



west virginia department of environmental protection

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

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

April 12, 2016

WELL WORK PLUGGING PERMIT

Plugging

This permit, API Well Number: 47-3903059, issued to CHESAPEAKE APPALACHIA, L.L.C., is evidence of permission granted to perform the specified well work at the location described on the attached pages and located on the attached plat, subject to the provisions of Chapter 22 of the West Virginia Code of 1931, as amended, and all rules and regulations promulgated thereunder, and to all conditions and provisions outlined in the pages attached hereto. Notification shall be given by the operator to the Oil and Gas Inspector at least 24 hours prior to the construction of roads, locations, and/or pits for any permitted work. In addition, the well operator shall notify the same inspector 24 hours before any actual well work is commenced and prior to running and cementing casing. Spills or emergency discharges must be promptly reported by the operator to 1-800-642-3074 and to the Oil and Gas inspector.

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

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


James Martin
Chief

Operator's Well No: 2458
Farm Name: WARD, DAVID
API Well Number: 47-3903059
Permit Type: Plugging
Date Issued: 04/12/2016

Promoting a healthy environment.

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.
4. This well is under a consent order and must be plugged under the terms of that agreement.

FORM WW-4 (B)
Observe
File Copy
(Rev. 2/01)

1) Date: 3/10/2016
2) Operator's Well No. 802458 P&A
3) API Well No. 47-039-03059

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 _____
(Is Gas, Production X or Underground storage _____) Deep _____ Shallow X
- 5) Location: Elevation 882' Watershed Mill Hollow of Kellys Creek
District Cabin Creek County Kanawha Quadrangle Cedar Grove, WV 7.5'
- 6) Well Operator Chesapeake Appalachia, L.L.C. 7) Designated Agent Jessica Greathouse
Address P.O. Box 18496 Address P.O. Box 6070
Oklahoma City, OK 73154-0496 Charleston, WV 25362
- 8) Oil and Gas Inspector to be notified 9) Plugging Contractor
Name Terry Urban 304-544-5415 Name Chesapeake Appalachia, L.L.C.
Address P.O. Box 1207 Address P.O. Box 18496
Clendenin, WV 25045 Oklahoma City, OK 73154-0496

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

See Attached Sheet

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

Work Order approved by Inspector *[Signature]* Date 3-22-16

1st Tank Battery Kelly's Creek

PLUGGING PROCEDURE

Elevation
882

Note: 302' of 8" has been pulled.

- 1) Prepare road and location, MIRU Service Rig
- 2) Pull 1.9" tubing and packer
- 3) Attempt to pull 3" and packer
 - A) If successful
 - a) Run W.S. to 2000', spot gel, pull W.S. to 1860'
 - b) Spot 250' cement plug 1860'-1610', pull W.S.
 - c) RIH with tools to check TOC. If top of plug is below 1640', then add cement to top of plug.
 - d) Proceed to step 4
 - B) If unsuccessful
 - a) Run in hole with tools to check TD approximately at 1985'
 - b) Run W.S. to 1985', spot gel
 - c) Spot 100' cement plug 1985'-1885', pull W.S.
 - d) Cut 3" at free-point (approximately 1661') and pull
 - e) Rip or shoot holes in 6 5/8" approximately at 1650' & 1630'
 - f) Run W.S. to 1661', spot gel
 - g) Spot 100' cement plug 1661'-1561', pull W.S.
 - h) Proceed to step 4
- 4) Cut 6 5/8" at free-point (approximately 1375') and pull
- 5) Run W.S. to 1375', spot gel
- 6) Spot 150' cement plug 1375'-1225', pull W.S.
- 7) Run in hole with tools to check TOC. If top of plug is below 1275', then add cement to top of plug. SPOT GEL
- 8) Rip or shoot holes approximately at 670' & 650'
- 9) Run W.S. to 670', spot gel
- 10) Spot 150' cement plug 670'-520', pull W.S.
- 11) Attempt to pull 10" casing
 - A) If successful
 - a) Run W.S. to 325', spot gel
 - b) Spot 150' cement plug 325'-175'
 - c) Proceed to step 12
 - B) If unsuccessful
 - a) Rip or shoot holes in 10" approximately at 230' & 210'
 - b) Run W.S. to 325', spot gel
 - c) Spot 150' cement plug 325'-175', pull W.S.
 - d) Cut 10" at free-point (approximately 125') and pull
 - e) Proceed to step 12
- 12) Pull or run W.S. to 125'
- 13) Spot 125' cement plug 125'-surface
- 14) Pull W.S. and top off with cement
- 15) Erect monument and reclaim as prescribed by law

Must Set
Elevation
Plug @ 882 ft

SET AS ON
PLUG

[Handwritten signature]

* 7a.

* 7a.

PULL 8" CASING. SET A. CEMENT PLUG FROM 1000' TO 850'. (ELEVATION)
IF 8" CANNOT BE PULLED, RIP OR PERFORATE @ ELEVATION AND SET
150' CEMENT PLUG.

2000'

39030597

WW4-A
Revised
2/01

1) Date: 3/10/2016
2) Operator's Well No. 802458 P&A
3) API Well No. 47-039-03059

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

4) Surface Owner(s) to be served:
(a) Name David Ward Heirs ✓
Address C/O James F. Brown IV
Attorney-in-Fact D. Ward Heirs
P.O. Box 88
Charleston, WV 25321
(b) Name Blackhawk Land & Resources, LLC ✓
Address 3228 Summit Square Place
Suite 180
Lexington, KY 40509
(c) Name _____
Address _____
6) Inspector Terry Urban
Address P.O. Box 1207
Clendenin, WV 25045
Telephone ~~304-389-7583~~ 304-544-5915

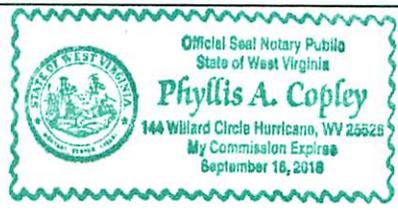
5) Coal Operator
(a) Name None
Address _____
Coal Owner(s) with Declaration ✓
(b) Name David Ward Heirs ✓
Address C/O James F. Brown IV
Attorney-in-Fact D. Ward Heirs
P.O. Box 88
Charleston, WV 25321
Name Blackhawk Land & Resources, LLC ✓
Address 3228 Summit Square Place, Suite 180
Lexington, KY 40509
Coal Lessee with Declaration
(c) Name Caternary Coal Company ✓
Address C/O Blackhawk Energy
100 Technology Drive
South Charleston, WV 25309

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 the 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 the 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: Chesapeake Appalachia, L.L.C.
By: [Signature]
Its: Manager - Operations, Appalachia South
Address: P.O. Box 18496
Oklahoma City, OK 73154-0496
Telephone: 405-935-4073

Subscribed and sworn before me this 17th day of March the year of 2016
Phyllis A. Copley Notary Public
My Commission Expires September 16, 2018
Form WW-9

RECEIVED
Office of Oil and Gas
MAR 21 2016
WV Department of
Environmental Protection

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS
CONSTRUCTION AND RECLAMATION PLAN AND SITE REGISTRATION APPLICATION FORM
GENERAL PERMIT FOR OIL AND GAS PIT WASTE DISCHARGE

Operator Name Chesapeake Appalachia, L.L.C. OP Code 494477557
Watershed Mill Hollow of Kellys Creek Quadrangle Cedar Grove, WV 7.5'
Elevation 882' County Kanawha District Cabin Creek

Description of anticipated Pit Waste: Plugging Returns/Cement

Will a synthetic liner be used in the pit? Yes TU 3-2216 minimum 20 mil liner must be used

Proposed Disposal Method For Treated Pit Wastes:

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

Proposed Work For Which Pit Will Be Used:

- Drilling
- Workover
- Swabbing
- Plugging
- Other (Explain _____)

I certify that I understand and agree to the terms and conditions of the GENERAL WATER POLLUTION PERMIT issued on December 31, 1999, 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 *David Gocke*

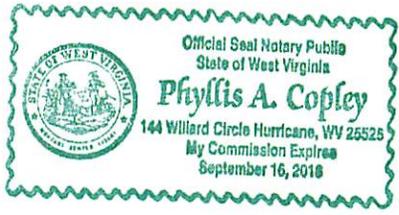
Company Official (Typed Name) David Gocke

Company Official Title Manager - Operations, Appalachia South

Subscribed and sworn before me this 17th day of March, 2016.

Phyllis A. Copley Notary Public.

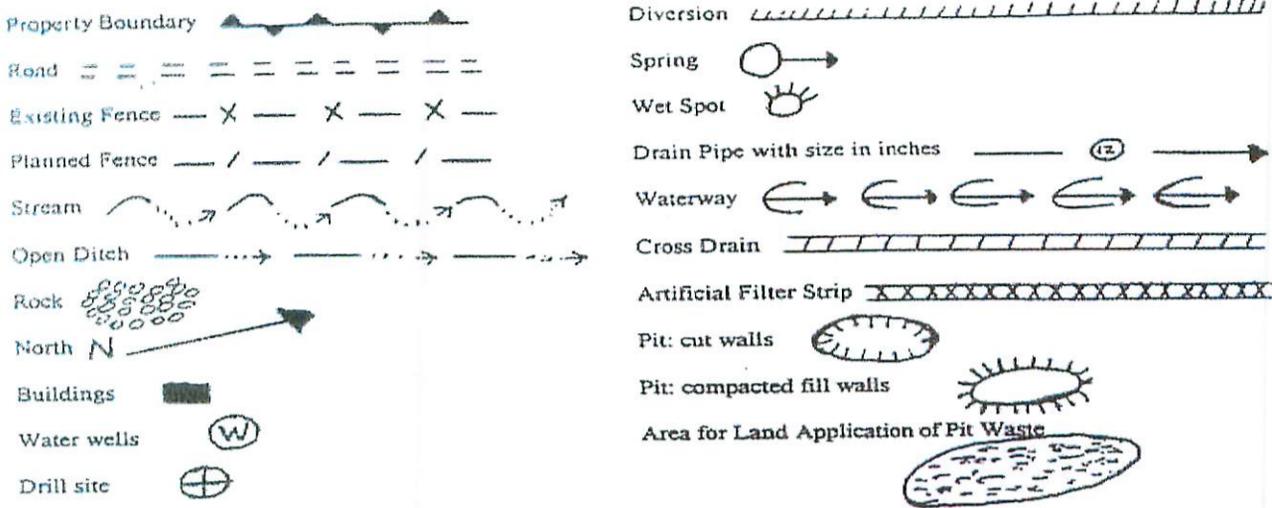
My Commission Expires September 16, 2018



Attachment #1

API #: 47-039-03059
 Operator's Well No. 802458 P&A

LEGEND



Proposed Revegetation Treatment: Acres Disturbed 1.0 Prevegetation pH 6.1
 Lime 3 Tons/acre or to correct to pH 6.5
 Fertilizer (10-20-20 or equivalent) 1/3 Tons/acre (500 lbs minimum)
 Mulch Weed Free Straw 2 Tons/acre

Seed Mixtures

October 1st to April 30th

May 1st to September 30th

Creeping Red Fescue	68.60%	Creeping Red Fescue	68.60%
Wheat	14.76%	Wheat	17.18%
Annual Ryegrass	9.80%	Annual Ryegrass	9.80%
Ladino Clover	3.21%	Ladino Clover	4.97%

Total seeding will be 50 lbs/acre

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

Photocopied section of involved 7.5' topographic sheet.

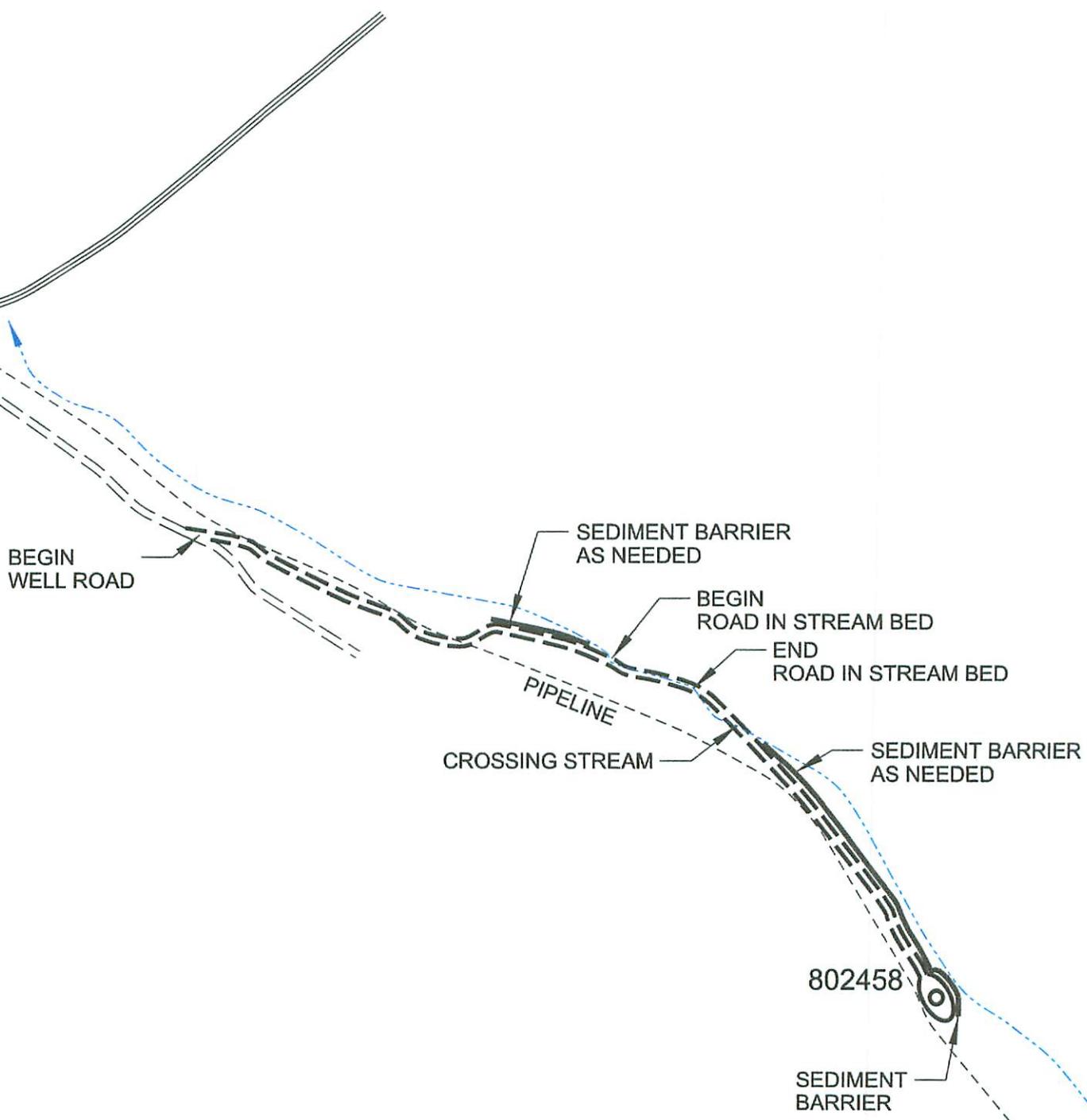
Plan Approved by: *[Signature]*
 Title: *Field Inspection All Elements*
 Date: *3-22-14*

Field Reviewed? () Yes () No

CHESAPEAKE APPALACHIA, L.L.C.

RECLAMATION DIAGRAM WELL LOCATION 802458

API 47-039-03059



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Office of Oil and Gas

MAR 24 2016

GENERAL NOTES

This drawing is a schematic representation of the well site and access road. Proposed structures such as well site, drilling pit, roadways, culverts, sediment barriers, etc. are shown in approximate configurations.

All culvert pipes will be a minimum of 15 inches in diameter. All culvert pipes installed will be accompanied by an entrance sump with dimensions no less than 3 feet (width) x 3 feet (length) x 4 feet (deep). Culverts will be installed at an angle to ensure proper flow. The out fall of culverts will be protected from erosion and sedimentation using large rocks or other sediment controls deemed necessary in the prevention of erosion and sedimentation. Storm water from the ditches to the culverts will be directed to stable natural vegetative areas. Where culverts are not practical, operator will have other sediment control in place to minimize erosion sedimentation.

Cross drains, broad based dips, water bars, and diversion ditches, will be employed during the construction phase. These erosion and sediment control structures will be used to control erosion and sedimentation during the construction phase, where applicable, and in areas that will allow. These structures will be considered permanent and used as such.

Permanent seeding: See Attachment #1.

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MAR 24 2016

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WV Department of
Environmental Protection

39 03059P

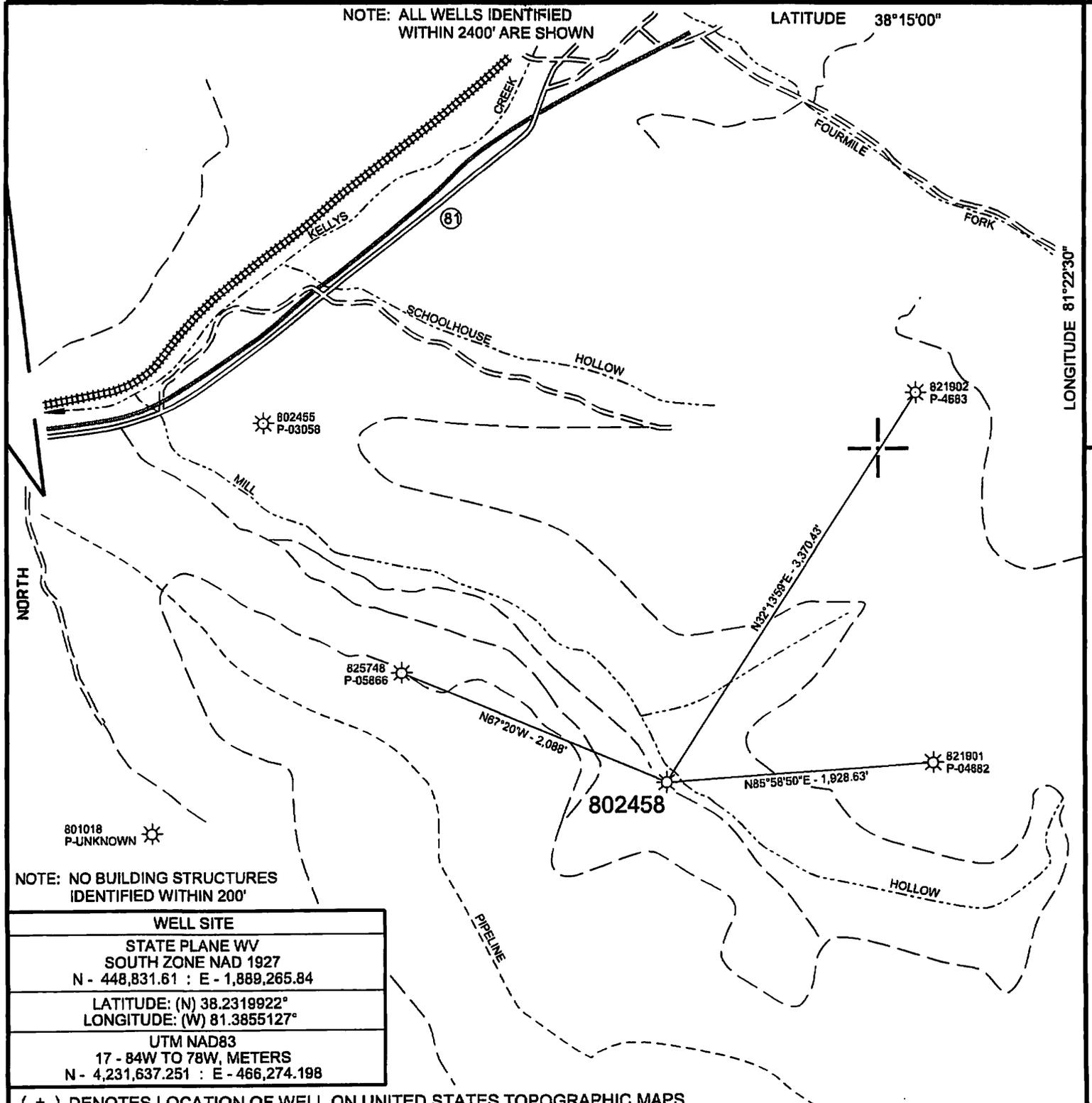
CHESAPEAKE APPALACHIA, L.L.C.

TOPOGRAPHICAL MAP OF ACCESS AND WELL LOCATION 802458

API 47-039-03059



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MAR 21 2016
WV Department of
Environmental Protection



WELL SITE	
STATE PLANE WV SOUTH ZONE NAD 1927 N - 448,831.61 : E - 1,889,265.84	
LATITUDE: (N) 38.2319922° LONGITUDE: (W) 81.3855127°	
UTM NAD83 17 - 84W TO 78W, METERS N - 4,231,637.251 : E - 466,274.198	

FILE NO.	802458 P&A.DGN
DRAWING NO.	802458 P&A
SCALE	1" = 1000'
MINIMUM DEGREE OF ACCURACY	1:200
PROVEN SOURCE OF ELEVATION	MAPPING GRADE GPS

I THE UNDERSIGNED, HEREBY CERTIFY THAT THIS PLAT IS CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF AND SHOWS ALL THE INFORMATION REQUIRED BY LAW AND THE REGULATIONS ISSUED AND PRESCRIBED BY THE DEPARTMENT OF ENVIRONMENTAL PROTECTION.

(SIGNED) *Paul E. Miller*

R.P.E. _____ L.L.S. 647



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

DATE MARCH 4, 20 16

OPERATOR'S WELL NO. 802458

API WELL NO. _____

STATE 47 COUNTY 039 PERMIT 03059 P

WELL TYPE: OIL ___ GAS X LIQUID INJECTION ___ WASTE DISPOSAL ___
(IF "GAS,") PRODUCTION X STORAGE ___ DEEP ___ SHALLOW X

LOCATION: ELEVATION 882' WATER SHED MILL HOLLOW OF KELLYS CREEK

DISTRICT CABIN CREEK COUNTY KANAWHA

QUADRANGLE CEDAR GROVE, WV 7.5'

SURFACE OWNER DAVID WARD HEIRS ACREAGE 14814.41

OIL & GAS ROYALTY OWNER DAVID WARD HEIRS LEASE ACREAGE 8,000

LEASE NO. 1-025660-000

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 X CLEAN OUT AND REPLUG ___

TARGET FORMATION _____ ESTIMATED DEPTH _____

WELL OPERATOR CHESAPEAKE APPALACHIA, L.L.C. DESIGNATED AGENT JESSICA GREATHOUSE

ADDRESS P.O. BOX 18496, OKLAHOMA CITY, OK 73154-0496 ADDRESS CHESAPEAKE APPALACHIA, L.L.C. PO BOX 6070, CHARLESTON, WV 25382

MAR 21 2016

WV Department of Environmental Protection

FORM WW-6

COUNTY NAME

PERMIT