



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 04, 2016

WELL WORK PLUGGING PERMIT

Plugging

This permit, API Well Number: 47-3903124, 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: 0284
Farm Name: ELK RIVER COAL CO.
API Well Number: 47-3903124
Permit Type: Plugging
Date Issued: 04/04/2016

Promoting a healthy environment.

04/08/2016

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: 2/18/2016
2) Operator's Well No. 800284 P&A
3) API Well No. 47-039-03124

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 947' Watershed Right Fork of Mill Creek
District Elk County Kanawha Quadrangle Quick, 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 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

SEE Changes to procedure

well is at head of Mill Creek

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 2-24-16

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04/08/2016

PLUGGING PROCEDURE

- 1) Prepare road and location, MIRU Service Rig
- 2) RIH with tools to check TD at approximately 1850'
- 3) Attempt to pull 3" and packer
 - A) If successful
 - a) Run W.S. to approximately 1850', spot gel
 - b) Spot 150' cement plug 1850'-1700'
 - c) Proceed to step 4
 - B) If unsuccessful
 - a) Run W.S. to 1850', spot gel
 - b) Spot 150' cement plug 1850'-1700', pull W.S.
 - c) Cut 3 1/2" at free-point (approximately 1615') and pull
 - d) Proceed to step 4
- 4) Pull or run W.S. to 1615', spot gel
- 5) Spot 150' cement plug 1615'-1465', pull W.S.
- 6) Run in hole with tools to check TOC. If top of plug is below 1525', then add cement to top of plug.
- 7) Cut 6 5/8" at free-point (approximately 800') and pull.
 NOTE: If 800' of 6 5/8" cannot be pulled, rip or shoot holes in 6 5/8" so plug can be spotted. Then pull pipe from where free and spot 100' plug at cut.
- 8) Run W.S. to 800', spot gel
- 9) Spot 150' cement plug 800'-650', pull W.S.
- 10) Run in hole with tools to check TOC. If top of cement is below 700', then add cement to top of plug.
- 11) Run W.S. to 350', spot gel
- 12) Spot 100' cement plug 350'-250', pull 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

Will adjust this plug will know what level

Elevation 947 plug

350 to Surface & more work

[Signature]
2-24-16

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UNITED FUEL GAS CO.

Well 800 51.6.17
API 47-039-0312 4P

SERIAL WELL NO. 284

LEASE NO. 157 859

RECORD of Well No. 2 on the
Elk River Coal Co. Farm of 1576 Acres
in Elk District
Kanawha County
Clendennin Field, State of W. Va.

Rig Commenced 5/23 1013
Rig Completed 5/30 1013
Drilling Commenced June 10, 1913. 10
Drilling Completed Aug. 1st, 1913. 10
Drilling to Cost \$1,30 per foot
Contractor is: Fred Liedeker,
Address: Charleston, W. Va.

Drillers' Names Jack Flood,
Jack McCarthy

CASING AND CONDUCTOR		
SIZE	USED IN DRILLING	LEFT IN WELL
Conductor	16'	16'
13"		
10"	248'	
8 1/2"	760'	
8"		
7 1/2"		
6 3/4"		
6 1/2"		
5 5/8"	1559'	1559'
5 1/8"		
4 1/2"		
3"		1863'

GAS WELL			
OPEN FLOW			
in 6 1/2 inch casing			
At Centre		At 1-7 Diam.	
Pounds	Ounces	Pounds	Ounces
90/10 Water			
CLOSED IN			
in 3" Tubing Casing			
1 Min.	190	Pounds	
2 Min.	220	Pounds	
3 Min.	260	Pounds	
4 Min.	270	Pounds	
5 Min.	280	Pounds	
24 Hr. Pressure	475	Pounds	

Shot 10
Size of Torpedo lbs.
Size of Tubing 3 inch
Size of Packer 3 x 6 1/2 x 16
Kind of Packer Larkin
Set 216 ft. from Bottom
" 131 " "
" 65 " "

OIL WELL
Size of Rods
Kind of Rods
Well abandoned and plugged 10

1st DAY'S PRODUCTION

Gas calculated to be 4,771,000 cubic feet
Oil flowed barrels, pumped barrels
1st perforation
2nd.

DRILLERS' RECORD

FORMATION	TOP	BOTTOM	THICKNESS	REMARKS	DATE
Clay		40	40	Pencil Cave	6
Lime	40	50	10	Big Lime	75
Coal	50	55	5	Red Rock	19
Sand	55	100	45	Big Injur Sand	51
Lime	100	125	25	Slate	13
Sand	125	150	25	Total Depth	1857'
Slate	150	160	10		
Sand	160	211	51	Water	
Black Slate	211	220	9	Gas	1805' 1808'
Sand	220	248	28		
Slate	248	275	27	Steel Line Measurement at	1546'
Sand	275	315	40	" " " "	1622'
Slate	315	355	40	" " " "	1857'
Sand	355	450	95		
Lime	450	490	40		
Slate	490	535	45		
Sand	535	636	101		
Slate	636	656	20		
Sand	656	705	49		
Lime	705	774	69		
Slate	774	790	16		
Salt Sand	790	825	35		
Water		835			
Red Rock	1440	1465	25		
Maxon Sand	1465	1499	34		
Little Lime	1499	1540	41		

*Depth checked on bit
M.H.L.
SALT*

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39 03124P

WW4-A
Revised
2/01

1) Date: 2/18/2016
2) Operator's Well No. 800284 P&A
3) API Well No. 47-039-03124

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 North Hills Development Company LLC
Address 900 Virginia Street East
Charleston, WV 25301

(b) Name _____
Address _____

(c) Name _____
Address _____

5) Coal Operator
(a) Name None
Address _____

Coal Owner(s) with Declaration
(b) Name Chesapeake Appalachia, LLC
Address David Dani, Staff Landman
6100 N. Western Avenue
Oklahoma City, OK 73118

Name _____
Address _____

6) Inspector Terry Urban
Address P.O. Box 1207
Clendenin, WV 25045

Telephone 304-549-5915

Coal Lessee with Declaration
(c) Name None
Address _____

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 18th day of February the year of 2016
Phyllis A. Copley Notary Public
My Commission Expires September 16, 2018
Form WW-9

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Office of Oil and Gas

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WV Department of
Environment 04/08/2016

3903124

Rev. 02/01

API Number 47-039-03124
Operator's Well No. 800284 P&A

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 Right Fork of Mill Creek Quadrangle Quick, WV 7.5'
Elevation 947' County Kanawha District Elk

Description of anticipated Pit Waste: Plugging Returns/Cement

Will a synthetic liner be used in the pit? Yes 20 41L

- 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*

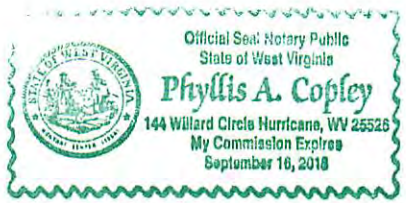
Company Official (Typed Name) David Gocke

Company Official Title Manager - Operations, Appalachia South

Subscribed and sworn before me this 18th day of February, 2016.

Phyllis A. Copley Notary Public.

My Commission Expires September 16, 2018



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Attachment #1

API #: 47-039-03124
Operator's Well No. 800284 P&A

LEGEND

Property Boundary	Diversion
Road	Spring
Existing Fence	Wet Spot
Planned Fence	Drain Pipe with size in inches
Stream	Waterway
Open Ditch	Cross Drain
Rock	Artificial Filter Strip
North	Pit: cut walls
Buildings	Pit: compacted fill walls
Water wells	Area for Land Application of Pit Waste
Drill site	

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:
 Title:
 Date:
 Field Reviewed? Yes No

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3903124A

CHESAPEAKE APPALACHIA, L.L.C.
TOPOGRAPHICAL MAP OF ACCESS AND
WELL LOCATION 800284
API 47-039-00124

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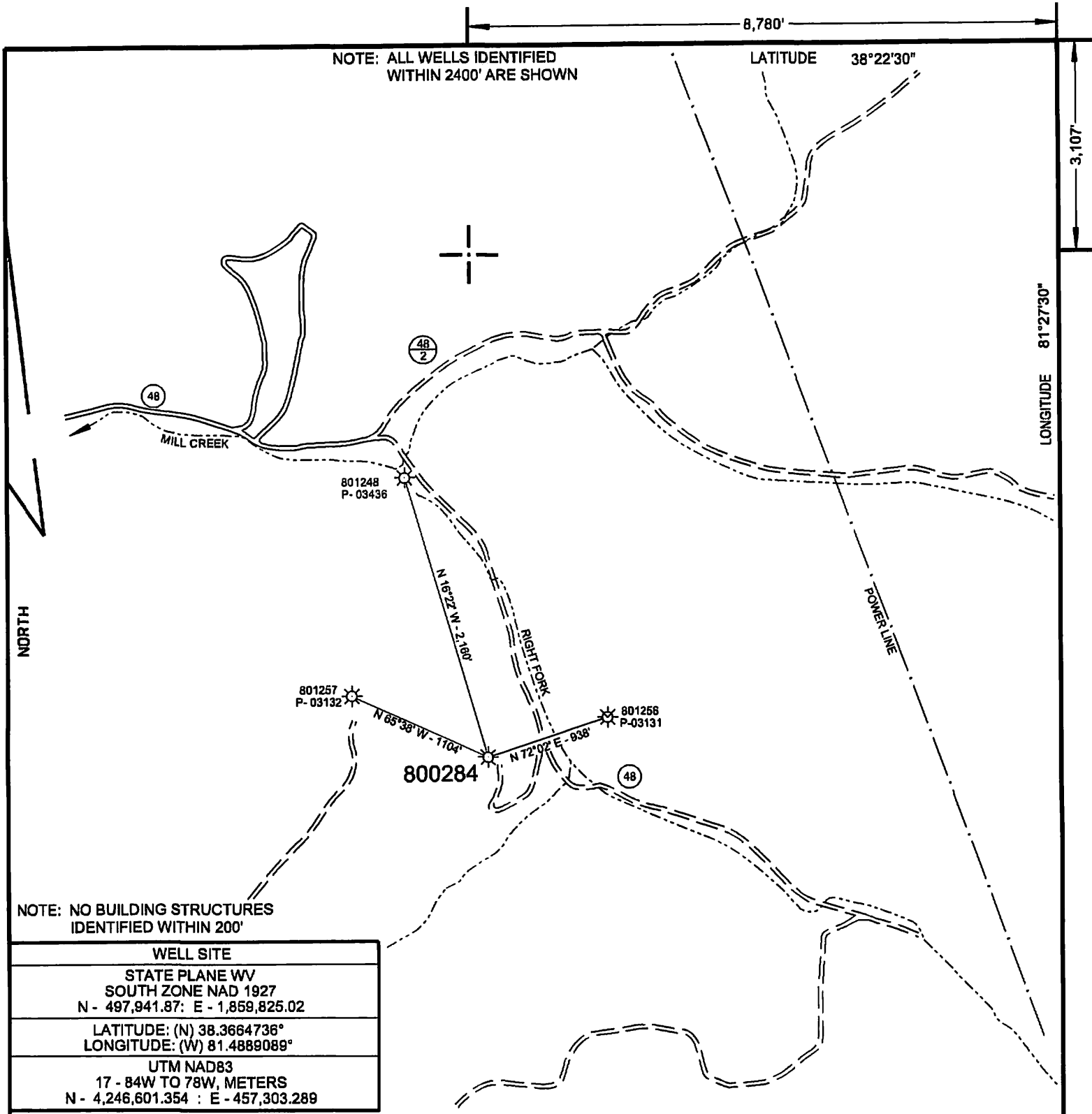
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NOTE: NO BUILDING STRUCTURES IDENTIFIED WITHIN 200'

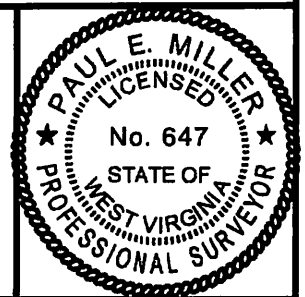
WELL SITE	
STATE PLANE WV SOUTH ZONE NAD 1927 N - 497,941.87; E - 1,859,825.02	
LATITUDE: (N) 38.3664736° LONGITUDE: (W) 81.4889089°	
UTM NAD83 17 - 84W TO 78W, METERS N - 4,246,601.354 : E - 457,303.289	

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

FILE NO. P&A 800284.DGN
 DRAWING NO. P&A 800284
 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. 847



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



DATE FEBRUARY 19, 20 16
 OPERATOR'S WELL NO. 800284
 API WELL NO. _____

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

LOCATION: ELEVATION 947' WATER SHED _____ RIGHT FORK OF MILL CREEK

DISTRICT _____ ELK _____ COUNTY _____ KANAWHA

QUADRANGLE _____ QUICK, WV 7.5'

SURFACE OWNER NORTH HILLS DEVELOPEMENT CO. L.L.C. ACREAGE 1415.2

OIL & GAS ROYALTY OWNER CHESAPEAKE APPALACHIA, L.L.C. LEASE ACREAGE _____

LEASE NO. 1-027466

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 25362

FORM WW-6

COUNTY NAME

PERMIT

04/08/2016