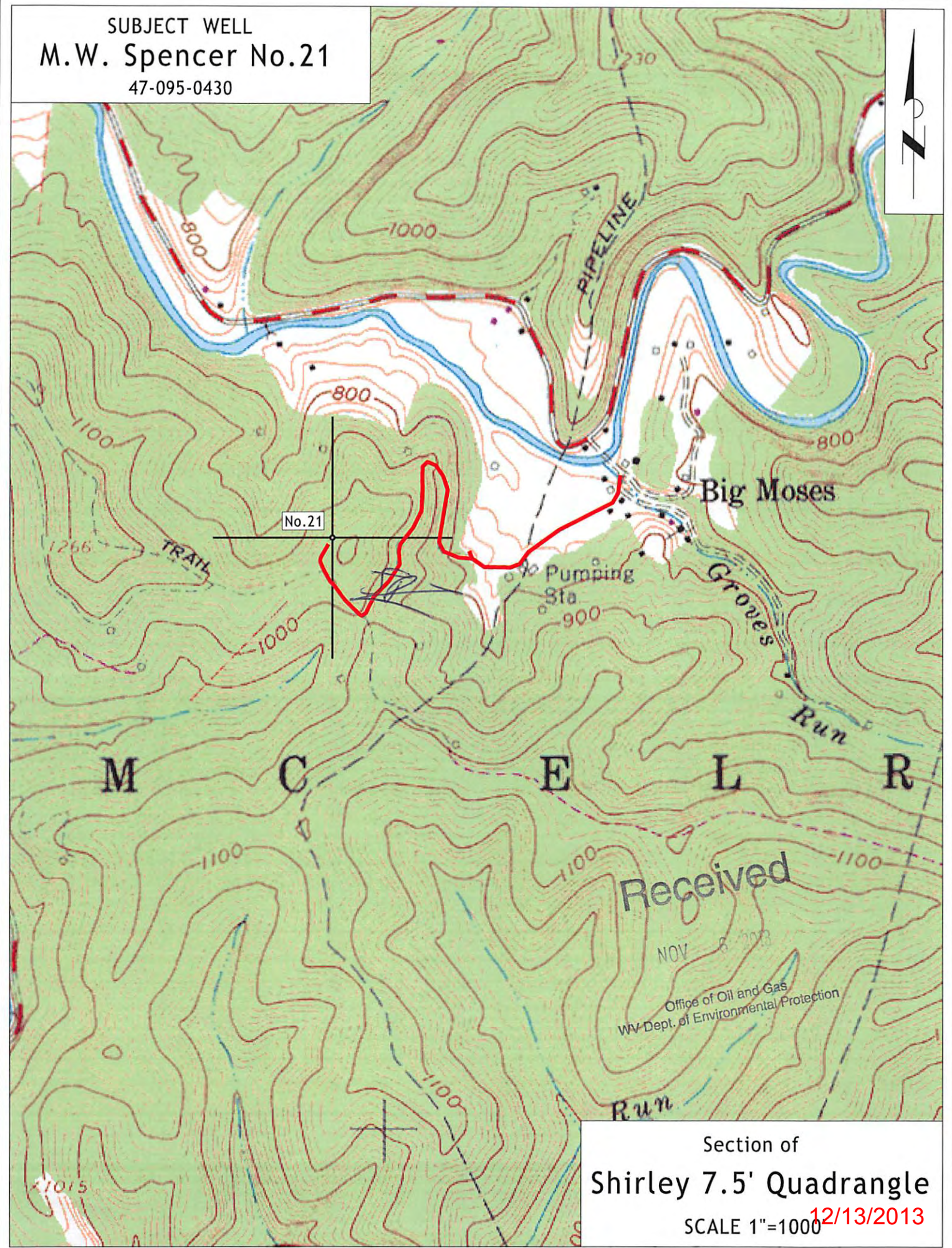
Field Reviewed? X Yes _____ No

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 NOV 6 2013
 WV Dept. of Oil and Gas
 Office of Environmental Protection

Date: 10-28-13

9500430P

SUBJECT WELL
M.W. Spencer No.21
47-095-0430



Section of
Shirley 7.5' Quadrangle
SCALE 1"=1000
12/13/2013

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NOV 8 2013
Office of Oil and Gas
WV Dept. of Environmental Protection

West Virginia Department of Environmental Protection
Office of Oil & Gas

WELL LOCATION FORM: GPS

API: 47- 095 - 0430 WELL NO: No.21

FARM NAME: M.W. Spencer

RESPONSIBLE PARTY NAME: Gastar Exploration, Ltd.

COUNTY: Tyler DISTRICT: McElroy

QUADRANGLE: Shirley 7.5'

SURFACE OWNER: Alva D. Spencer Estate

ROYALTY OWNER: Alva D. Spencer Estate

UTM GPS NORTHING: 4,364,545 (NAD 83)

UTM GPS EASTING: 517,819 (NAD 83) GPS ELEVATION: 330 m. (1084 ft)

The Responsible Party named above has chosen to submit GPS coordinates in lieu of preparing a new well location plat for a plugging permit on the above well. The Office of Oil & Gas will not accept GPS coordinates that do not meet the following requirements:

1. Datum: NAD 1983, Zone:17 North, Coordinate Units: meters, Altitude: height above mean sea level (MSL) - meters.
2. Accuracy to Datum - 3.05 meters
3. Data Collection Method:

Survey Grade GPS	<input type="checkbox"/>	Post Processed Differential	<input type="checkbox"/>
		Real-Time Differential	<input type="checkbox"/>
Mapping Grade GPS	<input checked="" type="checkbox"/>	Post Processed Differential	<input checked="" type="checkbox"/>
		Real-Time Differential	<input type="checkbox"/>

Received

NOV 6 2013

I the undersigned, hereby certify this data 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 Office of Oil and Gas.

Mike McCown
Signature

COO & Designated Agent
Title

September 18, 2013
Date