



 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

Austin Caperton, Cabinet Secretary
www.dep.wv.gov

Wednesday, June 5, 2019
 WELL WORK PLUGGING PERMIT
 Vertical Plugging

PANTHER CREEK MINING, LLC
 3228 SUMMIT SQUARE PLACE
 SUITE 180
 LEXINGTON, KY 40509

Re: Permit approval for BROUN 2
 47-005-01604-00-00

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: BROUN 2
 Farm Name: BROUN, FONTAINE E., ETAL
 U.S. WELL NUMBER: 47-005-01604-00-00
 Vertical Plugging
 Date Issued: 6/5/2019

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47-0 05/16/99 f
06/07/2019

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.

PLUGGING PROGNOSIS

Well Broun 2
API# 47-005-01604
Sherman District, Boone County

Current Status

Elevation: 1,077.00'

Total Depth: 2,779 (Per Well Drilling Record)

Active: No

Plugged: Yes

Lowest mineable coal seam between 535' – 540'

Highest mineable coal seam between 240' – 245'

Mineable coal seam are \geq 20 inches or currently being mined

Procedure for Plugging

- 1) Notify state inspector, Jeff Smith, @ 681-313-6743, before starting.
- 2) Cleanout hole to at least 200 ft. below the lowest mineable seam of coal. Clean out to 740 ft.
- 3) Perforate casing (if Applicable) to 101C standards from 200 ft. below to 100 ft. above the Eagle Coal seam
- 4) Set a 740 ft. expanding cement plug from 740 ft. to 0 ft.
- 5) Cement will be set to the surface.
- 6) Depending on site conditions, plugging procedures may be modified after approval of the inspector.
- 7) All changes to the plugging procedures will be noted in the plugging affidavit.
- 8) Erect permanent monument with API number.
- 9) Reclaim the site and access road.

RECEIVED
Office of Oil and Gas

APR 2 2019

WV Department of
Environmental Protection

FEDERAL MINE SAFETY AND HEALTH ADMINISTRATION
1100 Wilson Boulevard, Room 2352
Arlington, VA 22209-3939

MSHA 101C
EXEMPTION

IN THE MATTER OF SPEED MINING)
LLC, AMERICAN EAGLE MINE ¹)
)
Petitioner) MSHA Docket No. M-2013-050-C
)

CONSENT ORDER

Pursuant to 30 C.F.R. § 44.27, Panther Creek Mining LLC (“Panther Creek”), by its undersigned counsel, and the Solicitor for the Administrator of Coal Mine Safety, Mine Safety and Health Administration, hereby agree to a Consent Order resolving the above-referenced matter.

- 1) Pursuant to 30 U.S.C. § 101(c) and 30 C.F.R. Part 44, Panther Creek sought modification of 30 C.F.R. § 75.1700, which provides as follows:

Each operator of a coal mine shall take reasonable measures to locate oil and gas wells penetrating coal beds or any underground areas of a coal mine. When located, such operator shall establish and maintain barriers around such oil and gas wells in accordance with State laws and regulations, except that such barriers shall not be less than 300 feet in diameter, unless the Secretary or his authorized representative permits a lesser barrier consistent with the applicable State laws and regulations where such lesser barrier will be adequate to protect against hazards from such wells to the miners in such mine, or unless the Secretary or his authorized representative requires a greater barrier where the depth of the mine, other geologic conditions, or other factors warrant such a greater barrier.

- 2) In its Petition for Modification, Panther Creek alleged that, pursuant to 30 C.F.R. § 44.4(a)(1), its proposed method was an alternative method of achieving the result of the

¹ The American Eagle Mine at issue in this matter is no longer operated by Speed Mining LLC. Instead, it is now operated by Panther Creek Mining LLC. Accordingly, the petitioner herein shall be referred to as Panther Creek Mining LLC.

standard which would at all times guarantee no less than the same measure of protection afforded by the standard.

- 3) MSHA personnel conducted an investigation of the petition and filed a report of their findings and recommendations with the Administrator of Coal Mine Safety and Health.
- 4) On July 31, 2015, MSHA issued a Proposed Decision and Order granting the Petition for Modification.
- 5) Panther Creek disagreed with a number of conditions of the Petition for Modification and requested a hearing before a Department of Labor Administrative Law Judge pursuant to 30 C.F.R. § 44.14. The parties have entered into settlement discussions and negotiated this Consent Agreement. In accordance with 30 C.F.R. § 44.27(b), this Consent Agreement contains Consent Findings and a Consent Order disposing of the entire proceeding.

Consent Findings

- 6) In accordance with 30 C.F.R. § 44.27(b)(1), both MSHA and Panther Creek agree that the following Consent Order shall have the same effect as if made after a full hearing.
- 7) In accordance with 30 C.F.R. § 44.27(b)(2), both MSHA and Panther Creek agree that the record on which the following Consent Order is based consists of the petition and agreement and all other pertinent information as set forth in Section 44.27(b)(2).
- 8) In accordance with 30 C.F.R. § 44.27(b)(3), both MSHA and Panther Creek agree to waive any further procedural steps before the Administrative Law Judge and Assistant Secretary.
- 9) In accordance with 30 C.F.R. § 44.27(b)(4), both MSHA and Panther Creek agree to waive any right to challenge or contest the validity of the Consent Findings and Consent Order made in accordance with this Consent Agreement.
- 10) Both MSHA and Panther Creek agree that the terms and conditions of the following Consent Order will at all times guarantee no less than the same measure of protection afforded by the existing standard under the conditions present at this particular mine.

Consent Order

Under the authority delegated by the Secretary of Labor to the Administrator for Coal mine Safety and Health and under § 811(c) and 30 C.F.R. Part 44, modification of the application of 30 C.F.R. § 75.1700 at the American Eagle Mine is hereby GRANTED as set forth below.

1. DISTRICT MANAGER APPROVAL REQUIRED

- a. A safety barrier of 300 feet in diameter (150 feet between any mined area and a well) shall be maintained around all oil and gas wells (defined herein to include all active, inactive, abandoned, shut-in, previously plugged wells, water injection wells, and carbon dioxide sequestration wells) until approval to proceed with mining has been obtained from the district manager. Wells that were drilled into potential oil or gas producing formations that did not produce commercial quantities of either gas or oil (exploratory wells, wildcat wells or dry holes) are classified as oil or gas wells by MSHA.
- b. Prior to mining within the safety barrier around any well that the mine plans to intersect, the mine operator shall provide to the district manager a sworn affidavit or declaration executed by a company official stating that all mandatory procedures for cleaning out, preparing, and plugging each gas or oil well have been completed as described by the terms and conditions of this order. The affidavit or declaration must be accompanied by all logs described in subparagraphs 2(a)(2) and 2(a)(3) below and any other records described in those subparagraphs which the district manager may request. The district manager will review the affidavit or declaration, the logs and any other records that have been requested, and may inspect the well itself, and will then determine if the operator has complied with the procedures for cleaning out, preparing and plugging each well as described by the terms and conditions of this Order.

If the district manager determines that the procedures have been complied with, he will provide his approval, and the mine operator may then mine within the safety barrier of the well, subject to the terms of this Order.

If well intersection is not planned, the mine operator may request a permit to reduce the 300 foot diameter of the safety barrier but to not intersect the well. The district manager may require documents and information that help quantify the accuracy of the location of the well in respect to the mine maps and mining projections. This information may include survey closure data, down-hole well deviation logs, historical well intersection location data and any additional data required by the district manager. If the district manager determines that the proposed barrier reduction is reasonable, he will provide his approval, and the mine operator may then mine within the safety barrier of the well.

- c. The terms and conditions of this Order apply to all types of underground coal mining.

2. MANDATORY PROCEDURES FOR CLEANING OUT, PREPARING, PLUGGING, AND REPLUGGING OIL OR GAS WELLS

a. MANDATORY PROCEDURES FOR CLEANING OUT AND PREPARING VERTICAL OIL AND GAS WELLS PRIOR TO PLUGGING OR REPLUGGING

- (1) If the total depth of the well is less than 4,000 feet, the operator shall completely clean out the well from the surface to at least 200 feet below the base of the lowest mineable coal seam, unless the district manager requires cleaning to a greater depth based on his judgment as to what is required due to the geological strata, or due to the pressure within the well (the operator shall provide the district manager with all information it possesses concerning the geological nature of the strata and the pressure of the well). If the total depth of the well is 4,000 feet, or greater, the operator shall completely clean out the well from the surface to at least 400 feet below the base of the lowest mineable coal seam. The operator shall remove all material from the entire diameter of the well, wall to wall.
- (2) The operator shall prepare down-hole logs for each well. They shall consist of a caliper survey and log(s) suitable for determining the top, bottom, and thickness of all coal seams and potential hydrocarbon producing strata and the location for a bridge plug. The district manager may approve the use of a down-hole camera survey in lieu of down-hole logs. In addition, a journal shall be maintained describing the depth of each material encountered, the nature of each material encountered; bit size and type used to drill each portion of the hole; length and type of each material used to plug the well; length of casing(s) removed, perforated or ripped or left in place, any sections where casing was cut or milled; and other pertinent information concerning cleaning and sealing the well. Coal seam depth will be based on an e-log survey completed at the time of the well plugging. This e-log information is used for determining the coal seam depth and the depths of the perforations or rips in the casing from the surface reference point. Invoices, work-orders, and other records relating to all work on the well shall be maintained as part of this journal and provided to MSHA upon request.
- (3) When cleaning out the well as provided for in subparagraph (a)(1), the operator shall make a diligent effort to remove all of the casing in the well. If it is not possible to remove all of the casing, the operator must take appropriate steps to ensure that the annulus between the casing and between the casings and the well walls are filled with expanding (minimum 0.5% expansion upon setting) cement and contain no voids. If the casing cannot be removed, it must be cut, milled, perforated or ripped at all mineable coal seam levels to facilitate the removal of any remaining casing in the coal seam by the mining equipment. Any casing which remains shall be perforated or ripped to permit the injection of cement into voids within and around the well. The operator shall ensure that work

performed prior to the date of this order to perforate or rip all casing remaining at mineable coal seam levels is consistent with either Appendix A or Appendix B (attached). All work performed after the date of this order to perforate or rip all casing remaining at mineable coal seam levels shall be consistent with Appendix A. Perforations or rips consistent with Appendix A or Appendix B, as applicable by the date of this order, are required at least every 50 feet from 200 feet (400 feet if the total well depth is 4,000 feet or greater) below the base of the lowest mineable coal seam up to 100 feet above the uppermost mineable coal seam.

If the operator, using a casing bond log, can demonstrate to the satisfaction of the district manager that all annuli in the well are already adequately sealed with cement, then the operator will not be required to perforate or rip the casing for that particular well. When multiple casing and tubing strings are present in the coal horizon(s), any casing which remains shall be ripped or perforated and filled with expanding cement as indicated above. An acceptable casing bond log for each casing and tubing string is needed if used in lieu of ripping or perforating multiple strings.

- (4) If the district manager concludes that the completely cleaned-out well is emitting excessive amounts of gas, the operator must place a mechanical bridge plug in the well. It must be placed in a competent stratum at least 200 feet (400 feet if the total well depth is 4,000 feet or greater) below the base of the lowest mineable coal seam, but above the top of the uppermost hydrocarbon-producing stratum, unless the district manager requires a greater distance based on his judgment that it is required due to the geological strata, or due to the pressure within the well (the operator shall provide the district manager with all information it possesses concerning the geological nature of the strata and the pressure of the well). If it is not possible to set a mechanical bridge plug, an appropriately sized packer may be used.
 - (5) If the upper-most hydrocarbon-producing stratum is within 300 feet of the base of the lowest mineable coal seam, the operator shall properly place mechanical bridge plugs as described in subparagraph (a)(4) to isolate the hydrocarbon producing stratum from the expanding cement plug. Nevertheless, the operator shall place a minimum of 200 feet (400 feet if the total well depth is 4,000 feet or greater) of expanding cement below the lowest mineable coal seam, unless the district manager requires a greater distance based on his judgment that it is required due to the geological strata, or due to the pressure within the well.
- b. MANDATORY PROCEDURES FOR PLUGGING OR REPLUGGING OIL OR GAS WELLS TO THE SURFACE

After completely cleaning out the well as specified in paragraph 2(a) above, the following procedures shall be used to plug or replug wells:

- (1) The operator shall pump expanding cement slurry down the well to form a plug which runs from at least 200 feet (400 feet if the total well depth is 4,000 feet or greater) below the base of the lowest mineable coal seam (or lower if required by the district manager based on his judgment that a lower depth is required due to the geological strata, or due to the pressure within the well) to the surface. The expanding cement will be placed in the well under a pressure of at least 200 pounds per square inch.

Portland cement or a lightweight cement mixture may be used to fill the area from 100 feet above the top of the uppermost mineable coal seam (or higher if required by the district manager based on his judgment that a higher distance is required due to the geological strata, or due to the pressure within the well) to the surface.

- (2) The operator shall embed steel turnings or other small magnetic particles in the top of the cement near the surface to serve as a permanent magnetic monument of the well. In the alternative, a 4-inch or larger casing, set in cement, shall extend at least 36 inches above the ground level with the API well number engraved or welded on the casing. When the hole cannot be marked with a physical monument (i.e. prime farmland), high-resolution GPS coordinates (one-half meter resolution) are required.
- c. MANDATORY PROCEDURES FOR PLUGGING OR REPLUGGING OIL AND GAS WELLS FOR USE AS DEGASIFICATION WELLS

After completely cleaning out the well as specified in paragraph 2(a) above, the following procedures shall be utilized when plugging or replugging wells that are to be used as degasification wells:

- (1) The operator shall set a cement plug in the well by pumping an expanding cement slurry down the tubing to provide at least 200 feet (400 feet if the total well depth is 4,000 feet or greater) of expanding cement below the lowest mineable coal seam, unless the district manager requires a greater depth based on his judgment that a greater depth is required due to the geological strata, or due to the pressure within the well. The expanding cement will be placed in the well under a pressure of at least 200 pounds per square inch. The top of the expanding cement shall extend at least 50 feet above the top of the coal seam being mined, unless the district manager requires a greater distance based on his judgment that a greater distance is required due to the geological strata, or due to the pressure within the well.
- (2) The operator shall securely grout into the bedrock of the upper portion of the degasification well a suitable casing in order to protect it. The remainder of this well may be cased or uncased.

- (3) The operator shall fit the top of the degasification casing with a wellhead equipped as required by the district manager in the approved ventilation plan.
- (4) Such equipment may include check valves, shut-in valves, sampling ports, flame arrestor equipment, and security fencing.
- (5) Operation of the degasification well shall be addressed in the approved ventilation plan. This may include periodic tests of methane levels and limits on the minimum methane concentrations that may be extracted.
- (6) After the area of the coal mine that is degassed by a well is sealed or the coal mine is abandoned, the operator must plug all degas wells using the following procedures:
 - (i) The operator shall insert a tube to the bottom of the well or, if not possible, to within 100 feet above the coal seam being mined. Any blockage must be removed to ensure that the tube can be inserted to this depth.
 - (ii) The operator shall set a cement plug in the well by pumping Portland cement or a lightweight cement mixture down the tubing until the well is filled to the surface.
 - (iii) The operator shall embed steel turnings or other small magnetic particles in the top of the cement near the surface to serve as a permanent magnetic monument of the well. In the alternative, a 4-inch or larger casing, set in cement, shall extend at least 36 inches above the ground level with the API well number engraved or welded on the casing.

d. MANDATORY ALTERNATIVE PROCEDURES FOR PREPARING AND PLUGGING OR REPLUGGING OIL OR GAS WELLS

The following provisions apply to all wells which the operator determines, and the MSHA district manager agrees, cannot be completely cleaned out due to damage to the well caused by subsidence, caving or other factors.

- (1) The operator shall drill a hole adjacent and parallel to the well, to a depth of at least 200 feet (400 feet if the total well depth is 4,000 feet or greater) below the lowest mineable coal seam, unless the district manager requires a greater depth based on his judgment that a greater depth is required due to the geological strata, or due to the pressure within the well.
- (2) The operator shall use a geophysical sensing device to locate any casing which may remain in the well.

- (3) If the well contains casing(s), the operator shall drill into the well from the parallel hole. All casings shall be perforated or ripped to permit the injection of cement into voids within and around the well. The operator shall ensure that work performed prior to the date of this order to perforate or rip all casing remaining at mineable coal seam levels is consistent with either Appendix A or Appendix B (attached). All work performed after the date of this order to perforate or rip all casing remaining at mineable coal seam levels shall be consistent with Appendix A. Perforations or rips consistent with Appendix A or Appendix B, as applicable by the date of this order, are required at least every 50 feet from at least 200 feet (400 feet if the total well depth is 4,000 feet or greater) below the base of the lowest mineable coal seam up to 100 feet above the seam being mined, unless the district manager requires a greater distance based on his judgment that a greater distance is required due to the geological strata, or due to the pressure within the well. The operator shall fill the annulus between the casings and between the casings and the well wall with expanding (minimum 0.5% expansion upon setting) cement, and shall ensure that these areas contain no voids. If the operator, using a casing bond log, can demonstrate to the satisfaction of the district manager that the annulus of the well is adequately sealed with cement, then the operator will not be required to perforate or rip the casing for that particular well, or fill these areas with cement. When multiple casing and tubing strings are present in the coal horizon(s), any casing which remains shall be ripped or perforated and filled with expanding cement as indicated above. An acceptable casing bond log for each casing and tubing string is needed if used in lieu of ripping or perforating multiple strings.
- (4) Where the operator determines, and the district manager agrees, that there is insufficient casing in the well to allow the method outlined in subparagraph (d)(3) to be used, then the operator shall use a horizontal hydraulic fracturing technique to intercept the original well. From at least 200 feet (400 feet if the total well depth is 4,000 feet or greater) below the base of the lowest mineable coal seam to a point at least 50 feet above the seam being mined, the operator shall fracture in at least six places at intervals to be agreed upon by the operator and the district manager after considering the geological strata and the pressure within the well. The operator shall then pump expanding cement into the fractured well in sufficient quantities and in a manner which fills all intercepted voids.
- (5) The operator shall prepare down-hole logs for each well. They shall consist of a caliper survey and log(s) suitable for determining the top, bottom, and thickness of all coal seams and potential hydrocarbon producing strata and the location for the bridge plug. The operator may obtain logs from the adjacent hole rather than the well if the condition of the well makes its impractical to insert the equipment necessary to obtain the log. The district manager may approve the use of a down-hole camera survey in lieu of down-hole logs if in his judgment such logs would not be suitable for obtaining the above-listed data or are

impractical to obtain due to the condition of the drill hole. A journal shall be maintained describing the depth of each material encountered, the nature of each material encountered; bit size and type used to drill each portion of the hole; length and type of each material used to plug the well; length of casing(s) removed, perforated or ripped or left in place; and other pertinent information concerning sealing the well. Invoices, work-orders, and other records relating to all work on the well shall be maintained as part of this journal and provided to MSHA upon request.

- (6) After the operator has plugged the well as described in subparagraphs (d)(3) and/or (d)(4), the operator shall plug the adjacent hole, from the bottom to the surface, with Portland cement or a lightweight cement mixture. The operator shall embed steel turnings or other small magnetic particles in the top of the cement near the surface to serve as a permanent magnetic monument of the well. In the alternative, a 4-inch or larger casing, set in cement, shall extend at least 36 inches above the ground level.

A combination of the methods outlined in subparagraphs (d)(3) and (d)(4) may have to be used in a single well, depending upon the conditions of the hole and the presences of casings. The operator and the district manager should discuss the nature of each hole. The district manager may require that more than one method be utilized. The mine operator may submit an alternative plan to the district manager for approval to use different methods to address wells that cannot be completely cleaned out.

The district manager may require additional documentation and certification by a registered petroleum engineer to support the proposed alternative methods.

3. MANDATORY PROCEDURES WHEN MINING WITHIN 100-FOOT DIAMETER BARRIER AROUND WELL

- a. A representative of the operator, a representative of the miners, the appropriate State agency, or the MSHA district manager may request that a conference be conducted prior to intersecting any plugged or replugged well. Upon receipt of any such request, the district manager shall schedule such a conference. The party requesting the conference shall notify all other parties listed above within a reasonable time prior to the conference to provide opportunity for participation. The purpose of the conference shall be to review, evaluate, and accommodate any abnormal or unusual circumstance(s) related to the condition of the well or surrounding strata when such conditions are encountered.
- b. The operator shall intersect a well on a shift approved by the district manager. The operator shall notify the district manager and the miners' representative in sufficient time prior to intersecting a well in order to provide an opportunity to have the representatives present.

- c. When using continuous mining methods, the operator shall install drivage sights at the last open crosscut near the place to be mined to ensure intersection of the well. The drivage sites shall not be more than 50 feet from the well. When using the longwall-mining methods, distance markers shall be installed on 5-foot centers for a distance of 50 feet in advance of the well in the headgate entry and in the tailgate entry.
- d. The operator shall ensure that fire-fighting equipment including fire extinguishers, rock dust, and sufficient fire hose to reach the working face area of the well intersection (when either the conventional or continuous mining method is used) is available and operable during all well intersections. The fire hose shall be located in the last open crosscut of the entry or room. The operator shall maintain the water line to the belt conveyor tailpiece along with a sufficient amount of fire hose to reach the farthest point of penetration on the section. When the longwall mining method is used, a hose to the longwall water supply is sufficient.
- e. The operator shall ensure that sufficient supplies of roof support and ventilation materials shall be available and located at the last open crosscut. In addition, emergency plugs and suitable sealing materials shall be available in the immediate area of the well intersection.
- f. On the shift prior to intersecting the well, the operator shall service all equipment and check it for permissibility. Water sprays, water pressures and water flow rates used for dust and spark suppression shall be examined and any deficiencies corrected.
- g. The operator shall calibrate the methane monitor(s) on the longwall, continuous mining machine, or cutting machine and loading machine on the shift prior to intersecting the well.
- h. When mining is in progress, the operator shall perform tests for methane with a handheld methane detector at least every 10 minutes from the time that mining with the continuous mining machine or longwall face is within 30 feet of the well until the well is intersected. During the actual cutting process, no individual shall be allowed on the return side until the well intersection has been completed, and the area has been examined and declared safe. All workplace examinations on the return side of the shearer will be conducted while the shearer is idle.
- i. When using continuous or conventional mining methods, the working place shall be free from accumulations of coal dust and coal spillages, and rock dust shall be placed on the roof, rib, and floor to within 20 feet of the face when intersecting the well. On longwall sections, rock dusting shall be conducted and placed on the roof, rib, and floor up to both the headgate and tailgate gob.
- j. When the well is intersected, the operator shall de-energize all equipment, and thoroughly examine and determine the area is safe before mining is resumed.

- k. After a well has been intersected and the working place determined to be safe, mining shall continue inby the well a sufficient distance to permit adequate ventilation around the area of the well.
- l. If the casing is cut or milled at the coal seam level, the use of torches should not be necessary. However, in rare instances, torches may be used for inadequately or inaccurately cut or milled casings.

No open flame shall be permitted in the area until adequate ventilation has been established around the well bore and methane levels of less than 1.0% are present in all areas that will be exposed to flames and sparks from the torch. The operator shall apply a thick layer of rock dust to the roof, face, floor, ribs and any exposed coal within 20 feet of the casing prior to the use of torches.

- m. Non-sparking (brass) tools will be located on the working section and will be used to expose and examine cased wells.
- n. No person shall be permitted in the area of the well intersection except those actually engaged in the operation, including company personnel, representatives of the miners, personnel from MSHA, and personnel from the appropriate State agency.
- o. The operator shall 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.
- p. The well intersection shall be under the direct supervision of a certified individual. Instructions concerning the well intersection shall be issued only by the certified individual in charge.
- q. The provisions of this Order do not impair the authority of representatives of MSHA to interrupt or halt the well intersection, and to issue a withdrawal order, when they deem it necessary for the safety of the miners. MSHA may order an interruption or cessation of the well intersection and/or a withdrawal of personnel by issuing either a verbal or a written order to that effect to a representative of the operator, which order shall include the basis for the order. Operations in the affected area of the mine may not resume until a representative of MSHA permits resumption. The mine operator and miners shall comply with verbal or written MSHA orders immediately. All verbal orders shall be committed to writing within a reasonable time as conditions permit.
- r. A copy of this Order shall be maintained at the mine and be available to the miners.
- s. Within 30 days after this Order becomes final, the operator shall submit proposed revisions for its approved 30 CFR Part 48 training plan to the district manager. These proposed revisions shall include initial and refresher training regarding compliance with the terms and conditions stated in the Order. The operator shall provide all

miners involved in the well intersection with training regarding the requirements of this Order prior to mining within 150 feet of the next well intended to be mined through.

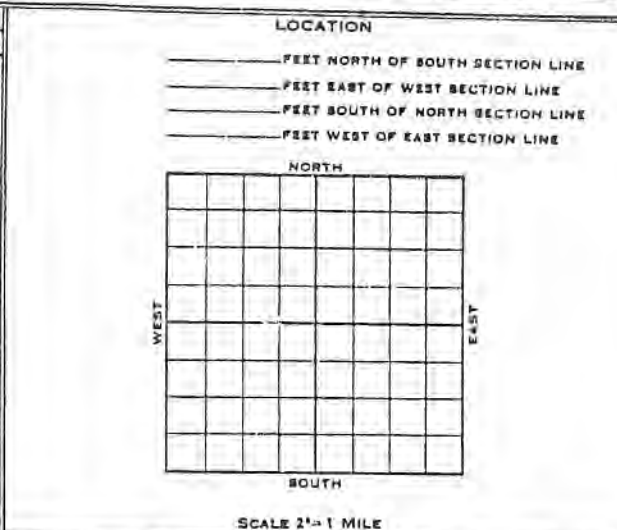
- t. The responsible person required under 30 C.F.R. § 75.1501 is responsible for well intersection emergencies. The well intersection procedures should be reviewed by the responsible person prior to any planned intersection.
- u. Within 30 days after this Order becomes final, the operator shall submit proposed revisions for its approved mine emergency evacuation and firefighting program of instruction required under 30 C.F.R. § 75.1502. The operator will revise the program of instruction to include the hazards and evacuation procedures to be used for well intersections. All underground miners will be trained in this revised plan within 30 days of submittal.

THE PURE OIL COMPANY
WELL LOG AND RELATED DATA

470050 06/07/2019

DIVISION Eastern Producing DISTRICT Charleston LEASE T. L. Brown
ACRES 2.000 LEASE NO. 222 AFE NO. 202 ELEVATION 1095 WELL NO. 2
LOT-SEC. TWP. ROE. 2207-DIST. 3400 Sherman
SURVEY COUNTY Boone STATE West Virginia

LOG			FORMATION
FROM	TO	TOTAL	
0	75	75	Soil, sand
75	105	30	Slate, black
105	130	25	Sand, yellow
130	150	20	Slate, black
150	215	65	Sand, gray
215	240	25	Slate, black
240	245	5	Coal, black
245	265	20	Slate, black
		HPW @ 250'	
265	270	5	Coal, black
270	290	20	Slate, black
290	300	10	Lime, gray
300	355	55	Slate, black
355	410	55	Lime, gray
410	490	80	Sand, gray
490	535	45	Slate, black
535	540	5	Coal, black
540	555	15	Lime, gray
555	570	15	Slate, black
570	605	35	Sand, gray
605	610	5	Slate, black
610	670	60	Sand, gray
670	710	40	Slate, black
710	715	5	Sand, gray
715	725	10	Slate, black
725	800	75	Sand, gray
800	845	45	Lime, gray
845	885	40	Slate, black
885	905	20	Sand, gray
905	920	15	Slate, black
920	940	20	Sand, gray
940	955	15	Slate, black
955	1090	135	GRAMPUS, gray
1090	1215	125	Slate, gray
1215	1510	295	SALT SAND, white
		HPW @ 1235'	
1510	1695	185	Lime, gray
1695	1808	113	MAXON SAND, white
1808	1830	22	Red Rock, red
1830	1880	50	Lime Shells, gray
1880	1895	15	Red Rock, red
1895	1915	20	Lime Shells, gray
1915	1975	60	Slate, black
1975	2025	50	Lime, black
2025	2075	50	LITTLE LIME, black
2075	2080	5	Pencil Cave
2080	2275	195	BIG LIME, white
2275	2305	30	BIG INJUN, red
2305	2496	91	Slate, black
2496	2565	69	WEIR SAND, gray
2565	2715	150	Slate, black
2715	2739	24	Coffee Shale, brown
2739	2777	38	BEREA SAND, white
2777	2779	2	Slate, black
	2779		TOTAL DEPTH



CASING AND CEMENTING RECORD

SIZE CASING	10"	* 8"	6"
THREAD			
WEIGHT			
GRADE			
CONDITION			
SET AT	606'	1525'	2110'
SACKS CEMENT			
SIZE OF HOLE			
With Threads 650' 3" 1425' 2099' 11"			
* Pulled 1190' leaving 335' in hole.			

LINER RECORD

SIZE	WT.	COND.	LENGTH	BLANK	PERF.	SET AT
3 1/2"			36'	3'	33'	2785'

GUN PERFORATING RECORD

DATE	CASING	FROM	TO	SIZE SHOTS	NO. SHOTS

SHOT RECORD

DATE	TOP	BOTTOM	SHOT-QUANT.	REMARKS
8-5-20	2750'	2775'	80 Qts.	1st 19' in sand.
				2nd 22' in sand.

DRILLING: COMMENCED 5-27-20 COMPLETED 8-3-20

ELECTRICAL SURVEY BY _____ DATE _____

DRILLED WITH _____ Cable _____ 100

DRILLED IN WITH _____ Cable _____ 100

FIRST PROD. - WATER DATE _____ HRS. 24 DDLS. 122 0

WATER _____ M CU. FT. GAS _____ LBS. ROCK PER

FIRST PROD. AFTER ACID - DATE _____ HRS. 24 DDLS. 222 0

WATER _____ M CU. FT. GAS _____ LBS. ROCK PER

GAS/DIS. RATIO _____ POTENTIAL _____ GBL

GRAVITY _____ TEMP. _____ GRADE _____

Oil in Berea 2748' - 2777'
Black Oil 2745' - Green Oil 2749'
Gas in Weir 2510' - 2525'
Filled up 2000' in 5 hrs.

005-1604

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APR 2 2019
WV Department of
Environmental Protection

47005006/07/2019

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38 WV Division of
4-May-94 Environmental Protection

NOV 18 1994

STATE OF WEST VIRGINIA
DIVISION OF ENVIRONMENTAL PROTECTION
SECTION OF OIL AND GAS

API # 47- 5-01604-P

Well No. Brown 2

Plugged 9/2/94

Permitting
Office of Oil & Gas

AFFIDAVIT OF PLUGGING AND FILLING WELL

AFFIDAVIT SHOULD BE IN TRIPPLICATE, one copy mailed to the Division, one copy to be retained by the Well Operator and the third copy (and extra copies if required) should be mailed to each coal operator at their respective addresses.

Farm name: BROWN, FONTAINE E. ETAL Operator Well No.: BROWN #2

LOCATION: Elevation: 1,077.00 Quadrangle: SYLVESTER
District: SHERMAN County: BOONE
Latitude: 11100 Feet South of 38 Deg. 7 Min. 30 Sec.
Longitude: 6700 Feet West of 81 Deg. 32 Min. 30 Sec.

Well Type: OIL X GAS

Company: C J Services
Rt. 2, Box 159
Hamlin, WV 25523

Coal Operator Fontaine E. Brown
or Owner ETAL

Agent: Jerry Holcomb

Coal Operator _____
or Owner _____

Permit Issued: 05/04/94

AFFIDAVIT

STATE OF WEST VIRGINIA,
County of Boone ss:

Charles E. White and Chris Sowards being first duly sworn according to law depose and say that they are experienced in the work of plugging and filling oil and gas wells and were employed by the above named well operator, and participated in the work of plugging and filling the above well, and Rick Campbell Oil and Gas Inspector representing the Director, say that said work was commenced on the 25th day of Aug., 1994, and that the well was plugged and filled in the following manner:

TYPE	FROM	TO	PIPE REMOVED	LEFT
Cement	2148	2048	2148' 3"	2048' 3"
Cement	1300	1200	879' 3"	1231' 3"
Cement	899	799		606' 10"
Cement	580	510	Perf 7" @ 1300'	
Cement	310	210	Perf 10" @ S.D. 270-245'	
Cement	100	0	No Free Point on 10" Casing	
GEL BETWEEN ALL PLUGS				
				11/28/94

Description of monument: 7" Casing with API # Attached
and that the work of plugging and filling said well was completed on the 2nd day of Sept., 1994.

And further depose and say that the above is true and correct to the best of their knowledge and belief.

Sworn and subscribed to before me this 28th day of Sept., 1994
My commission expires August 28, 2001



Chris Sowards
Charles E. White
Notary Public

Oil and Gas Inspector: Rick Campbell

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APR 2 2009

WV Department of
Environmental Protection

47005016041 06/07/2019

FORM WV-4(B) FILE COPY
Obverse
10-91



1) Date: March 9 1994
2) Operator's Well No: Broun #2
3) API Well No. 47 State 005 County 1604-P Permit

STATE OF WEST VIRGINIA
DIVISION OF ENVIRONMENTAL PROTECTION
OFFICE OF OIL & GAS
APPLICATION FOR A PERMIT TO PLUG & ABANDON

1004

4) WELL TYPE: A Oil X / Gas _____ / Liquid injection _____ / Waste disposal _____
B (If "Gas", Production _____ / Underground storage) _____ / Deep _____ / Shallow X /)
5) LOCATION Elevation 1077 Watershed: JOEG CREEK District: Sherman County: Boone Quadrangle: Sylvester
6) WELL OPERATOR C J Services CODE 305 7) DESIGNATED AGENT Jerry Holcomb
Address: Rt. 2, Box 159 Address: Rt. 2, Box 159
Hamlin, WV 25523 Hamlin, WV 25523
8) OIL & GAS INSPECTOR TO BE NOTIFIED 9) PLUGGING CONTRACTOR
Name: Richard Campbell Name: C J Services
Address: _____ Address: Rt. 2, Box 159
Hamlin, WV 25523

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

19037

2" Cemented to 2300'
Cut 2" @ 2200'
Cement 2200-2100
Gel 2100-1600
Cut 7" @ 1600
Cement 1600-1500
Gel 1500-1200
Cement 1200-1100
Gel 1100-650

Cement 650-500
Gel 500-310
Cut 10" @ 310
Cement 310-210
Gel 210-50
Cement 50-0

OFFICE USE ONLY

PLUGGING PERMIT

Permit number 005-1604-P

May 4th 1994
(Date)

This permit covering the well operator and well location shown below is evidence of permission granted to plug in accordance with the pertinent legal requirements, subject to the conditions contained herein and on the reverse hereof. Notification must be given to the District Oil and Gas Inspector 24 hours before actual permitted work has commenced.

The permitted work is as described in the Notice and Application, plat, subject to any modifications and amendments on the reverse hereof.

Permit expires 5-4-96 unless plugging is commenced prior to that date and prosecuted with due diligence.

Bond _____
Agree _____
Plat _____
Casing Ke
Well _____
OTHER _____

James S. ...
Chief, Office of Oil & Gas

NOTE: Keep the copy of this permit posted at the plugging location.

See the reverse side of the APPLICANT'S COPY for instructions to the well operator.

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Office of Oil and Gas
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WV Department of
Environmental Protection

47005016045 06/07/2019

IR-26-P
34-May-94

API # 47- 5-01604-P

State of West Virginia
Division of Environmental Protection
Section of Oil and Gas

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OFFICE OF OIL AND GAS

OCT 17 1994

INSPECTOR'S PERMIT SUMMARY FORM

Farm name: BROUN, FONTAINE E. ETAL Operator Well No.: BROUN 2
WV Division of Environmental Protection

LOCATION: Elevation: 1,077.00 Quadrangle: SYLVESTER
District: SHERMAN County: BOONE
Latitude: 11100 Feet South of 38 Deg. 7 Min. 30 Sec.
Longitude 6700 Feet West of 81 Deg. 32 Min. 30 Sec.

EXISTING WELL INFORMATION:
Company: UNION OIL CO. OF CALIFORNIA
1020 NORTHEAST STREET
OLNEY, IL

Casing & Tubing Size	Used in Drilling	Left in Well	Cement Fill Up Cu. Ft.

Agent: CARL HAMRICK II
Inspector: RICHARD CAMPBELL
Permit Issued: 05/04/94
Plugging Commenced: 9-25-94
Plugging Completed: 9-25-94
Verbal Plugging
Permission granted on:
Rotary Cable Rig
Total Depth (feet)
Fresh water depths (ft)

Salt water depths (ft)
Is coal being mined in area (Y/N)?
Coal Depths (ft):

PLUGGING WORK

TYPE	FROM	TO	PIPE REMOVED
Steel Pipe	2148	2048	210' x 2"
Cement	848	700	Light 2" c. 1500'
Cement	1500	795	Build 875' at 7"
"	879		Build 10" @ 240-220-242
"	715	810	
"	261	0	

AFFIDAVIT RECEIVED 9-21-94 RECLAMATION SCORE 99
DATE RELEASED 9-21-94

Inspector's Signature: Richard A. Campbell

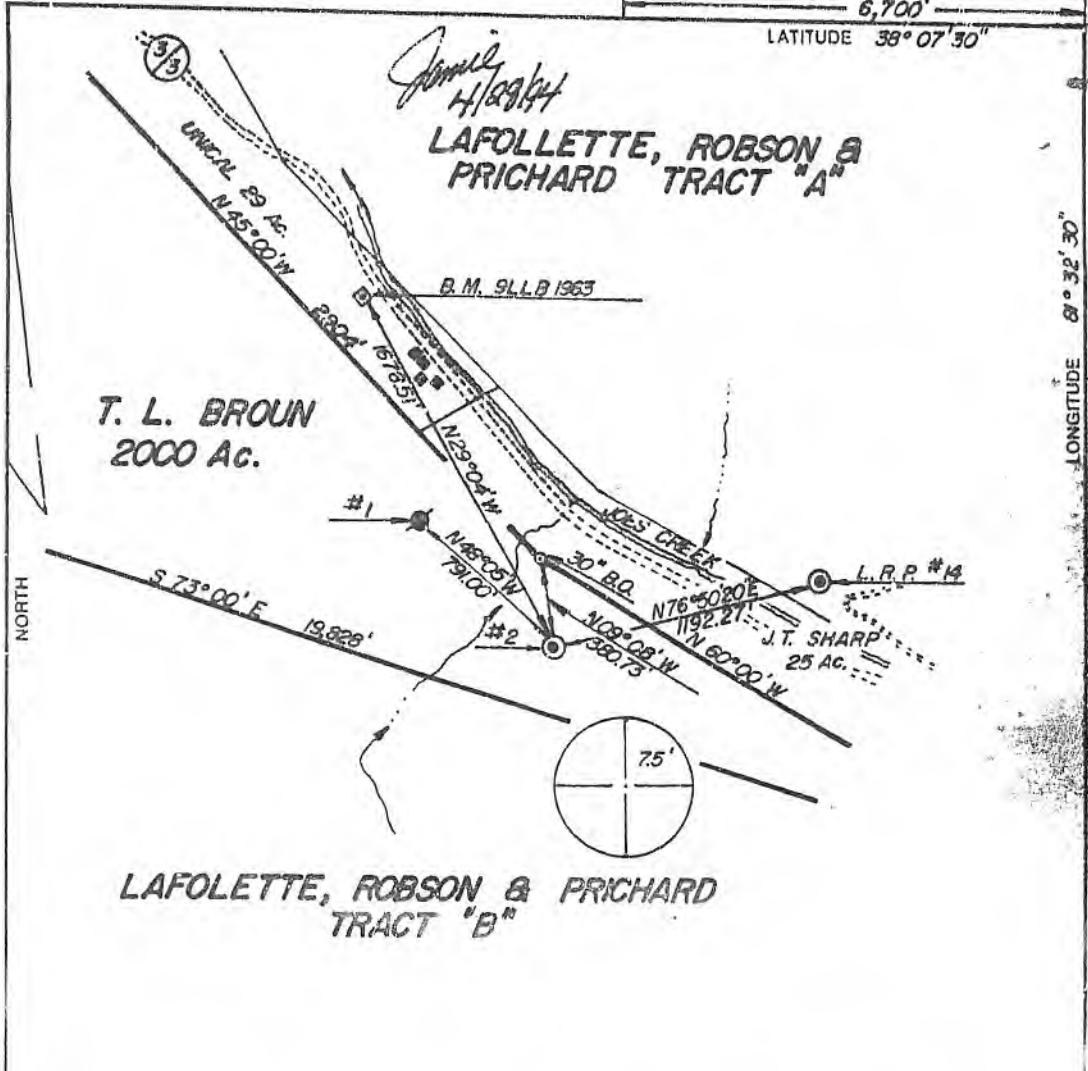
RECORD ALL VISITS TO THIS WELL ON BACK

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APR 2 2019

WV Department of Environmental Protection

47005018049 06/07/2019



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

FILE NO. _____
 DRAWING NO. _____
 SCALE 1" = 600'
 MINIMUM DEGREE OF ACCURACY 1 in 2000
 PROVEN SOURCE OF ELEVATION B.M. 911 B 1963
EL. 881

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 ENERGY.
 (SIGNED) [Signature]
 R.P.E. _____ L.I.S. 372

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 Office of Oil and Gas
 APR 2 2019
 WV Department of Environmental Protection
 PLACE SEAL HERE

STATE OF WEST VIRGINIA
 DEPARTMENT OF ENERGY
 OIL AND GAS DIVISION



DATE FEBRUARY 17, 1994
 OPERATOR'S WELL NO. BROWN 2
 API WELL NO. 47-005-01604-P
 STATE COUNTY PERMIT

WELL TYPE: OIL ___ GAS ___ LIQUID INJECTION ___ WASTE DISPOSAL ___
 (IF "GAS,") PRODUCTION ___ STORAGE ___ DEEP ___ SHALLOW ___
 LOCATION: ELEVATION 1077 WATER SHED JOES CREEK
 DISTRICT SHERMAN COUNTY BOONE
 QUADRANGLE SYLVESTER
 SURFACE OWNER L. T. BROUN ACREAGE 2000
 OIL & GAS ROYALTY OWNER L. T. BROUN LEASE ACREAGE 2000

PROPOSED WORK: DRILL ___ 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 BEVERA SAND ESTIMATED DEPTH 2780
 DESIGNATED AGENT JERRY HOLCOMB
 ADDRESS RT. 2 BOX 159 HAMLIN W.V. 25823
 Union Oil Company of California
 P.O. Box 447
 Clay City, Illinois 62824-0447

FORM WW-8
 HALLS INC. 68285

COUNTY NAME Boone
 PERMIT 1624-P

1.) Date: 01/31/19
2.) Operator's Well Number
Broun 2
3.) API Well No.:
47-005-01604

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:	5) (a) Coal Operator
(a) Name <u>Penn Virginia</u>	Name <u>Panther Creek Mining, LLC</u>
Address <u>One Carbon Center, Suite 100</u>	Address <u>3228 Summit Square Place, Suite 180</u>
<u>Chesapeake, WV 25315</u>	<u>Lexington, KY 40509</u>
(b) Name _____	(b) Coal Owner(s) with Declaration
Address _____	Name <u>Penn Virginia</u>
_____	Address <u>One Carbon Center, Suite 100</u>
_____	<u>Chesapeake, WV 25315</u>
(c) Name _____	Name _____
Address _____	Address _____
_____	_____
6) Inspector <u>Jeff Smith</u>	(c) Coal Lessee with Declaration
Address <u>5369 Big Tyler Road</u>	Name <u>Panther Creek Mining, LLC</u>
<u>Cross Lanes, WV 25313</u>	Address <u>3228 Summit Square Place, Suite 180</u>
Telephone <u>681-313-6743</u>	<u>Lexington, KY 40509</u>

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 Panther Creek Mining, LLC
 By: Gary Acord
 Its: Agent
 Address P.O. Box 99
Dawes, WV. 25054
 Telephone 681-221-8100 ext. 8847

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Office of Oil and Gas
APR 2 2019

WV Department of Environmental Protection

Subscribed and sworn before me this 28th day of March 2019
Alyssa N. Romeo
My Commission Expires 2/6/23

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 deprivacyofficer@wv.gov

SURFACE OWNER WAIVER

Operator's Well
Number

Broun 2

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.

RECEIVED
Office of Oil and Gas

APR 2 2019

VOLUNTARY STATEMENT OF NO OBJECTION

I hereby state that I have read the instructions to surface owners and that I have received copies of the 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 these materials.

FOR EXECUTION BY A NATURAL PERSON
CORPORATION,

FOR EXECUTION BY A

Signature

Date

Name

By
Its

Date

[Handwritten signature]
Date 3/18/19

Larry George
By Presiding Co-Manager
Date 3/18/19

West Virginia

4700501604
06/07/2019

API No. 47-005-01604

Farm Name Broun

Well No. Broun 2

WW-4B

**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 than 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 X / owner _____ / lessee X / 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: 3-28-2019

Panther Creek Mining, LLC

By: GARY E. ACORD
ENGINEER

Its: [Signature]

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WV Department of
Environmental Protection

WW-4B

4700501604

06/07/2019

API No. 47-005-01604

Farm Name _____

Well No. Broun 2

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 than 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.

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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.

Penn Virginia

Date: 3/18/19

By: Larry W. George
Its Presiding Manager

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Office of Oil and Gas

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WV Department of
Environmental Protection

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

Operator Name Blackhawk Mining, LLC OP Code _____

Watershed (HUC 10) Joe's Creek of Big Coal River Quadrangle Sylvester

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: Cement and cuttings

Will a synthetic liner be used in the pit? Yes No If so, what ml.? 20

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: No

Drilling medium anticipated for this well (vertical and horizontal)? Air, freshwater, oil based, etc. Fresh water

-If oil based, what type? Synthetic, petroleum, etc. _____

Additives to be used in drilling medium? None

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

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

-Landfill or offsite name/permit number? _____

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APR 2 2019

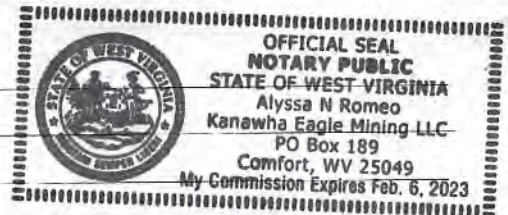
WV Department of
Environmental Protection

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.

Company Official Signature Gary E. Acord
Company Official (Typed Name) GARY E. ACORD
Company Official Title ENV. ENGINEER



Subscribed and sworn before me this 28 day of March, 20 19

Alyssa N. Romeo Notary Public

My commission expires 2/6/23

Proposed Revegetation Treatment: Acres Disturbed _____ Prevegetation pH _____

Lime 2 Tons/acre or to correct to pH 6.5

Fertilizer type (10-20-20) or equivalent

Fertilizer amount 500 lbs/acre

Mulch 2 tons or 1000-1500 lbs hydroseed mulch Tons/acre

Seed Mixtures

Temporary		Permanent	
Seed Type	lbs/acre	Seed Type	lbs/acre
_____	_____	Fescue	40
_____	_____	Clover	5
_____	_____	Ryegrass	5

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: Jeffrey Smith

Comments: All sediment control to be removed prior to release

Title: Oil & Gas Inspector Date: 4-2-19

Field Reviewed? () Yes () No

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

Operator Name: Panther Creek Mining, LLC

Watershed (HUC 10): Joe's Creek of Big Coal River Quad: Sylvester

Farm Name: Broun

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

Re-drilling of plugged liquid injection well (in order to re-plug to 101c standards to mine through the well). Water used during re-drilling is pumped through a pipe and discharged into a lined pit. The pit is designed to hold approximately 150% of the anticipated drilling water. The pit contents (drilling water and cuttings) in the pit will be allowed to solidify and any remaining water will be sampled by a certified lab before the pit is reclaimed. The only water anticipated to be discharged to the pit is the drilling water. Brine water is not expected to be encountered while re-drilling and plugging the well. Water discharged into the pit may be used to mix the cement for re-plugging the well.

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

Water used during re-drilling is pumped through a pipe and discharged into a lined pit. The pit is designed to hold approximately 150% of the anticipated drilling water. The pit contents (drilling water and cuttings) in the pit will be allowed to solidify and any remaining water will be sampled by a certified lab before the pit is reclaimed. Straw bales, oil absorption pads, and silt fencing will be available on the mine property in case of spills or contaminations.

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

The closest body of water is Joe's Creek located approximately 890 ft. away from the well site and anticipated pit.

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

Mining operations storage tanks regulated under two GPP plans.

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APR 2 2019

WV Department of
Environmental Protection

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

None for Joes Creek watershed. Adjacent watersheds are sampled bimonthly for the mining operations. The results of the bimonthly samplings are submitted to the WV DEP.

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.

Each employee and contractor involved in re-plugging the well will be trained on the proper environmental procedures of the job. The pit and area around the pit will be visually examined daily for leaks and tears. If a leak or tear is observed, discharge to the pit will cease until proper repairs can be made to the pit or liner. Drilling equipment will be inspected each day before work begins to ensure there are no fluid leaks. Straw bales, oil absorption pads, and silt fencing will be available on the mine property in case of spills. Any contaminated materials will be properly disposed of in specially marked containers. If there is any remaining water in the pit once plugging is complete, it will be analyzed by a lab before the pit is reclaimed.

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

The pit and area around the pit will be visually examined daily for leaks and tears. If a leak or tear is observed, discharge to the pit will cease until proper repairs can be made to the pit or liner. Drilling equipment will be inspected each day before work begins to ensure there are no fluid leaks. Straw bales, oil absorption pads, and silt fencing will be available on the mine property in case of spills. Any contaminated materials will be properly disposed of in specially marked containers. If there is any remaining water in the pit once plugging is complete, it will be analyzed by a lab before the pit is reclaimed.

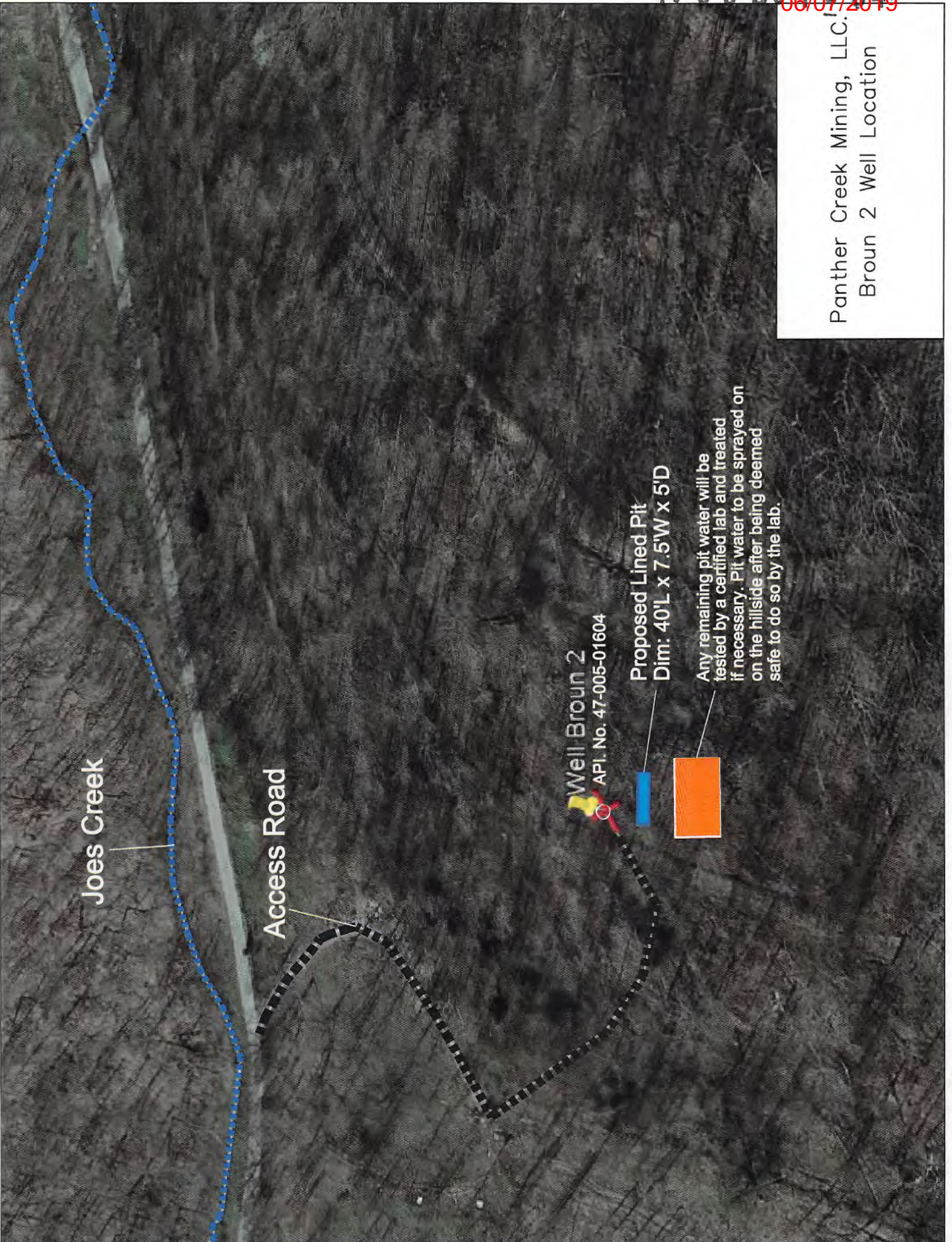
RECEIVED
Office of Oil and Gas

APR 2 2019

WV Department of
Environmental Protection

Signature: *Gary E. Accord*

Date: 3-28-2019



Joes Creek

Access Road

Well Broun 2

API. No. 47-005-01604

Proposed Lined Pit
Dim: 40'L x 7.5'W x 5'D

Any remaining pit water will be tested by a certified lab and treated if necessary. Pit water to be sprayed on the hillside after being deemed safe to do so by the lab.

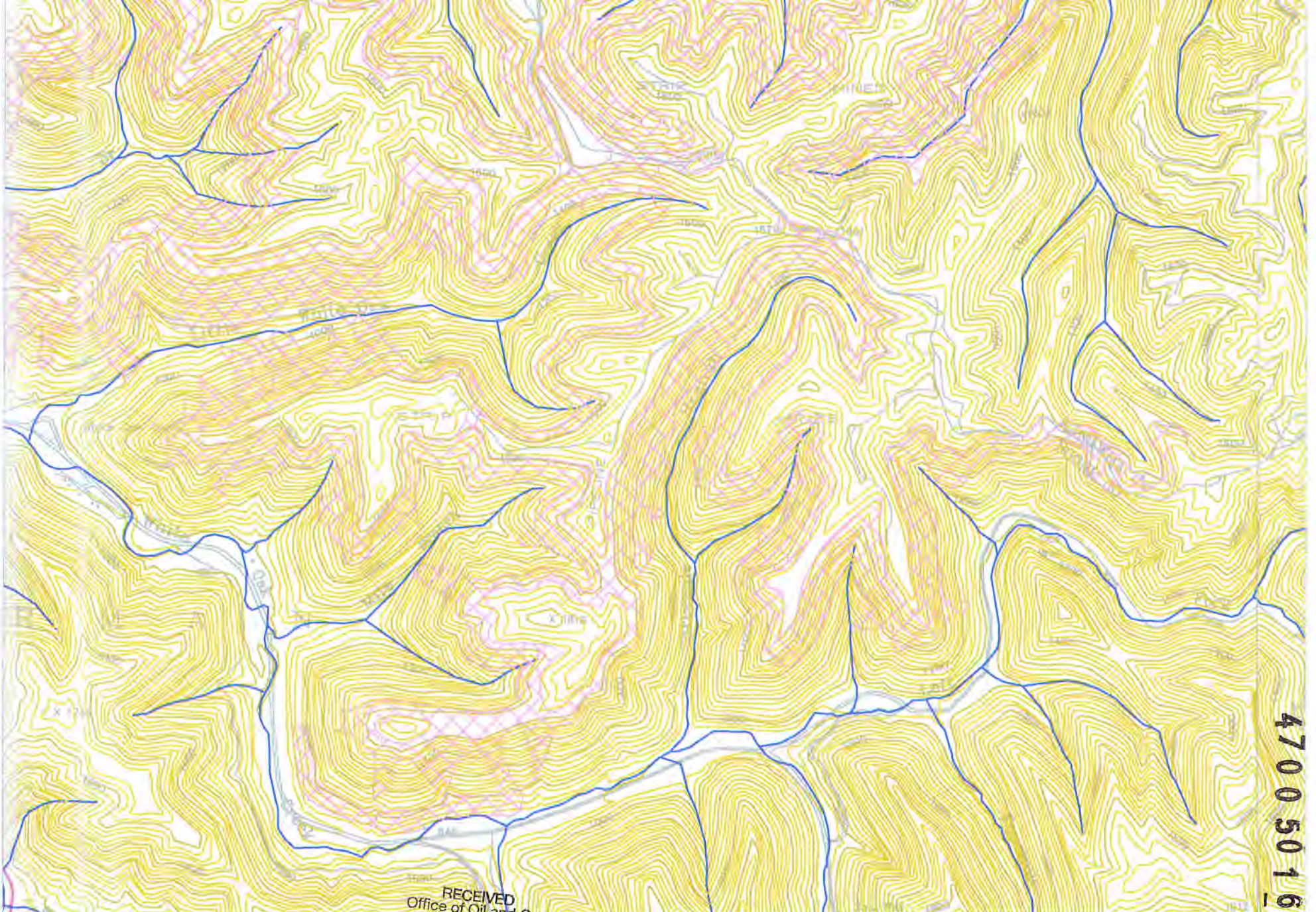
Panther Creek Mining, LLC.
Broun 2 Well Location

A topographic map showing contour lines in yellow and pink, with blue lines representing water features. A white rectangular label is centered on the map, containing well and API numbers and UTM coordinates. A vertical number '4700501604' is printed on the right edge of the map.

WELL NO. Broun 2 AREA
API NO. 47-005-01604

UTM: NAD 83
N: 4216475.7
E: 450470.2

4700501604



4700501604

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PANTHER CREEK MINING, LLC
AMERICAN EAGLE MINE

APR No. 16 602 01804
Scale 1" = 2000'

WV Department of
Environmental Protection

SLYVSTER QUADRANGLE
WEST VIRGINIA - HOONE CO.
5 MINUTE SERIES (DIPLOGRAPHS)



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

API: 47-005-01604 WELL NO.: Broun 2
FARM NAME: Broun
RESPONSIBLE PARTY NAME: Gary E. Acord
COUNTY: Boone DISTRICT: Sherman
QUADRANGLE: Sylvester
SURFACE OWNER: Broun
ROYALTY OWNER: Broun
UTM GPS NORTHING: 4216475.7 meters (NAD-83) (1077')
UTM GPS EASTING: 450470.26 meters (NAD-83) GPS ELEVATION: 328.3 m.

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 ___

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APR 2 2019

WV Department of
Environmental Protection

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.

Gary E. Acord ENGINEER/AGENT 3-28-2019
Signature Title Date