west virginia department of environmental protection

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

Harold D. Ward, Cabinet Secretary
www.dep.wv.gov

Monday, March 29, 2021

WELL WORK PLUGGING PERMIT
Coal Bed Methane Well Plugging

BOONE EAST DEVELOPMENT CO., LLC
PO BOX 261
JULIAN, WV 25529

Re: Permit approval for PC-026C
47-109-02606-00-00

This well work permit 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 any additional specific 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. Please be advised that form WR-38, Affidavit of Plugging and Filling Well, is to be submitted to this office within 90 days of 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.

Per 35 CSR 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- 0450.

James A. Martin
Chief

Operator's Well Number: PC-026C
Farm Name: HEARTWOOD FORESTLAND
U.S. WELL NUMBER: 47-109-02606-00-00
Coal Bed Methane Well Plugging
Date Issued: 3/29/2021

Promoting a healthy environment.

04/02/2021

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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. All pits must be lined with a minimum of 20 mil thickness synthetic liner.

2. 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.

3. Well work activities shall not constitute a hazard to the safety of persons.

04/02/2021

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WW-4B
Rev. 2/01

1) Date 01/11, 2021
2) Operator's Well No. PC-026C
3) API Well No. 47- 109 - 02606

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 ____ / Gas X / Liquid injection ____ / Waste disposal ____ /
(If "Gas, Production X or Underground storage ____) Deep ____ / Shallow X

5) Location: Elevation 1,762 Watershed Shop Branch of Indian Creek of Guyandotte River
District Baileysville County Wyoming Quadrangle Pineville

6) Well Operator Boone East Development Co., LLC
Address 636 Shelby Street, 3rd Floor
Bristol, TN 37620

7) Designated Agent ____
Address ____

8) Oil and Gas Inspector to be notified
Name Gary Kennedy
Address 66 Old Church Lane
Pipestem, WV 25979

9) Plugging Contractor
Name Ultra Production Company, LLC
Address PO Box 289
Cedar Bluff, VA 24609

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

To facilitate coal mining operations, the horizontal CBM well PC-026C is intended to be plugged in a 4 stage process. The first stage will be the infusion of approximately 24,000 gallons of water into the Pocahontas 3 coal seem. The second stage will be the injection of a 2% bentonite solution in 74,000 gallons of water at an approximate rate of 100 gallons per minute. The third stage will be the injection of approximately 212,000 gallons of water. Lastly the vertical portion of the well will then be plugged in its entirety using Class A cement with no more than 3% CaCl2, and no other additives from a depth of 1,146' to the surface. A monument will be placed no less than 10' below the surface to no less than 30" above the surface with a minimum of 6" casing. The casing shall be filled with cement and follow further requirements of WV State Code 35 CSR 4 Section 5.5 Identification Markings.

Approximate Timeframe?

Notification must be given to the district oil and gas inspector 24 hours before permitted work can commence.

Work order approved by inspector Gary Kennedy Date 1/19/21

04/02/2021

4710902606CP

ULTRA
Production Company, LLC
P.O. Box 289
Cedar Bluff, Virginia 24609
Telephone (276) 345-9161
Telefax (540) 301-5996

January 13, 2021

WV DEP Office of Oil and Gas
601 57th Street, SE
Charleston, WV 25304

RE: Plugging Permit for 47-109-02606 (PC-026C)

Please find enclosed on behalf of Boone East Development Co., LLC, the permit application for plugging the horizontal CBM Well PC-026C (API 47-109-02606), located in Wyoming County, West Virginia. This well is being plugged due to the advancement of underground mining activities and to ensure the safety of such operations please refer to Item 10 of Form WW-4B for the procedures of the work to be performed. Should you have any questions or concerns in regards to this application, please feel free to contact me using the information provided below.

Sincerely,

Andy Hrovatic
Ultra Production Company, LLC
Cell: 276-970-6431
Email: ahrovatic@ultraproductioncompany.com

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04/02/2021

should contain the name, address and telephone number of the person filing the comment, the well operator's name and well number, and the approximate location of the proposed well site including district and county as indicated in the permit application. Comments may be accompanied by other pertinent documents in support of the comment. Other than as prescribed in this rule, no particular form for the comment is prescribed.

5.5. Identification Markings.

5.5.a. Every well shall have attached or stamped, in a permanent manner, the API identification number which consists of the state (47), county (001 through 109), and permit number. Such number shall be no less than one-half (1/2) inch in height and detectable by any interested person approaching the well. Any additional information the well operator may desire to display may be incorporated in the permanent identification plat or stamp in such a manner that it will not confuse or distort the permanent API identification number.

5.5.b. Except as provided below, upon the completion of the plugging and filling of any abandoned well, a permanent monument or marker consisting of a length of pipe (minimum diameter size six (6) inches) filled with concrete (or the equivalent thereof if approved by the Chief) shall be erected over the well; the marker shall extend no less than thirty (30) inches above the surface and not less than ten (10) feet below the surface and into the well, and shall be sealed with concrete for the purpose of making the marker permanent. The API well identification number which consists of the state (47), county (001 through 109), and permit number shall be attached or stamped in a permanent manner to said monument; and such numbering shall be no less than one half (1/2) inch in height and detectable by any interested person approaching the marker. The erection of the marker shall in no way interfere with the bleeder pipe from the well where such pipe is required, or the vent or other device installed pursuant to W. Va. Code § 22-6-24. Such manner shall be accurately described on Form WR-38, "Affidavit of Plugging and Filling Well" (*see* subsection 13.10 below) as to time and manner of plugging and filling the well, and shall be approved by the Chief as a satisfactory landmark that may be used as such in the location of adjacent wells. Two (2) permanent reference points with courses and distances from the abandoned well shall be designated and prescribed on the plat required by subdivision 5.2.d above in the form prescribed by section 9 below, accompanying Form WW-4, "Notice of Intention to Plug and Abandon a Well," if any change in the plat is necessary, accompanying Form IV-38, "Affidavit of Plugging and Filling Well" (*see* subsection 13.10 below).

5.6. Parties Responsible. All contractors and drillers, including all service companies carrying on business or doing work in oil and gas fields in West Virginia, as well as lease holders and operators generally, shall take notice of and are hereby directed to observe and apply the provisions of W. Va. Code § 22-6 and this rule; and all contractors, drillers, service companies and operators shall be held responsible for violations thereof.

5.7. Evidence of Performance.

5.7.a. After the completion of the work authorized to be done by any permit required by W. Va. Code § 22-6-6, the permittee shall comply with filing requirements of W. Va. Code § 22-6-22 and section 12 of this rule.

5.7.b. In addition to the requirements of subdivision 5.7.a, following completion of plugging a well, the permittee shall also comply with the affidavit requirements of W. Va. Code § 22-6-23 and subsection 13.10 below.

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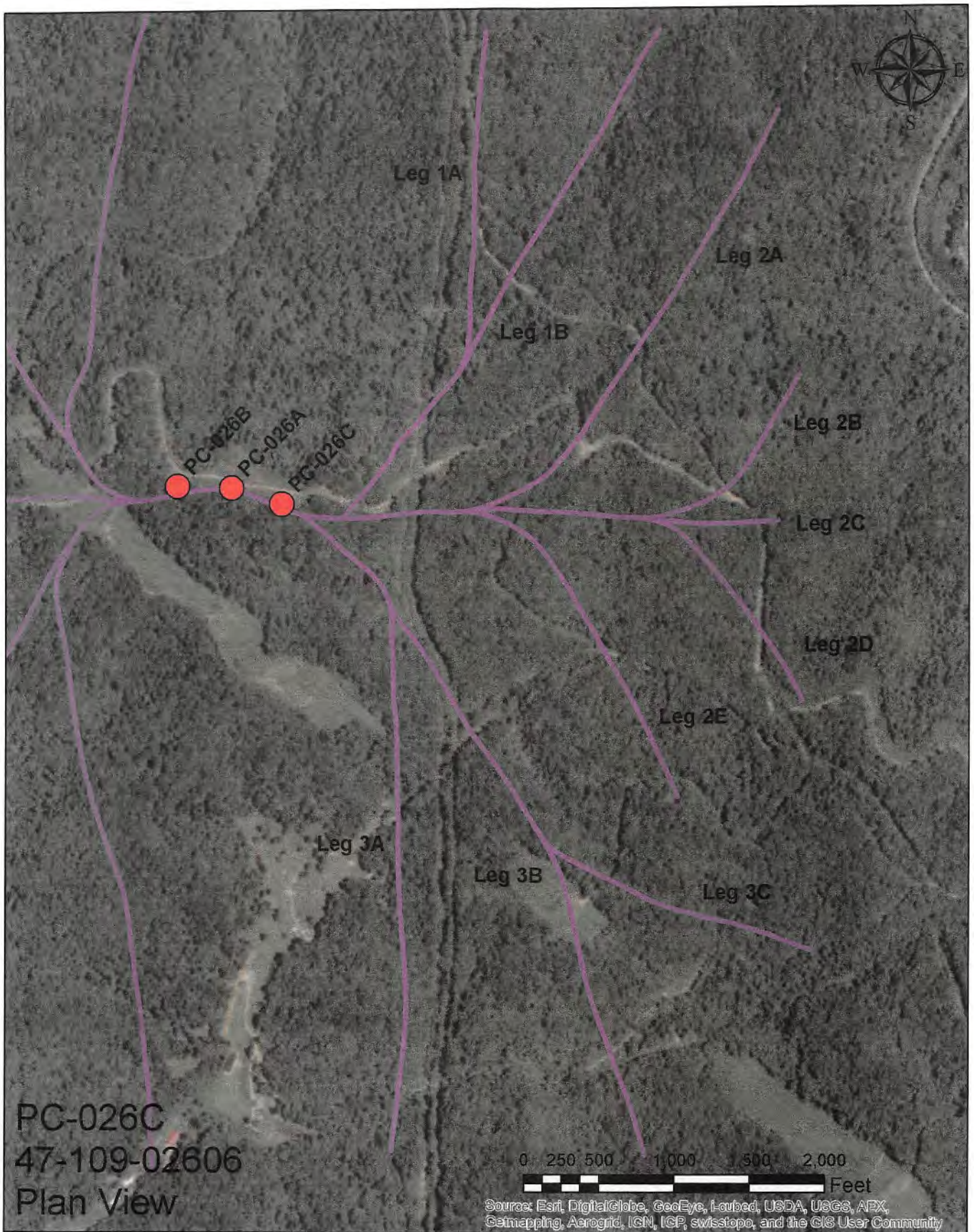

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Ultra Production Company, LLC
Plugging Volumes
PC-026C

WR-35 Addendum
1/8/2021
47-109-02606

	Footage	Diameter (in)	Volume (CuFt)	Beginning X Coord	Beginning Y Coord.	Ending X Coord.	Ending Y Coord.
PC-026C	1,146	7	306.12	4,159,273.20	445,490.58	-	-
Leg 1A	3,652	4.5	403.15	4,159,273.24	445,399.31	4,160,000.67	445,808.05
Leg 1B	1,697	4.5	187.33	4,159,465.94	445,762.86	4,160,000.39	446,087.89
Leg 2A	3,342	4.5	368.93	4,159,234.80	445,573.95	4,159,870.95	446,277.87
Leg 2B	2,023	4.5	223.32	4,159,243.68	445,770.73	4,159,454.07	446,308.03
Leg 2C	645	4.5	71.20	4,159,230.74	446,053.45	4,159,226.24	446,271.48
Leg 2D	1,256	4.5	138.65	4,159,228.48	446,069.63	4,158,943.07	446,309.88
Leg 2E	1,913	4.5	211.18	4,159,243.38	445,769.74	4,158,792.44	446,107.51
Leg 3A	2,850	4.5	314.61	4,159,240.79	445,506.54	4,158,232.99	445,646.61
Leg 3B	3,683	4.5	406.57	4,159,100.87	445,647.15	4,158,225.40	446,053.79
Leg 3C	1,734	4.5	191.42	4,158,730.68	445,889.53	4,158,547.26	446,323.02
			2,822.47				

OR 21,112 GALLONS

*Coordinate Values: UTM - NAD 83 - 17 North - Meters

4710902606CP

WR-35

API # 47- 109-02606C

State of West Virginia
Division of Environmental Protection
Section of Oil & Gas
Well Operator's Report of Well Work

Farm name: Heartwood Forestland Operator Well No: PC-026C

Location: Elevation: 1762.17' Quadrangle: Pineville

District: Baileysville County: Wyoming

Latitude: 9904 Feet South of 37 Deg. 35 Min. 00 Sec.
Longitude: 1658 Feet West of 81 Deg. 35 Min. 00 Sec.

Company: CDX Gas, LLC
P.O. Box 609
Pineville, WV 24874

Agent: JOSEPH A. ZUPANICK

Inspector: Barry Stollings
Permit Issued: 11/14/2005
Well Work commenced: 1/9/2006
Well Work completed: 2/10/2006
Verbal plugging
Permission granted on:
Rotary x Cable _____ Rig
Total depth (ft) 1146'.
Fresh water depths (ft) N/A
Salt water depths (ft) N/A
Is coal being mined in the area (Y/N)? Y
Coal depths (ft): 1096'.

Casing & Tubing Size	Used in Drilling	Left in Well	Cement Fill up Cu.ft.
13 3/8"	32	32	22.2
9 5/8 "	498	498	156
7"	1062	1062	159.6
2 7/8"	1096	1096	Hanging

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OPEN FLOW DATA

Producing formation Poca No.3 Pay zone depth (ft) 1096'
Gas: Initial open flow N/A Mcf/d Oil: Initial open flow _____ Bbl/d
Final open flow N/A Mcf/d Final open flow _____ Bbl/d
Time of open flow between initial and final tests: _____ hours
Static rock pressure _____ psig (surface pressure) after _____ hours

Second Producing formation _____ Pay zone depth _____ (ft)
Gas: Initial open flow _____ Mcf/d Oil: Initial open flow _____ Bbl/d
Final open flow _____ Mcf/d Final open flow _____ Bbl/d
Time of open flow between initial and final tests: _____ hours
Static rock pressure _____ psig (surface pressure) after _____ hours

Third Producing formation _____ Pay zone depth _____ (ft)
Gas: Initial open flow _____ Mcf/d Oil: Initial open flow _____ Bbl/d
Final open flow _____ Mcf/d Final open flow _____ Bbl/d
Time of open flow between initial and final tests: _____ hours
Static rock pressure _____ psig (surface pressure) after _____ hours

Note: ON BACK OF THIS FORM, PUT THE FOLLOWING: 1) DETAILS OF PERFORATED INTERVALS, FRACTURING OR STIMULATING, PHYSICAL CHANGE, ETC. 2) THE WELL LOG WHICH IS A SYSTEMATICK DETAILED GEOLOGICAL RECORD OF ALL FORMATIONS, INCLUDING COAL ENCOUNTERED BY THE WELLBORE.

Charles T. Akers
For: CDX Gas, LLC
By: [signature]
Date: 5/10/06

MAY 19 2006

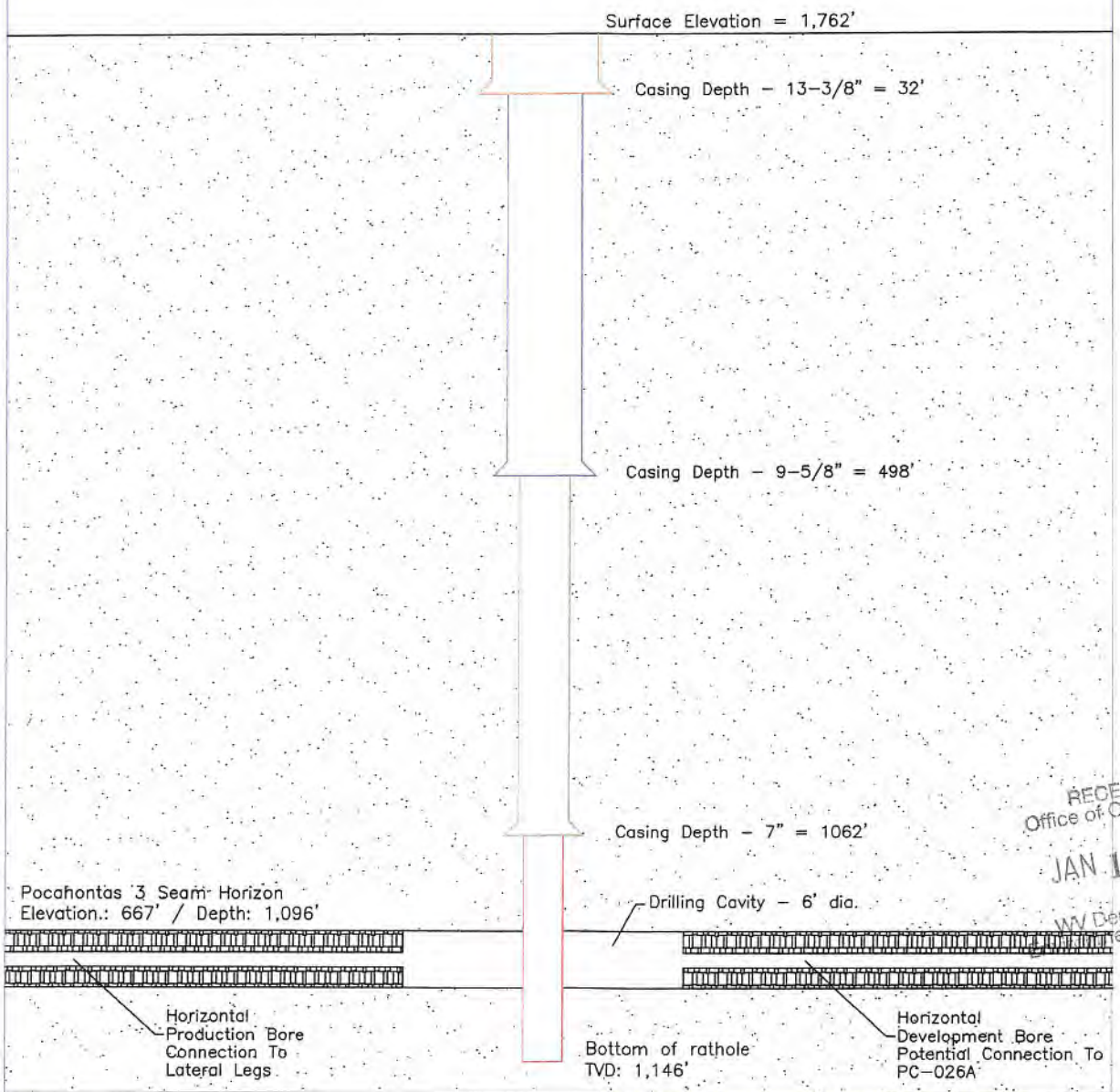
WYO 26060

04/02/2021

4710902606CP

WELL NO. PC-026C

API: 47-109-02606



LEGEND

- Coal Seam
- 13 3/8" Diameter Casing
- 9 5/8" Diameter Casing
- 7" Diameter Casing
- Open Hole / No Casing

PC-026C Well Profile

Information gathered from WV - DEP - Oil & Gas Form WR-35

SCALE: NTS	ULTRA PRODUCTION CO., LLC 112 River Road, PO Box 289 Cedar Bluff, VA 24609	DRAWN BY: AH
DATE: 01/08/2020		FILE: Well Profiles

04/02/2021

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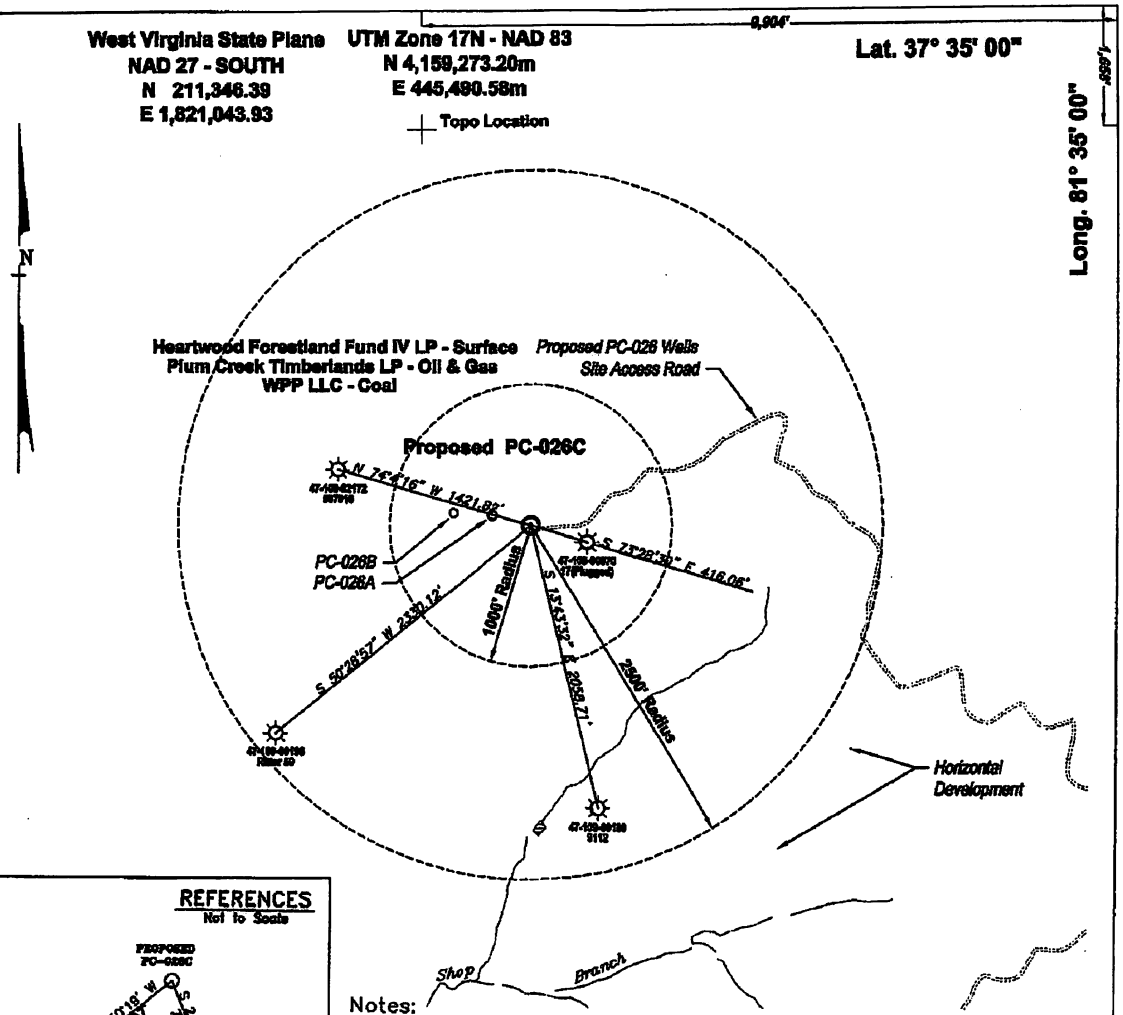
West Virginia State Plane
NAD 27 - SOUTH
N 211,346.39
E 1,821,043.93

UTM Zone 17N - NAD 83
N 4,159,273.20m
E 445,490.58m

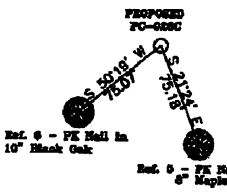
Topo Location

Lat. 37° 35' 00"

Long. 81° 35' 00"



REFERENCES
Not to Scale



Notes:
No Dwellings exist within 200 feet of the PC-026C well head
No Domestic Wells within 1000' of the PC-026C well head
Property Information taken from Wyoming Co. Tax Records
(+) Denotes location of well on USGS map.

FILE No. CDX Gas
DIRECTORY C:\CDX Gas\CDX-2005\PC-026
DRAWING NAME PlatPC-026C.dwg
SCALE 1" = 1000'
MINIMUM DEGREE OF ACCURACY 1 : 2500
PROVEN SOURCE OF ELEVATION GPS GLOBAL POSITIONING SYSTEM (Sub meter accuracy)

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 DEPARTMENT OF MINES.

(SIGNED) _____ R.P.E. _____ L.L.S. 1065

JOHN E. CAFFREY LICENSED No. 1065 STATE OF WEST VIRGINIA PROFESSIONAL SURVEYOR

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

DATE OCTOBER 18, 2005
OPERATOR'S WELL No. PC-026C

API WELL No. 47 - 109 - 026060
STATE COUNTY PERMIT

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WELL TYPE: OIL ___ GAS X LIQUID INJECTION ___ WASTE DISPOSAL ___
(IF "GAS") PRODUCTION X STORAGE ___ DEEP ___ SHALLOW ___ CBM X
LOCATION: ELEVATION 1762.17 WATER SHED SHOP BRANCH OF INDIAN CREEK OFF GUYANDOTTE RIVER
DISTRICT BAILEYSVILLE COUNTY WYOMING
QUADRANGLE PINEVILLE, WV
SURFACE OWNER HEARTWOOD FORESTLAND FUND IV LP ACREAGE 2694.26 (Tax Map 116, Parcel P/O 111-7)
ROYALTY OWNER PLUM CREEK TIMBERLANDS LP LEASE ACREAGE 60,372.5
LEASE No. _____
PROPOSED WORK: DRILL X CONVERT ___ DRILL DEEPER ___ REDRILL ___ FRACTURE OR STIMULATE ___ PLUG OFF OLD FORMATION ___ PERFORATE NEW FORMATION ___ OTHER PHYSICAL CHANGE IN WELL (SPECIFY) _____
PLUG AND ABANDON ___ CLEAN OUT AND REPLUG ___
TARGET FORMATION POCAHONTAS NO. 3 AND PENN COALS ESTIMATED DEPTH 1130
WELL OPERATOR CDX Gas, LLS DESIGNATED AGENT JOSEPH A. ZUPANICK
ADDRESS PO Box 609 ADDRESS PO BOX 609
Pineville, WV 24874 PINEVILLE, WV 24874

NOV 18 2005

WV Dept. of Environmental Protection

04/02/2021

4710902606CP

MSHA 101 C EXEMPTION

REVISED MAY 11, 2010
ADDENDUM TO VENTILATION PLAN
SPARTAN MINING COMPANY
ROAD FORK #51 MINE
MSHA ID# 46-01544
WVOMHST PERMIT # U-4001-05

PROCEDURE FOR MINING THROUGH HORIZONTAL COALBED METHANE WELLS

Background:

It is anticipated that the in-seam methane in some of the Mine #51 reserve areas will be reduced prior to mining by development of both horizontal and vertical coalbed methane wells, with horizontal wells being the predominant methodology. It is anticipated that the horizontal wells will be multi-lateral and of pinnate pattern, similar to the CDX Gas, Inc. wells drilled in adjacent reserve areas. The surface wellheads for the horizontal wells will typically be 800' or more above the pavement of the coal seam. Each lateral wellbore in the coal seam will be 4" to 6" in diameter, and may be up to 4,000' in length in-seam.

Mine #51 will employ the continuous mining room-and-pillar method of mining. It is anticipated that each lateral wellbore will be mined through at least once.

A factor of major importance to be considered for the case of Road Fork #51 Mine to mine through horizontal coalbed methane wells is that the mine is ventilated via a predominantly positive pressure ventilation system. This blowing type fan system greatly enhances the proposed procedures and safety procedures outlined through this addendum in that positive pressure is constantly applied against any intersected wellbore. A 9 ft diameter return shaft with exhausting fan is within the system and does assist the system is a push/pull scenario, but the positive pressure effect far overpowers the negative pressure effect leaving the exhausting fan to act primarily as a helper fan. With the open atmosphere vertical well bore, ventilation air at the intersection of the lateral well bore will effectively seek to vent itself to the open atmosphere through the well bore and vertical well, the path of least resistance. Any gas accumulating in the lateral bores will have to build to a pressure exceeding the ventilation pressure of the fan before it will vent to the mine void. This is in the direct opposite of exhaust fan systems which are the norm in the industry and have a negative pressure effect.

Wells to be encountered or intersected at this time.

Be advised that each coal bed methane well system consists of two vertical wellbores with a common set of horizontal production wellbores or branch line system. The first vertical well drilled is the well or bore from which all horizontal legs and branches are developed. The second vertical well drilled is the actual production well. This second vertical well is the conduit by which the gas is brought to the surface as well as any water or impurities that accumulate at the bottom of the vertical well during the extraction process. No vertical wells are currently proposed for cut through. See Attachment - Cross-Section of Typical Well System.

Well no PC-002A was drilled prior to PC-002B and was used to drill or establish the horizontal branch system. Its API No. is 47-109-02724. The well was then intersected by the production well PC-002B. Well PC-002A is a non-producing well.

Well no. PC-002B was drilled and began initial production on 12/12/06. Its API No. is 47-109-02725. The horizontal bore diameter is 4 5/8" diameter. The vertical well is cased with 7" diameter casing.

REVISED MAY 11, 2010
ADDENDUM TO VENTILATION PLAN
SPARTAN MINING COMPANY
ROAD FORK #51 MINE
MSHA ID# 46-01544
WVOMHST PERMIT # U-4001-05

cemented in place, to a depth of 726' or 87' above the coal seam. The well's maximum horizontal depth is 3,414 ft. The horizontal legs are completely within the Pocahontas No. 3 coal seam. The well is not yet abandoned but will be abandoned shortly after issuance of this revision. The current average production pressure is -3 p.s.i. (gauge) as the well is operated on vacuum. Current average production is 72 MCF/day. Maximum average production of 618 MCF/day occurred in January, 2007. The well has produced a total of 324,573 MCF through the end of 2009. A summary of the well's production history, taken from the WVDEP Office of Oil & Gas website, is attached. Peak well pressure would have occurred prior to initial production in December, 2006 and is estimated to have been 352 p.s.i. or less, based on 813' of seam cover. Average well life is estimated at 5 years.

Well no.PC-003A was drilled prior to PC-003B and was used to drill or establish the horizontal branch system. Its API No. is 47-109-02768. The well was then intersected by the production well PC-003B. Well PC-002A is a non-producing well.

Well no. PC-003B was drilled and began initial production on 12/21/06. Its API No. is 47-109-02769. The horizontal bore diameter is 4 5/8" diameter. The vertical well is cased with 7" diameter casing, cemented in place, to a depth of 909', or 184' above the coal seam. The well's maximum horizontal depth is 3,944 ft. The horizontal legs are completely within the Pocahontas No. 3 coal seam. The well is not yet abandoned but will be abandoned shortly after issuance of this revision. The current average production pressure is -1 p.s.i. (gauge) as the well is operated on vacuum. Current average production is 87 MCF/day. Maximum average production of 895 MCF/day occurred in April, 2007. The well has produced a total of 361959 MCF through the end of 2009. A summary of the well's production history, taken from the WVDEP Office of Oil & Gas website, is attached. Peak well pressure would have occurred prior to initial production in December, 2006 and is estimated to have been 473 p.s.i. or less, based on 1,093' of seam cover. Average well life is estimated at 5 years.

Equipment used to drill the well and borings was not immediately available from the well operator. The accuracy of the machine was reported from the operator as a maximum deviation of 25 feet in 3,000 feet of boring. That equates to an accuracy of +/- 0.48 degrees or 0 degrees 28 minutes and 39 seconds. We propose an accuracy factor over double that or +/- 1 degree plus an addition static barrier of 50 feet.

Procedure for Mining Within 50' + 1 Degree Factor of A Horizontal Wellbore:

Prior to mining within 50' + 1 degree deviation or accuracy factor (tangent of 1 degree multiplied by the length of the horizontal wellbore at the anticipated cut-through point) of a horizontal wellbore, Spartan Mining Company ("Spartan") will verify that the following procedures have been performed on the well:

1. Prior to the mining unit entering the minimum barrier zone established for the CBM well and/or well bores or set of intersections, a notice from a professional engineer will be submitted to the District Manager noting that a review of the proposed method(s) to prepare coal bed methane wells for intersection has been completed and that the applicability of the proposed system or procedures in regard to the mine specific conditions is appropriate. A section advancing seven

entries, all entries intersecting a single well bore would be deemed a set of intersections and one would be deemed

2. The well will be vented to outside atmospheric pressure for at least 8 hours.
3. A volume of fresh water sufficient to fill the horizontal (lateral) wellbores, plus 25%, will be injected into the well. Fresh water will be injected at an approximate flow rate of 2,500 gph. Fresh water only injection will be gravity fed, not pressure injected. A daily record of water quantities pumped and pumping times will be recorded and maintained.
4. A volume of gel, sufficient to fill the horizontal wellbores plus 25% excess, will be injected into the well. Gel formulation will be a simple mixture of made up of 2% to 4% bentonite and fresh water with no other additives. The bentonite and water formulation will be pumped at an approximate flow rate of 2,500 gph and with either (a) sufficient pressure to attain a bottom hole pressure of approximately 500 p.s.i., or (b) sufficient volume to equal or exceed 200% of the volume of the horizontal wellbores. Because no gel has yet been pumped or injected, no background data has been gathered or obtained for this area or these strata and therefore no gel infiltration and permeability reduction data are yet available. A daily record of gel quantities pumped and pumping times will be recorded and maintained.
5. The well bore will be filled to the surface with fresh water, if possible, and allowed to stand for at least 72 hours, with the water level being supplemented as required. In the alternative, water will be injected into the wellbore for 72 hours at an average rate of 2 gallons per minute or more.
6. A record will be prepared, maintained and signed by the drill/pump operator outlining the procedures of all well or hole preparations. Specifics to be recorded shall at a minimum be as follows: 1. Time of well or hole opening for venting purposes and duration. 2. Any test results showing levels of venting gases and times. 3. Water injection showing quantities, times, pumping pressure and flow rates. 4. Gel formulation. 5. Gel quantity. 6. Pumping pressures. 7. Pumping times. 8. Quantities, flow rates and pumping times for well evacuations or bailing shall be documented as well.

Procedure for Mining Through A Horizontal Wellbore (Initial Minethrough):

Prior to mining through the first lateral wellbore of a horizontal coalbed methane well, Spartan will verify that the following procedures have been performed on the well:

a. The water will be bailed from the vertical section of the wellbore, as close to the coal seam elevation as practical using normal bailing equipment.
b. The surface wellhead will be maintained open, so as to bring the vertical section of the wellbore to outside atmospheric pressure.

In addition, Spartan will:

c. Notify the MSHA District Manager and the appropriate WVOMHST representative at least 72 hours prior to the anticipated minethrough time.

REVISED JUNE 03, 2013
ADDENDUM TO VENTILATION PLAN
SPARTAN MINING COMPANY
ROAD FORK #51 MINE
MSHA ID# 46-01544
WVOMHST PERMIT # U-4001-05

d. Drivage sites or site lines shall be installed prior to mining within 80 ft. of the projected well cut-through. Drivage sites or site lines set in excess of 100 ft. prior to well bore intersection will not be deemed to comply with this requirement.

e. A mobile sled or trailer will be stocked and maintained with equipment and supplies as outlined herein on the working section at all times. The sled or trailer will be positioned at or near (not to exceed 500 feet outby) the last open crosscut near the projected mine through immediately upon reaching the minimum barrier distance. The trailer or sled will be labled as "Firefighting Equipment and Emergency Supplies for CBM Minethroughs" to distinguish it from general supply or stationary equipment stores. Equipment or supplies required on this sled or trailer are:

1. Firefighting equipment to include a minimum of two 10-pound fire extinguishers, 240 pounds of rock dust, fire hose of sufficient length to reach the working face and capable of delivering at least 50 gallons per minute of water at a minimum pressure of 50 psi.. The fire hose shall be located in the last open crosscut and shall be connected and ready for use but shall not be required being charged with water during the cut-through.
2. Roof support supplies sufficient to handle emergency or unplanned roof control situations associated with the well mine through.
3. Ventilation supplies sufficient to handle emergency or unplanned ventilation situations associated with the well mine through.
4. An emergency plug or plugs to plug the mined through well bore in the event such measures are required or become necessary.

f. An airflow quantity of at least 9,000 CFM and mean air velocity of 60 fpm shall be supplied at the mine face. This quantity shall be required beginning at the minimum barrier distance line and shall continue until mining has progressed 20 ft. past the initial mine through point. In no circumstances shall the quantity be less than that approved in the current ventilation plan if greater.

g. Cut depths will be limited to 20 ft. from the end of the line curtain beginning at the minimum barrier distance line and continue until mining has progressed 20 ft. past the initial mine through point.

h. MMU's to be performing mine throughs in areas shown as part of this revision will maintain stoppings between intake and return air courses up to and including the third connecting crosscut outby the working face.

i. Service all equipment to be used in the immediate area of the mine through and assure it's permissibility, prior to use , once every 24 hours during which the mine through is anticipated or is occurring.

j. Calibrate the continuous miner methane monitor, prior to use, once every 24 hours during which the mine through is anticipated or is occurring.

k. When mining, tests for methane with a hand held methane detector at least every 10 minutes from the time mining commences at the minimum barrier distance line or within thirty feet of the wellbore, whichever is greater and continue until such time as the well is intersected. Tests for methane with a hand held detector will be made immediately prior to mining through the wellbore regardless of timing.

l. De-energize all equipment and thoroughly examine the area when the wellbore is intersected. The area will be determined safe by a certified person before mining is resumed.

m. Once the wellbore is intersected and the area is determined safe, mining may resume. Hand held methane detector tests, however, will continue at least every 10 minutes while mining, until mining has progressed 20 feet past the initial mine through point.

n. Once the wellbore is intersected and the area has been determined safe, mining shall continue a sufficient distance to permit adequate ventilation in or around the area of the well.

o. No open flame shall be permitted in the area until adequate ventilation has been established around the wellbore.

p. During the actual cutting process, no individuals shall be allowed on the return side until the well bore has been intercepted and the area has been examined by a certified person and declared safe.

q. All workplace examinations shall be conducted on the return side of the continuous miner while the continuous miner is idle.

r. The working place shall be free from accumulations of coal dust and coal spillage. Rock dust shall be placed on the roof, rib and floor to within 20 feet of the face when mining through the wellbore.

s. No person shall be permitted in the area of the mine through operation except those actually engaged in the operation, including company personnel, representatives of the miners, personnel from MSHA and personnel from the appropriate State agency.

t. Alert all personnel in the mine to the planned intersection of the well prior to their going underground if the planned intersection is to occur during their shift. This warning shall be repeated for all shifts until the well has been mined through.

u. The mine through operation shall be under the direct supervision of a certified individual. Instructions concerning the mine through operations shall be issued only by the certified individual in charge.

Procedure for Mining Through A Horizontal Wellbore (Subsequent Minethroughs):

Prior to mining through a lateral wellbore of a coalbed methane well which has already had at least one lateral wellbore mined through, Spartan will verify that the following procedures have been performed on the well:

a. The water will be bailed from the vertical section of the wellbore, as close to the coal seam elevation as practical using normal bailing equipment.

b. The surface wellhead will be maintained open, so as to bring the vertical section of the wellbore to outside atmospheric pressure.

In addition, Spartan will:

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ADDENDUM TO VENTILATION PLAN
SPARTAN MINING COMPANY
ROAD FORK #51 MINE
MSHA ID# 46-01544
WVOMHST PERMIT # U-4001-05

c. Prior to the mining unit entering the minimum barrier zone of subsequent intersections or sets of intersections, a notice from a professional engineer will be submitted to the District Manager noting that a review of the proposed method(s) to prepare coal bed methane wells for intersection has been completed and that the applicability of the proposed system or procedures in regard to the mine specific conditions is still appropriate.

d. Drivage sites or site lines shall be installed prior to mining within 80 ft. of the projected well cut-through. Drivage sites or site lines set in excess of 100 ft. prior to well bore intersection will not be deemed to comply with this requirement.

e. A mobile sled or trailer will be stocked and maintained with equipment and supplies as outlined herein on the working section at all times. The sled or trailer will be positioned at or near (not to exceed 500 feet outby) the last open crosscut near the projected mine through immediately upon reaching the minimum barrier distance. The trailer or sled will be labled as "Firefighting Equipment and Emergency Supplies for CBM Minethroughs" to distinguish it from general supply or stationary equipment stores. Equipment or supplies required on this sled or trailer are:

1. Firefighting equipment to include a minimum of two 10-pound fire extinguishers, 240 pounds of rock dust, fire hose of sufficient length to reach the working face and capable of delivering at least 50 gallons per minute of water at a minimum pressure of 50 psi.. The fire hose shall be located in the last open crosscut and shall be connected and ready for use but shall not be required being charged with water during the cut-through.
2. Roof support supplies sufficient to handle emergency or unplanned roof control situations associated with the well mine through.
3. Ventilation supplies sufficient to handle emergency or unplanned ventilation situations associated with the well mine through.
4. An emergency plug or plugs to plug the mined through well bore in the event such measures are required or become necessary.

f. An airflow quantity of at least 9,000 CFM and mean air velocity of 60 fpm shall be supplied at the mine face. This quantity shall be required beginning at the minimum barrier distance line and shall continue until mining has progressed 20 ft. past the initial mine through point. In no circumstances shall the quantity be less than that approved in the current ventilation plan if greater.

g. Cut depths will be limited to 20 ft. from the end of the line curtain beginning at the minimum barrier distance line and continue until mining has progressed 20 ft. past the initial mine through point.

h. MMU's to be performing mine throughs in areas shown as part of this revision will maintain stoppings between intake and return air courses up to and including the third connecting crosscut outby the working face.

i. Service all equipment to be used in the immediate area of the mine through and assure it's permissibility, prior to use , once every 24 hours during which the mine through is anticipated or is occurring.

j. Calibrate the continuous miner methane monitor, prior to use, once every 24 hours during which the mine through is anticipated or is occurring.

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k. When mining, tests for methane with a hand held methane detector at least every 10 minutes from the time mining commences at the minimum barrier distance line or within thirty feet of the wellbore, whichever is greater and continue until such time as the well is intersected. Tests for methane with a hand held detector will be made immediately prior to mining through the wellbore regardless of timing.

l. De-energize all equipment and thoroughly examine the area when the wellbore is intersected. The area will be determined safe by a certified person before mining is resumed.

m. Once the wellbore is intersected and the area is determined safe, mining may resume. Hand held methane detector tests, however, will continue at least every 10 minutes while mining, until mining has progressed 20 feet past the initial mine through point.

n. Once the wellbore is intersected and the area has been determined safe, mining shall continue a sufficient distance to permit adequate ventilation in or around the area of the well.

o. No open flame shall be permitted in the area until adequate ventilation has been established around the wellbore.

p. During the actual cutting process, no individuals shall be allowed on the return side until the well bore has been intercepted and the area has been examined by a certified person and declared safe.

q. All workplace examinations shall be conducted on the return side of the continuous miner while the continuous miner is idle.

r. The working place shall be free from accumulations of coal dust and coal spillage. Rock dust shall be placed on the roof, rib and floor to within 20 feet of the face when mining through the wellbore.

s. No person shall be permitted in the area of the mine through operation except those actually engaged in the operation, including company personnel, representatives of the miners, personnel from MSHA and personnel from the appropriate State agency.

t. Alert all personnel in the mine to the planned intersection of the well prior to their going underground if the planned intersection is to occur during their shift. This warning shall be repeated for all shifts until the well has been mined through.

u. The mine through operation shall be under the direct supervision of a certified individual. Instructions concerning the mine through operations shall be issued only by the certified individual in charge.

Other Plan Specifics

Mining with a Parallel Wellbore

When mining parallel with a horizontal wellbore, every attempt will be made to adjust projections to intersect the wellbore in the crosscuts as opposed to continuously in the advancing entry. However, should mining be conducted such that it advances parallel and continuously cutting the wellbore, the following modifications will be made to the procedures. All other requirements and precautions listed herein shall apply.

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ADDENDUM TO VENTILATION PLAN
SPARTAN MINING COMPANY
ROAD FORK #51 MINE
MSHA ID# 46-01544
WVOMHST PERMIT # U-4001-05

1. Cut depths will be limited to 20 ft. from the end of the line curtain.
2. Upon completion of the cut, the workplace shall be thoroughly examined by a certified person and declared safe.
3. No person(s) shall be allowed on the return side until the cut has been completed and the area declared safe by a certified person.
4. Tests for methane with a hand-held methane detector at least every 10 minutes from the time mining commences while mining and while bolting until the cut-through is completed.

Over Drilling

No vertical wells are currently proposed for cut-through.

Separation of airways connected by horizontal bores

Should a wellbore be intersected multiple times and subsequently provide an open wellbore or conduit between different or uncommon splits of air, the hole will be plugged with a minimum of a temporary plug as soon as all required safety precautions are met and it is declared safe to do so by a certified person. A permanent plug will be installed as soon as practical but shall not be required until the section has advanced a full line of crosscuts inby the wellbore intersection or 120 ft. Permanent plugging may consist of: 1.) the wellbore will be completely filled with cement for a length of at least 3 feet or its equivalent or 2.) manufactured plugs or casings cemented into place that are typically used in conjunction with drivable horizontal long hole drilling machines with a sampling port and that use cement and or epoxy compounds. Wellbore connections between common or like air splits will not require any plugs.

Plugging A Wellbore or Leg

Should a wellbore be intersected and should it then be determined by mine management that the wellbore or leg will not be intersected again or subsequently for reasons as determined by mine management, it may be permanently plugged. The hole may be left open as in the normal sequence outlined herein and then plugged, it may be first temporarily plugged as soon as all required safety precautions are met and it is declared safe to do so by a certified person or it may be immediately permanently plugged. A permanent plug may be installed at the determination of mine and can be installed as soon as all required safety precautions are met and it is declared safe to do so by a certified person. Permanent plugging may consist of: 1.) the wellbore will be completely filled with cement for a length of at least 3 feet or its equivalent or 2.) manufactured plugs or casings cemented into place that are typically used in conjunction with drivable horizontal long hole drilling machines with a sampling port and that use cement and or epoxy compounds. In the event a wellbore is permanently plugged, its location will be will be located by survey within 1 week of the installation of such permanent plug and such information posted to the permanent maps.

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JUN 26 2013

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SPARTAN MINING COMPANY
ROAD FORK #51 MINE
MSHA ID# 46-01544
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Intersection Map to Be Kept On the Mining Section

A map shall be kept on the section showing all projected mining, all CBM gas wells with the vertical holes and their horizontal bores or legs for that area, outlines of minimum safety barrier to each bore for that area and anticipated intersections with those bores. The section map will be updated at a minimum of once per shift and preferably at the ending of each shift. Updating will consist of the progression of mining, all hole intersections, the date holes were intersected, the number of the intersection and how far from the anticipated intersection the actually was. Such information will then be transferred to the wall map or 1200 map outside at the mine office in a like manner. Connections or intersections with the wellbores will be located by survey within 1 week of their connection and such information posted to the permanent maps. Any large discrepancies in actual location verses anticipated location will be reported to mine management and adequately evaluated for need of corrective action. Large discrepancy will be considered "outside of the probable error of 1 degree.

Specific times when actions are to be taken.

Specific times when checks or tests are made, supplies and/or emergency equipment are delivered and positioned or driveage sights are outlined throughout these guidelines. However, unless otherwise stated they are required upon reaching the minimum required barrier.

Equipment List

List all equipment to be used to prepare and pump the water and gel: Equipment used to prepare and pump the water and gel will include a truck-mounted triplex pump and mixing vat of the type used to mix and pump cement in gas well applications. We will likely use BJ Services or Schlumberger on these holes so we can get a computer printout of the weight and volume of the gel mix. The exact make and model of the pump and vat used by the contractor will not be known until the day we use it. Fresh water only injection will be gravity feed not pressure injected.

MSDS and PPE

See attached, MSDS sheets for bentonite clay. Bentonite is the only component to be injected into the wells other than fresh water.

No special personal protective equipment (PPE) is required in using bentonite compounds. Normal PPE is required at all times on the active site such as metatarsal hard toe boots, eye protection, noise protection, reflective high visibility clothing, gloves and hard hat.

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Environmental Protection

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JUN 26 2013

04/02/2021

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SPARTAN MINING COMPANY
ROAD FORK #51 MINE
MSHA ID# 46-01544
WVOMHST PERMIT # U-4001-05

Minimum Air quantities.

A quantity of at least 9,000 CFM, but no less than the approved ventilation plan amount, of intake air shall be supplied at the mine face. A minimum quantity of 15,000 cfm shall be maintained in the LOB when mining within the minimum required barrier.

Ongoing Examinations

a. All intersections with wells, legs, horizontal bores or branches that are in the intake air courses shall be examined as part of the preshift examinations required under 75.360.

b. All other intersections with wells, legs, horizontal bores or branches shall be examined as part of the weekly examinations required under 75.364.

c. All examinations shall be recorded in the appropriate record book and shall be specific to the hole, leg, and intersection number with location.

Mine Map Requirements

The mine map shall show all wells in the current and projected areas of the mine as per 75.372(a)(14) and shall include:

a. Identify CBM wells (i.e. API hole # or equivalent)
b. Date gas production began.
c. Seams intersected.
d. All vertical holes and all horizontal segments with an outline of minimum barriers.
e. Dates holes were intersected and the distance of variance.

Review By Responsible Person

The responsible person required per 30 CFR 75.1501 is responsible for well intersection emergencies. The well intersection procedures shall be reviewed by the responsible person prior to any planned well intersection or cut-through.

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WW-4A
Revised 6-07

1) Date:
2) Operator's Well Number
PC-026C

3) API Well No.: 47 - 109 - 02606

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS
NOTICE 0F APPLICATION TO PLUG AND ABANDON A WELL

4) Surface Owner(s) to be served:
(a) Name: Heartwood Forest Land Fund
Address: 19045 Stone Mountain Road
Abingdon, VA 24210

(b) Name:
Address:

(c) Name:
Address:

6) Inspector: Gary Kennedy
Address: 66 Old Church Lane
Pipestem, WV 25979
Telephone: 304-382-8402

5) (a) Coal Operator
Name: Spartan Mining Co.
Address: 208 Business Street
Beckley, WV 25801

(b) Coal Owner(s) with Declaration
Name: Western Pocahontas Properties, LLC
Address: 5260 Irwin Road
Huntington, WV 25705

Name:
Address:

(c) Coal Lessee with Declaration
Name: Spartan Mining Co.
Address: 208 Business Street
Beckley, WV 25801

TO THE PERSONS 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 its and the plugging work order; and
(2) The plat (surveyor's map) showing the well location on Form WW-6.

The reason you received these documents is that you have rights regarding the application which are summarized in the instructions on the reverses 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.

Well Operator: Boone East Development Co., LLC
By: Timothy R. McGrady
Its: Authorized Agent
Address: 340 Martin Luther King Jr. Blvd
Bristol, TN 37620
Telephone: 423-573-0300

OFFICIAL SEAL
Notary Public, State of West Virginia
CLAIRE S VAUGHT
PO Box 616
Danville, WV 25053
My commission expires December 4, 2021

Subscribed and sworn before me this 13 day of January, 2021
Claire S. Vaught Notary Public
My Commission Expires December 4, 2021

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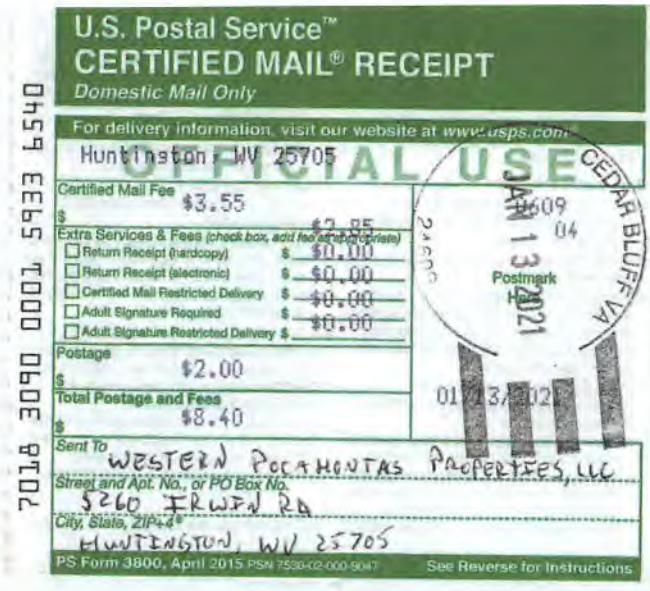
Office of Oil and Gas
JAN 19 2021
WV Department of
Environmental Protection

Oil and Gas Privacy Notice

The Office of Oil and Gas processes your personal information, such as name, address and phone number, as a part of our regulatory duties. Your personal information may be disclosed to other State agencies or third parties in the normal course of business or as needed to comply with statutory or regulatory requirements, including Freedom of Information Act requests. Our office will appropriately secure your personal information. If you have any questions about our use of your personal information, please contact DEP's Chief Privacy Officer at deprivacyoffier@wv.gov.

04/02/2021



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Huntington, WV 25705

OFFICIAL USE

Certified Mail Fee $3.55
Extra Services & Fees (check box, add fee as appropriate)
- Return Receipt (hardcopy) $0.00
- Return Receipt (electronic) $0.00
- Certified Mail Restricted Delivery $0.00
- Adult Signature Required $0.00
- Adult Signature Restricted Delivery $

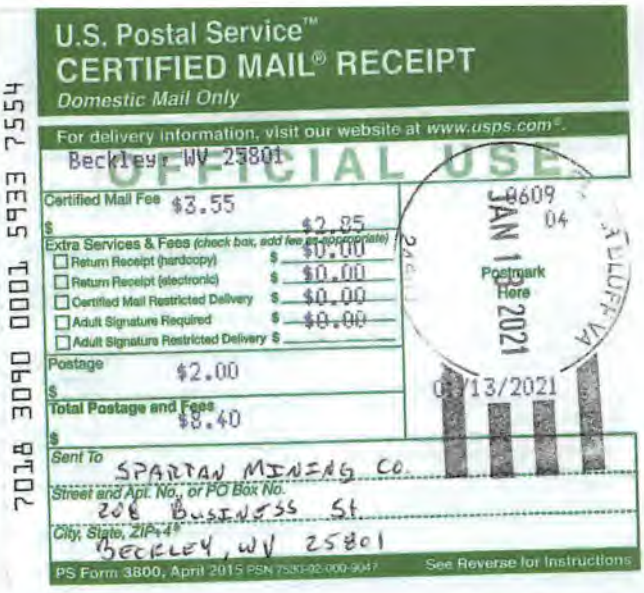
Postage $2.00
Total Postage and Fees $8.40

Sent To: WESTERN POCAHONTAS PROPERTIES, LLC
Street and Apt. No., or PO Box No.: 5260 IRWIN RD
City, State, ZIP+4®: HUNTINGTON, WV 25705

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

CEDAR BLUFF VA 24609 JAN 13 2021 0609 04 Postmark Here

7018 3090 0001 5933 6540



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Beckley, WV 25801

OFFICIAL USE

Certified Mail Fee $3.55
Extra Services & Fees (check box, add fee as appropriate)
- Return Receipt (hardcopy) $0.00
- Return Receipt (electronic) $0.00
- Certified Mail Restricted Delivery $0.00
- Adult Signature Required $0.00
- Adult Signature Restricted Delivery $

Postage $2.00
Total Postage and Fees $8.40

Sent To: SPARTAN MINING CO.
Street and Apt. No., or PO Box No.: 208 BUSINESS ST.
City, State, ZIP+4®: BECKLEY, WV 25801

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

CEDAR BLUFF VA 24609 JAN 13 2021 0609 04 Postmark Here

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Abingdon, VA 24210

OFFICIAL USE

Certified Mail Fee $3.55
Extra Services & Fees (check box, add fee as appropriate)
- Return Receipt (hardcopy) $0.00
- Return Receipt (electronic) $0.00
- Certified Mail Restricted Delivery $0.00
- Adult Signature Required $0.00
- Adult Signature Restricted Delivery $

Postage $2.00
Total Postage and Fees $8.40

Sent To: HEARTWOOD FOREST LAND FUND
Street and Apt. No., or PO Box No.: 19045 STONE MOUNTAIN ROAD
City, State, ZIP+4®: ABINGDON, VA 24210

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

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Charleston, WV 25304

OFFICIAL USE

Certified Mail Fee $3.55
Extra Services & Fees (check box, add fee as appropriate)
- Return Receipt (hardcopy) $0.00
- Return Receipt (electronic) $0.00
- Certified Mail Restricted Delivery $0.00
- Adult Signature Required $0.00
- Adult Signature Restricted Delivery $

Postage $2.00
Total Postage and Fees $8.40

Sent To: WV DEP Office of Oil and Gas
Street an: 601 57th Street, SE
City, Stat: Charleston, WV 25304

PS Form ... See Reverse for Instructions

CEDAR BLUFF VA 24609 JAN 13 2021 0609 04 Postmark Here

7018 3090 0001 5933 7547

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4710902606 CP

04/02/2021

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SURFACE OWNER WAIVER

Operator's Well Number PC-026C

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...".

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JAN 19 2021
WV Department of
Environmental Protection

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.

_____ Date _____
Signature

FOR EXECUTION BY A CORPORATION,

Name _____
By _____
Its _____ Date _____

Signature Date

04/02/2021

WW-4B

API No. 47-109-02606 C P
Farm Name Heartwood Forestland
Well No. PC-026C

INSTRUCTIONS TO COAL OPERATORS
OWNERS AND LESSEE

The well operator named on the obverse side of WW-4 (B) is about to abandon the well described in the enclosed materials and will commence the work of plugging and abandoning said well on the date the inspector is notified. Which date shall not be less then five days after the day on which this notice and application so mailed is received, or in due course should be received by the Department of Environmental Protection Office of Oil & Gas.

This notice and application is given to you in order that your respective representatives may be present at the plugging and filling of said well. You are further notified that whether you are represented or not the operator will proceed to plug and fill said well in the manner required by Section 24, Article 6, Chapter 22 of the Code and given in detail on obverse side of this application.

NOTE: If you wish this well to be plugged according to 22-6-24(d) then as per Regulation 35CSR4-13.9 you must complete and return to this office on form OB-16 "Request by Coal Operator, Owner, or Lessee for plugging" prior to the issuance of this plugging permit.

WAIVER

The undersigned coal operator _____/ owner _____/ lessee _____/ of the coal under this well location has examined this proposed plugging work order. The undersigned has no objection to the work proposed to be done at this location, provided, the well operator has complied with all applicable requirements of the West Virginia Code and the governing regulations.

Date: _____

_____

By: _____

Its _____

04/02/2021

4710902606CP

WW-9
(5/16)

API Number 47 - 109 - 02606
Operator's Well No. PC-026C

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
OFFICE OF OIL AND GAS
FLUIDS/ CUTTINGS DISPOSAL & RECLAMATION PLAN

Operator Name Boone East Development Co., LLC OP Code _____

Watershed (HUC 10) 0507010103 Quadrangle Pineville

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

Will a pit be used? Yes ☐ No ☑

If so, please describe anticipated pit waste: _____

Will a synthetic liner be used in the pit? Yes ☐ No ☐ If so, what ml.? _____

Proposed Disposal Method For Treated Pit Wastes:

_____ Land Application (if selected provide a completed form WW-9-GPP)
_____ Underground Injection (UIC Permit Number _____)
_____ Reuse (at API Number _____)
_____ Off Site Disposal (Supply form WW-9 for disposal location)
_____ Other (Explain _____

Will closed loop system be used? If so, describe: N/A

Drilling medium anticipated for this well (vertical and horizontal)? Air, freshwater, oil based, etc. N/A

-If oil based, what type? Synthetic, petroleum, etc. N/A

Additives to be used in drilling medium? N/A

Drill cuttings disposal method? Leave in pit, landfill, removed offsite, etc. N/A

-If left in pit and plan to solidify what medium will be used? (cement, lime, sawdust) _____

-Landfill or offsite name/permit number? _____

Permittee shall provide written notice to the Office of Oil and Gas of any load of drill cuttings or associated waste rejected at any West Virginia solid waste facility. The notice shall be provided within 24 hours of rejection and the permittee shall also disclose where it was properly disposed.

I certify that I understand and agree to the terms and conditions of the GENERAL WATER POLLUTION PERMIT issued on April 1, 2016, 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
Office of Oil and Gas
JAN 19 2021
WV Department of
Environmental Protection

Company Official Signature Timothy R. McGrady

Company Official (Typed Name) Timothy R. McGrady

Company Official Title Authorized Agent

Subscribed and sworn before me this 13 day of January, 2021

Claire S. Vaught Notary Public

My commission expires December 4, 2021

OFFICIAL SEAL
Notary Public, State of West Virginia
CLAIRE S VAUGHT
PO Box 416
Danville, WV 25053
My commission expires December 4, 2021

04/02/2021

4710902606CP

Form WW-9

Operator's Well No. PC-026C

Proposed Revegetation Treatment: Acres Disturbed 0.5 Prevegetation pH _____

Lime 2 Tons/acre or to correct to pH 6.0

Fertilizer type 10-20-20

Fertilizer amount 500 lbs/acre

Mulch 0.5 Tons/acre

Seed Mixtures

Temporary		Permanent	
Seed Type	lbs/acre	Seed Type	lbs/acre
Tall Fescue	40	Tall Fescue	40
Orchard Grass	6	Orchard Grass	6
Perennial Rye Grass	39	Perennial Rye Grass	39
Red Clover	17	Red Clover	17

Attach:
Maps(s) of road, location, pit and proposed area for land application (unless engineered plans including this info have been provided). If water from the pit will be land applied, provide water volume, include dimensions (L, W, D) of the pit, and dimensions (L, W), and area in acres, of the land application area.

Photocopied section of involved 7.5' topographic sheet.

Plan Approved by: Thomas Kennedy

Comments: _____

Title: Inspector Date: 1/19/21

Field Reviewed? (_____) Yes (_____) No

04/02/2021

4710902606CP

WW-9- GPP
Rev. 5/16

Page 1 of 2
API Number 47 - 109 - 02606
Operator's Well No. PC-026C

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

Operator Name: Boone East Development Co., LLC

Watershed (HUC 10): 0507010103 Quad: Pineville

Farm Name: Heartwood Forestland

1. List the procedures used for the treatment and discharge of fluids. Include a list of all operations that could contaminate the groundwater.

The only fluid involved in this operation is fresh water; therefore, no threat to groundwater contamination exists.

2. Describe procedures and equipment used to protect groundwater quality from the list of potential contaminant sources above.

N/A

3. List the closest water body, distance to closest water body, and distance from closest Well Head Protection Area to the discharge area.

Indian Creek of Guyandotte River is 0.6 miles from location.

4. Summarize all activities at your facility that are already regulated for groundwater protection.

N/A

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Environmental Protection

5. Discuss any existing groundwater quality data for your facility or an adjacent property.

04/02/2021

N/A

6. Provide a statement that no waste material will be used for deicing or fill material on the property.

No waste material will be used for deicing or fill material.

7. Describe the groundwater protection instruction and training to be provided to the employees. Job procedures shall provide direction on how to prevent groundwater contamination.

N/A

8. Provide provisions and frequency for inspections of all GPP elements and equipment.

N/A

Signature:

Date: 1/13/21

4710902606

PC-026C
47-109-02606
Access & Location Map

0 750 1,500 3,000 4,500 6,000
Feet

Office of
JAN 19
WV Dep
Environmental

04/02/2021

4710902606CP

WW-7
8-30-06

West Virginia Department of Environmental Protection
Office of Oil and Gas
WELL LOCATION FORM: GPS

API: 47-109-02606 **WELL NO.:** PC-026C

FARM NAME: Heartwood Forestland

RESPONSIBLE PARTY NAME: Boone East Development Co., LLC

COUNTY: Wyoming **DISTRICT:** Baileysville

QUADRANGLE: Pineville

SURFACE OWNER: Heartwood Forest Land Fund

ROYALTY OWNER: Plum Creek Timberlands

UTM GPS NORTHING: 4159273.20

UTM GPS EASTING: 445490.58 **GPS ELEVATION:** 1,762.17ft.

The Responsible Party named above has chosen to submit GPS coordinates in lieu of preparing a new well location plat for a plugging permit or assigned API number on the above well. The Office of Oil and 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 ____: Post Processed Differential _____

Real-Time Differential _____

Mapping Grade GPS X: Post Processed Differential _____

Real-Time Differential X

4. **Letter size copy of the topography map showing the well location.**

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.

Signature MANAGER Title 1/13/21 Date

04/02/2021