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

February 21, 2014

WELL WORK PLUGGING PERMIT

Plugging

This permit, API Well Number: 47-5900306, 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 penalities 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: 806895
Farm Name: TCO FEE TR 4
API Well Number: 47-5900306
Permit Type: Plugging
Date Issued: 02/21/2014

Promoting a healthy environment.

5900306 P

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.

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

1) Date: 2/5/2014
2) Operator's Well No. 806895 P&A
3) API Well No. 47-059-00306

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 999' Watershed Old House Branch of East Fork of Twelvepole Creek
District Harvey County Mingo Quadrangle Trace, WV 7.5

6) Well Operator Chesapeake Appalachia, L.L.C.
Address P.O. Box 18496
Oklahoma City, OK 73154-0496

7) Designated Agent Eric B. Gillespie
Address P.O. Box 6070
Charleston, WV 25362

8) Oil and Gas Inspector to be notified
Name Jeremy James
Address P.O. Box 147
Ona, WV 25545

9) Plugging Contractor
Name Chesapeake Appalachia, L.L.C.
Address P.O. Box 18496
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 _____ Date 2-19-14

47-059-00306 P

806895 P&A PROCEDURE

1) Prepare road and location, MIRU Service Rig

2) Run in hole with tools to check TD. (Hole is most likely filled/bridged to around 1900')

3) Run W.S. to just above bridge or 2250' if possible, load hole with gel.

4) Spot 150' cement plug 2250'-2100', or set 150' plug on top of fill (approximately 1900'-1750'), pull W.S. to 1700'

5) Spot 100' cement plug 1700'-1600', pull W.S. to 1500'

6) Spot 100' cement plug 1500'-1400', pull W.S.

7) Run in hole with tools to check top of plug. (If top of plug is not above 1425', then re-spot plug)

8) Cut 7" at free-point (approximately 1170') and pull

9) Run W.S. to 1170', load hole with gel

10) Spot 100' cement plug 1170'-1070', pull W.S. to 970'

11) Spot 100' cement plug 970'-870', pull W.S. to 830'

12) Spot ~~100'~~ 130 cement plug 830'-~~930'~~ 700, pull W.S. to 630' 830 - 700

13) Spot 100' cement plug 630'-530', pull W.S. to 150' re set if below 530

14) Spot ~~150'~~ 175 cement plug ~~150'~~ 175 - – surface 175 - Surface

15) Pull W.S. and top off with cement

16) Erect monument and reclaim as prescribed by law

09-10

Well 806895
API 47-059-00306
B1 Page 1 of 2

STATE OF WEST VIRGINIA
DEPARTMENT OF MINES
OIL AND GAS DIVISION

WELL RECORD

Permit No. MIN-306

Oil or Gas Well Gas (KIND)

Company UNITED FUEL GAS COMPANY
Address P.O. Box 1273, Charleston 25, W. Va.
Farm U. F. G. Fee Tr. #4 Acres 10,935.11
Location (waters) Old House Branch
Well No. 6895 Elev. 982.01
District Harvey County Mingo
The surface of tract is owned in fee by
Address
Mineral rights are owned by United Fuel Gas Company
Address Charleston, W. Va.
Drilling commenced 5-2-52
Drilling completed 7-28-52
Date Shot 7-29-52 From 2327 To 3326
With 6,650# Hercules Powder
Open Flow 14 /10ths Water in 1 Inch
/10ths Merc. in Inch
Volume 39,000 Cu. Ft.
Rock Pressure 305 lbs. 48 hrs.
Oil bbls., 1st 24 hrs.
Fresh water 42 feet 970 feet
Salt water feet feet

Casing and Tubing	Used in Drilling	Left in Well	Packers
Size			
16			Kind of Packer
13			
10		37'	Size of
8¼	951'	Pulled	
7"		1443'	Depth set
5 3/16			
3			Perf. top
2			Perf. bottom
Liners Used			Perf. top
			Perf. bottom

CASING CEMENTED SIZE No. Ft. Date

COAL WAS ENCOUNTERED AT 110 FEET 60 INCHES
FEET INCHES FEET INCHES
FEET INCHES FEET INCHES

Formation	Color	Hard or Soft	Top	Bottom	Oil, Gas or Water	Depth Found	Remarks
Clay			0	4	Water 42' 6 BPH		
Quick Sand			4	40			
Broken Sand			40	80	Show gas 605'		
Slate			80	110			
Coal			110	115	Show oil 820'		
Slate			115	135			
Sand			135	140	Water Sand 970-982'		
Slate			140	232			
Sand			232	252	Water 970' hole full		
Slate			252	275			
Sand			275	295	Show gas 1149'		
Slate			295	350			
Sand			350	405	Water Sand 1149'		
Slate			405	540			
Sand			540	620	Gas 1170' 7/10 W 1" 28 M		
Slate			620	735			
sand			735	985	Gas 1566' 6/10 W 1" 26 M		
Slate			985	987			
Sand			987	1020	Gas 2818' 2/10 W 1" 15 M		
Slate			1020	1031			
Lime Shells			1031	1041	Test before shot 2/10 W 1" 15 M		
Slate			1041	1048	Shot 7-29-52 with 6,650# Hercules		
Lime			1048	1063	Powder from 2327-3326'		
Black Slate			1063	1065	Test 18 hours after shot 14/10 W 1"		
Slate & Shells			1065	1085	39 M		
Lime			1085	1100			
Salt Sand			1100	1316			
Slate			1316	1358	FINAL OPEN FLOW - 39 M - Br. Shale		
Red Rock			1358	1366	48 Hr. R.P. 305#		
Slate			1366	1400			
Little Lime			1400	1432			
Slate			1432	1438			
Lime Shells			1438	1442	Shut in 7-30-52 in 7" casing.		
Slate			1442	1454			
Big Lime			1454	1666			
Injun Sand			1666	1698			
Black Slate			1698	1725			
Slate & Shells			1725	2211			
Coffee Shale			2211	2237			
~~Berea Grit~~			~~2237~~	~~2314~~			
Slate			2314	2332			
Brown Shale			2332	2365			

(Over)

OCT 1952
WEST VIRGINIA
DEPARTMENT OF MINES

179

Well 800070

API 47-059-00306
Page 2 of 2

Formation	Color	Hard or Soft	Top	Bottom	Oil, Gas or Water	Depth Found	Remarks
Slate			2365	2632			
Gray Shale			2632	2685			
Brown Shale			2685	2832			
Slate			2832	3006			
Brown Shale			3006	3204			
Gray Shale			3204	3220			
Brown Shale			3220	3313			
White Slate			3313	3326			
Total depth			3326'				

Date October 3, 1952

APPROVED UNITED FUEL GAS COMPANY, Owner

By S. R. Ferrell
(Title)
Manager Civil Engineering Department

806895 P

WW4-A
Revised
2/01

1) Date: 2/5/2014
2) Operator's Well No. 806895 P&A
3) API Well No. 47-059-00306

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 Heartwood Forestland
Address Attention: Craig Kaderavak
19045 Stone Mountain Road
Abingdon, VA 24210

(b) Name
Address

(c) Name
Address

5) Coal Operator
(a) Name Argus Energy WV, LLC
Address 9104 Twelve Pole Creek Road
Dunlow, WV 25511

Coal Owner(s) with Declaration
(b) Name Southern Region Industrial Realty, Inc.
Address Three Commercial Place
Norfolk, VA 23510

Name
Address

Coal Lessee with Declaration
(c) Name Laurel Creek Company
Address P.O. Box 16429
Bristol, VA 24209

6) Inspector Jeremy James
Address P.O. Box 147
Ona, WV 25545

Telephone 304-951-2596

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.

Official Seal Notary Public
State of West Virginia
Phyllis A. Copley
144 Willard Circle Hurricane, WV 25526
My Commission Expires
September 16, 2018

Well Operator: Chesapeake Appalachia, L.L.C.
By:
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 5th day of February the year of 2014
Phyllis A. Copley Notary Public

My Commission Expires September 16, 2018
Form WW-9

Received
FEB 12 2014
Office of Oil and Gas
WV Dept. of Environmental Protection

Well 806695 P
API 47-059-00306

7012 1640 0000 0167 9826

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Restricted Delivery Fee (Endorsement Required)	0
Total Po	7.40

HAMLIN WV 25523 FEB 11 2014 USPS
Postmark Here

Sent To 806895 P&A
Street, Ap or PO Box Southern Region Industrial Realty, Inc.
Three Commercial Place
City, State Norfolk, VA ~~24210~~ 23510

PS Form 3800, August 2006 See Reverse for Instructions

7012 1640 0000 0167 9802

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BRISTOL VA 24209

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Certified Fee	$3.30	01
Return Receipt Fee (Endorsement Required)	$2.70	Postmark Here
Restricted Delivery Fee (Endorsement Required)	$0.00	
Total P	$7.40	02/11/2014

Sent To 806895 P&A
Street, A or PO Bo Laurel Creek Company
P.O. Box 16429
City, Stat Bristol, VA 24209

PS Form 3800, August 2006 See Reverse for Instructions

7012 1640 0000 0167 9819

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Return Receipt Fee (Endorsement Required)	2.70
Restricted Delivery Fee (Endorsement Required)	0
Total Po	7.40

HAMLIN WV 25523 FEB 11 2014 USPS
Postmark Here

Sent To 806895 P&A
Street, Apt or PO Box Argus Energy-WV, LLC
9104 Twelve Pole Creek Road
City, State, Dunlow, WV 25511

PS Form 3800, August 2006 See Reverse for Instructions

7012 1640 0000 0167 9833

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Tc	7.40

HAMLIN WV 25523 FEB 11 2014 USPS
Postmark Here

Sen 806895 P&A
Stre or F Heartwood Forestland
C/O Craig Kaderavak
City 19045 Stone Mountain Road
Abingdon, VA 24210

PS Form 3800, August 2006 See Reverse for Instructions

Received
FEB 12 2014
Office of Oil and Gas
WV Dept. of Environmental Protection

5900306P

Rev. 02/01

API Number 47-059-00306
Operator's Well No. 806895 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 **Old House Branch of East Fork of Twelvepole Creek** Quadrangle **Trace, WV 7.5'** 643

Elevation **999'** County **Mingo** 59 District **Harvey** 2

Description of anticipated Pit Waste: **Plugging Returns/Cement**

Will a synthetic liner be used in the pit? **Yes**

Proposed Disposal Method For Treated Pit Wastes:

- X Land Application
- ___ Underground Injection (UIC Permit Number___)
- ___ Reuse (at API Number___)
- ___ Off Site Disposal (Supply form WW-9 for disposal location)
- ___ Other (Explain___)

Proposed Work For Which Pit Will Be Used:

- ___ Drilling
- ___ Workover
- ___ Swabbing
- X 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 [signature]

Company Official (Typed Name) **David Gocke**

Company Official Title **Manager - Operations, Appalachia South**

Subscribed and sworn before me this 5th day of February, 2014.

Phyllis A. Copley Notary Public.

My Commission Expires September 16, 2018

Official Seal Notary Public
State of West Virginia
Phyllis A. Copley
144 Willard Circle Hurricane, WV 25526
My Commission Expires
September 16, 2018

Received
FEB 12 2014
Office of Oil and Gas
WV Dept. of Environmental Protection

5900306P.

Attachment #1

API #: 47-059-00306
Operator's Well No. 806895 P&A

LEGEND

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

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 TON lbs/acre (500 lbs minimum)

Mulch Hay 2 Tons/acre

Seed Mixtures

Area I		Area II	
Seed Type	**lbs/acre**	**Seed Type**	**lbs/acre**
KY-31	40	ORCHARD GRASS	15
ALSIKE CLOVER	5	ALSIKE CLOVER	5
ANNUAL RYE	15		

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: OOG inspector

Date: 2-19-14

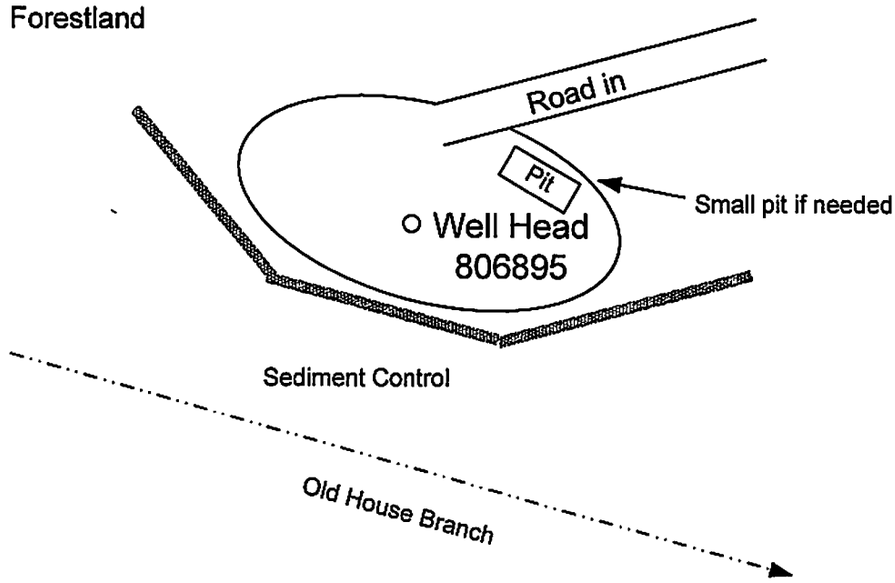
Field Reviewed? (✓) Yes ( ) No

5900306 P

CHESAPEAKE APPALACHIA, L.L.C.

Diagram of Well 806895 P&A
API 47-059-00306
Field Office - Branchland
County - Mingo

Surface Owner:
Heartwood
Forestland



Received
FEB 12 2014
Office of Oil and Gas
WV Dept. of Environmental Protection

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 pre-planning 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 and 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 areas that will allow. These structures will be considered permanent and used as such.

Permanent seeding: See Attachment #1

Received
FEB 12 2014

Site Plan

Prepared by: Kris Aldridge
Date: 2/3/2014

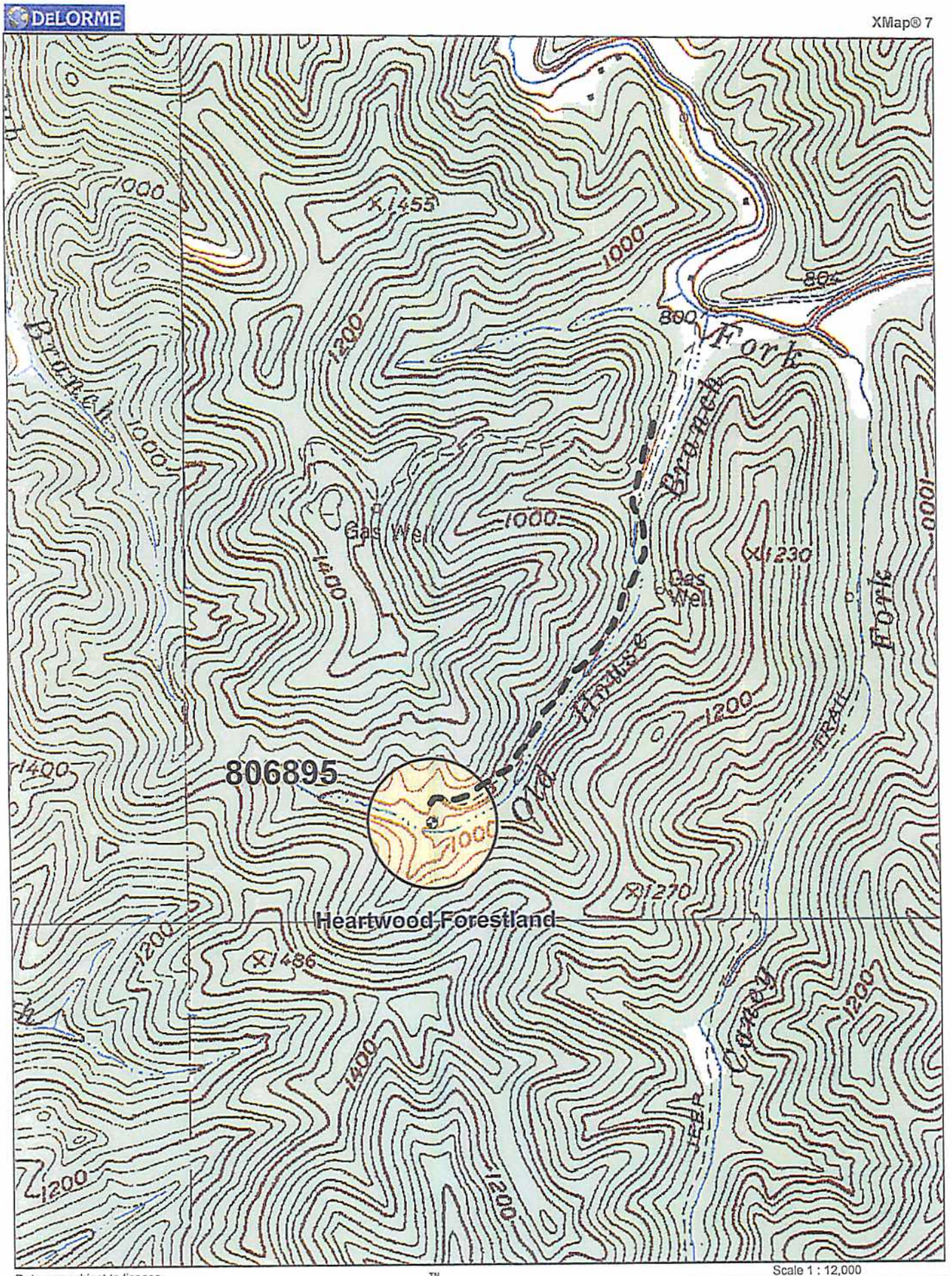
Office of Oil and Gas
WV Dept. of Environmental Protection

No Scale

5900306.P

CHESAPEAKE APPALACHIA, L.L.C.

Topographical Map of Access and
Well Location 806895
API 47-059-00306
Field Office - Branchland
County - Mingo



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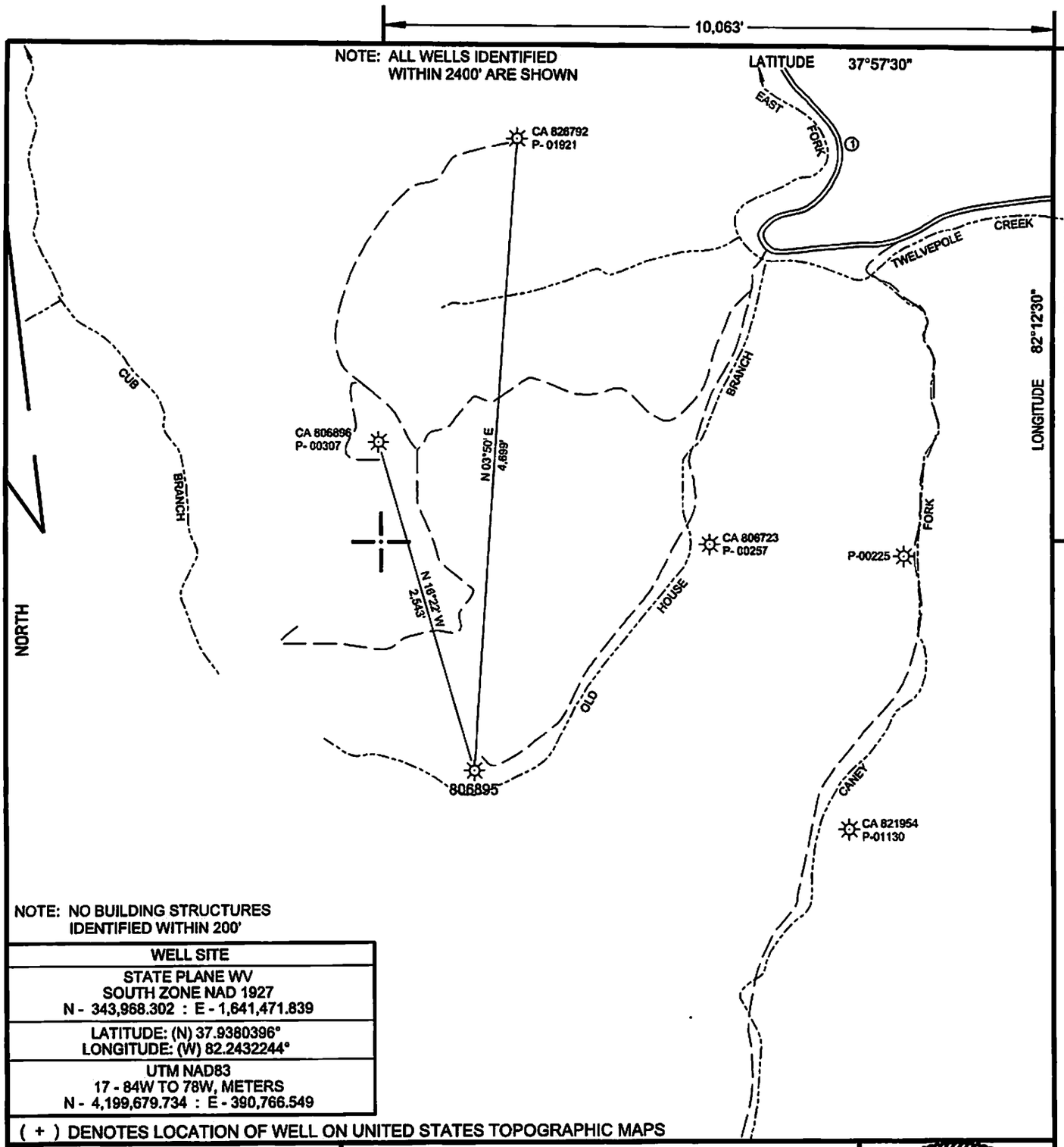
www.delorme.com

TN
MN (7.1°W)

Scale 1 : 12,000
1" = 1,000.0 ft
Data Zoom 14-1

Chesapeake Energy Corporation - Eastern Division
P.O. Box 579 • 8165 Court Avenue • Hamlin, WV 25523
304.824.5141 • fax 304.824.2247



NOTE: NO BUILDING STRUCTURES IDENTIFIED WITHIN 200'

WELL SITE
STATE PLANE WV SOUTH ZONE NAD 1927 N - 343,968.302 : E - 1,641,471.839
LATITUDE: (N) 37.9380396° LONGITUDE: (W) 82.2432244°
UTM NAD83 17 - 84W TO 78W, METERS N - 4,199,679.734 : E - 390,766.549

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

FILE NO. CA806895P&A.DGN
DRAWING NO. CA806895P&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

PAUL E. MILLER LICENSED No. 647 STATE OF WEST VIRGINIA PROFESSIONAL SURVEYOR
PLACE SEAL HERE

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

DATE JANUARY 15, 2014
OPERATOR'S WELL NO. 806895
API WELL NO.
47 (STATE) 059 (COUNTY) 00306 P (PERMIT)

WELL TYPE: OIL ___ GAS X LIQUID INJECTION ___ WASTE DISPOSAL ___
(IF "GAS,") PRODUCTION X STORAGE ___ DEEP ___ SHALLOW X
LOCATION: ELEVATION 999' WATER SHED OLD HOUSE BRANCH OF EAST FORK OF TWELVEPOLE CREEK
DISTRICT HARVEY COUNTY MINGO
QUADRANGLE TRACE, WV 7.5'
SURFACE OWNER HEARTWOOD FORESTLAND FUND III ACREAGE 3,509.57
OIL & GAS ROYALTY OWNER CHESAPEAKE APPALACHIA, L.L.C. LEASE ACREAGE --
LEASE NO. FEE LAND
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 ERIC B. GILLESPIE
ADDRESS P.O. BOX 18496, OKLAHOMA CITY, OK 73154-0496 ADDRESS CHESAPEAKE APPLACHIA, L.L.C. PO BOX 6070, CHARLESTON, WV 25362

COUNTY NAME
PERMIT

FORM WW-6