



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

May 07, 2015

WELL WORK PLUGGING PERMIT

Plugging

This permit, API Well Number: 47-7500019, 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: M-1
Farm Name: U.S.A.
API Well Number: 47-7500019
Permit Type: Plugging
Date Issued: 05/07/2015

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.

Inspector's signed copy

7500019P

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

1) Date: 3/25/2014
2) Operator's Well No. 823946
3) API Well No. 47-075-00019

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 3,225' Watershed Buffalo Fork of Laurel Fork
 District Greenbank County Pocahontas Quadrangle Thornwood, 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 Bryan Harris Name Chesapeake Appalachia, L.L.C.
 Address P.O. Box 157 Address P.O. Box 18496
Volga, WV 26238 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 Bryan Harris Date 4-17-15

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WV Department of
Environmental Protection
05/08/2015

823946 P&A PROCEDURE

- 1) Prepare road and location, MIRU service rig
- 2) Check pressure on tubing and casing
- 3) Blow down well to tank
- 4) Load hole with enough fluid to kill highest pressure plus 25% safety factor
- 5) Install BOP if needed, TOH with 2 3/8" tubing
- 6) Remove cage and inspect tubing (If tubing is in good condition, use as work string – if not, replace)
- 7) TIH with W.S. to approximately 4800', pump 25 bbls gel, pull W.S. to 4505'
- 8) Spot 250' cement plug 4505'-4255', pull W.S.
- 9) RIH with tools to check top of plug (If TOC is below 4300', then add to top of plug)
- 10) Cut 5 1/2" at free-point (approximately 3250') and pull (If unable to pull at least 3200' of 5 1/2", then rip or shoot holes approximately at 3250' and 3200')
- 11) Run W.S. to top of cut (approximately 3250'), spot gel (50 bbls if 5 1/2" is still in hole, 125 bbls if 5 1/2" has been pulled)
- 12) Spot 150' cement plug (approximately 3250'-3100'), pull W.S.
- 13) If 5 1/2" was not cut and pulled in step 10, then cut 5 1/2" approximately at 1310' and pull (If at least 1280' of 5 1/2" cannot be pulled then shoot or rip holes approximately at that depth and pull 5 1/2" from where free)
- 14) Run W.S. to approximately 1310', pump 65 bbls 6% gel (if gel returns to surface shut down)
- 15) Spot 200' cement plug approximately from 1310'-1110', pull W.S.
- 16) Cut 8 5/8" at free-point (approximately 200') and pull (If unable to pull at least 200' of 8 5/8" then shoot or rip holes approximately at 200', 150' and 100')
- 17) Run W.S. to approximately 200'
- 18) Spot 200' cement plug 200'-surface
- 19) Pull W.S. and top off with cement
- 20) Set monument and reclaim as prescribed by law

Attempt to spot cement plug across bottom Perfs.

Bryan Harris
4-17-15
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WV Department of
Environmental Protection

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STATE OF WEST VIRGINIA
DEPARTMENT OF MINES
OIL AND GAS DIVISION 19

Well 823946
API 47-075-00019P
Page 1 of 2

Quadrangle Spruce Knob SW

WELL RECORD

Permit No. Poca 19

Oil or Gas Well Gas
(KIND)

Company Columbian Carbon Company, Oper.
Address P. O. Box 873, Charleston 23, W. Va.
Farm United States of America Acres 2467.20
Location (waters) Buffalo Fork
Well No. M-1, GW-1355 Elev. 3199.90'
District Green Bank County Pocahontas
The surface of tract is owned in fee by Bureau of Land Management
Interior Bldg. Address Washington, D. C.
Mineral rights are owned by Bureau of Land Management, et al
(for further add. contact C. C. C.)
Address

Drilling commenced 2-9-62
Drilling completed 3-15-62
Date Shot not shot From _____ To _____
With _____

Open Flow /10ths Water in _____ Inch
/10ths Merc. in _____ Inch
Volume 1,800,000 Cu. Ft.
Rock Pressure _____ lbs. _____ hrs.
Oil _____ bbls., 1st 24 hrs.
WELL ACIDIZED not acidized

WELL FRACTURED see reverse side

RESULT AFTER TREATMENT 2,579,000 cu. ft. (Oriskany)

ROCK PRESSURE AFTER TREATMENT 3 days 1725#

Fresh Water 170' Feet Salt Water 1280' Feet

Casing and Tubing	Used in Drilling	Left in Well	Packers
Size			
16 3/8" 48#	30' 4"	30' 4"	Kind of Packer <u>none</u>
10 8 1/4" 24#	1221' 1"	1221' 1"	Size of _____
6 5/8" 17#	5061' 3"	5061' 3"	Depth set _____
3 3/8" 4.7#	4842' 9"	4842' 9"	Perf. top _____
Liners Used <u>w/ 2" cage</u>			Perf. bottom _____
			Perf. top _____
			Perf. bottom _____

CASING CEMENTED _____ SIZE _____ No. Ft. _____ Date _____
see reverse side
COAL WAS ENCOUNTERED AT none FEET _____ INCHES _____
FEET _____ INCHES _____ FEET _____ INCHES _____
FEET _____ INCHES _____ FEET _____ INCHES _____

Formation	Color	Hard or Soft	Top	Bottom	Oil, Gas or Water	Depth	Remarks
Sand			0	60			
Lime and Shale			60	132			
Sand			132	200	F. water	170'	
Lime			200	220			
Shale			220	250			
Sand			250	275			
Shale			275	435			
Lime			435	475			
Sand			475	500			
Shale			500	545			
Sand			545	580			
Lime			580	670			
Shale			670	725			
Lime			725	775			
Sand			775	920			
Lime			920	1000			
Shale			1000	1035			
Lime			1035	1100			
Shale			1100	1200			
Lime			1200	1240			
Shale			1240	1320	S. water	1280'	
Sand			1320	1400			
Lime			1400	1425			
Shale			1425	1450			
Lime			1450	1475			
Sand			1475	1500			

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(over)

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Formation	Color	Hard or Soft	Top 29	Bottom	Oil, Gas or Water	Depth Found	Remarks
Sandy Lime			1500	1550			
Shale			1550	1570			
Lime			1570	1600			
Shale			1600	1650			
Lime			1650	1775			
Shale			1775	1845			
Lime			1845	1995			
Shale			1995	2260			
Sandy Lime			2260	2400			
Shale			2400	2500			
Lime			2500	2530			
Shale			2530	2860			
Lime			2860	2890			
Shale			2890	3540			
Lime and Shale			3540	3665			
Shale			3665	3925			
Shale w/ Lime streaks			3925	4499			
Shale			4499	4520			
Lime and Chert			4520	4610			
Black Shale			4610	4684			
Black Chert			4684	4740			
Shale			4740	4784			
Oriskany Sand			4784	4790	Gas Pay	4784-90'	1,800 M
Sand and Lime streaks			4790	4830			
Sand, Shale and Lime			4830	4878			
Sand and Lime			4878	4939			
Sand, Shale and Lime			4939	5049			
Shale and Lime			5049	5208			
Lime and Shale			5208	5246			
Lime, Shale and Chert			5246	5284			
Lime and Shale			5284	5537			
Shale and Lime			5537	5592			
Lime and Shale			5592	5710			
Lime			5710	5730			
Total depth				5730'			
Samples show:							
Oriskany			4534	4654			
			4784	4984			
<u>CASING RECORD</u>							
2-10-62	Ran 13-3/8" casing at 30'DLM-cemented with 30 sacks						
2-14-62	Ran 8-5/8" casing at 1200'DLM-cemented with 50 sacks						
3-18-62	Ran 5-1/2" casing at 5028' w/ Whirler Guide Shoe at 5028' and Differential fill up collar on top of 1st joint. Centralizers at 4900' 4850' 4750' 4600' 4500' 4400' and 4350'. Ran 2 sacks Baraflos and 200 sacks cement.						
See perforating and fracturing record on attached sheet.							

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Date April 16, 19 62

APPROVED Columbian Carbon Co., Oper., Owner

By W. S. Moore, Mgr. of Prod.
 (Title)

05/08/2015

7500019P

WW4-A
Revised
2/01

1) Date: 3/25/2015
2) Operator's Well No. 823946 P&A
3) API Well No. 47-075-00019

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 U.S. Department of Agriculture
Address U.S. Forest Service/
Mon. National Forest
200 Sycamore Street
Elkins, WV 26241-3962

(b) Name U.S. Department of Interior
Address Bureau of Land Mgmt - Eastern States
626 E. Wisconsin Ave., Suite 200
Milwaukee, WI 53202-4617

(c) Name _____
Address _____

6) Inspector Bryan Harris
Address P.O. Box 157
Volga, WV 26238

Telephone 304-553-6087

5) Coal Operator
(a) Name _____

Coal Owner(s) with Declaration
(b) Name _____
Address _____

Name _____
Address _____

Name _____
Address _____

Coal Lessee with Declaration
(c) Name _____
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: Completion Superintendent
Address: P.O. Box 18496
Oklahoma City, OK 73154-0496
Telephone: 405-935-4073

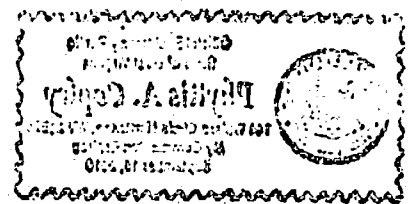
Subscribed and sworn before me this 25th day of March the year of 2015

Phyllis A. Copley Notary Public

My Commission Expires September 16, 2018

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Office of Oil & Gas
MAR 27 2015

05/08/2015



Will 823946
 API 47-075-00019

CK# 7500019 P
 525625 P
 100.00

7014 2120 0003 6636 5996

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Certified Fee	\$ 3.30	
Return Receipt Fee (Endorsement Required)	\$ 2.70	
Restricted Delivery Fee (Endorsement Required)	\$ 0.00	
Total Postage & Fees	\$ 7.40	

0523
03
03/25/2015

Sent To: **823946 P&A**
 U.S. Department of Interior
 Bureau of Land Management – Eastern States
 626 E. Wisconsin Avenue, Suite 200
 Milwaukee, WI 53202-4617

PS Form 3800, October 2014

7014 2120 0003 6636 6009

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ELKINS WV 26241

Postage	\$ 1.40	
Certified Fee	\$ 3.30	
Return Receipt Fee (Endorsement Required)	\$ 2.70	
Restricted Delivery Fee (Endorsement Required)	\$ 0.00	
Total Postage & Fees	\$ 7.40	

0523
03
03/25/2015

Sent To: **823946 P&A**
 U.S. Department of Agriculture
 U.S. Forest Service/Mon. National Forest
 200 Sycamore Street
 Elkins, WV 26241-3962

PS Form 3800, October 2014

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 Office of Oil & Gas
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7500019A

Form WW-9
Rev. 02/01

API Number 47-075-00019
Operator's Well No. 823946 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 Buffalo Fork of Laurel Fork Quadrangle Thornwood, WV 7.5'
Elevation 3,225' County Pocahontas District Greenbank

Description of anticipated Pit Waste: Plugging Returns/Cement

Will a synthetic liner be used in the pit? Yes 20 MIL.

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 *Rob Schindler*

Company Official (Typed Name) Rob Schindler

Company Official Title Completion Superintendent

Subscribed and sworn before me this 25th day of March, 2015.

Phyllis A. Copley Notary Public

My Commission Expires September 16, 2018



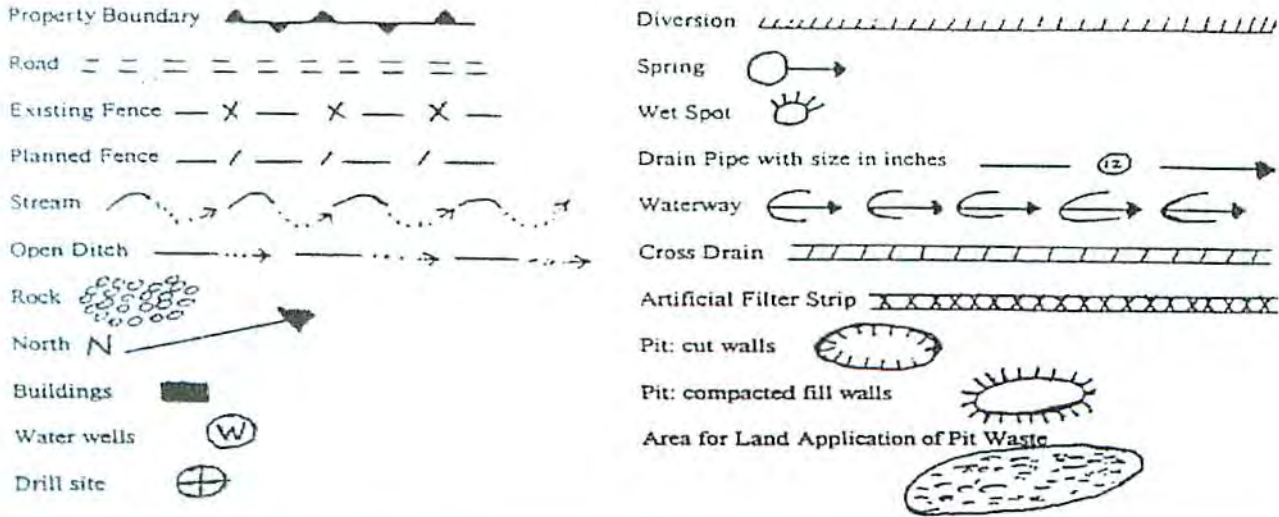
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Attachment #1

API #: 47-075-00019
 Operator's Well No. 823946 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 (10-20-10 or equivalent) 500 lbs/acre
 Mulch Weed free straw

Area I		Seed Mixtures		Area II	
Seed Type	lbs/acre	Seed Type	lbs/acre	Seed Type	lbs/acre
Winter Wheat (6/15-11/15)	20	Spring Wheat (2/15-6/15)	20		
Annual Rye (6/15-11/15)	20	Oats (2/15-6/15)	20		
Alfaifa (pre inoculated)	10	Durana Clover (pre inoculated)	2		
Mammoth Red Clover (pre inoculated)	5	Chicory	3		

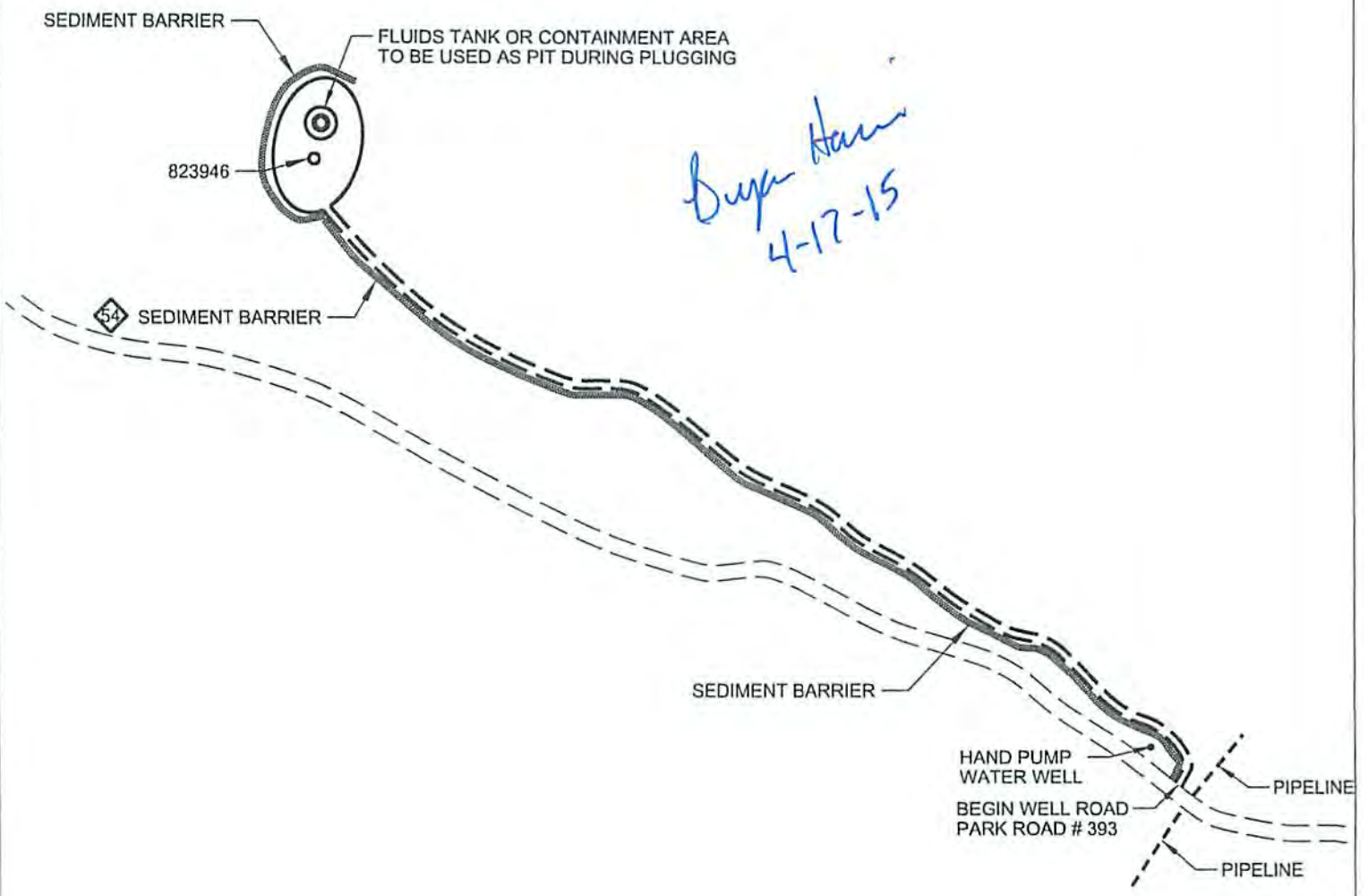
Attach:
 Drawing(s) of road, location, pit and proposed area for land application.
 Photocopied section of involved 7.5' topographic sheet.

Plan Approved by: Bryan Hanning
 Title: Oil & Gas Inspector
 Date: 4-17-15

Field Reviewed? (X) Yes () No

75 00019P

CHESAPEAKE APPALACHIA, L.L.C.
RECLAMATION DIAGRAM
WELL LOCATION 823946
API 47-075-00019



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 sedimentation.

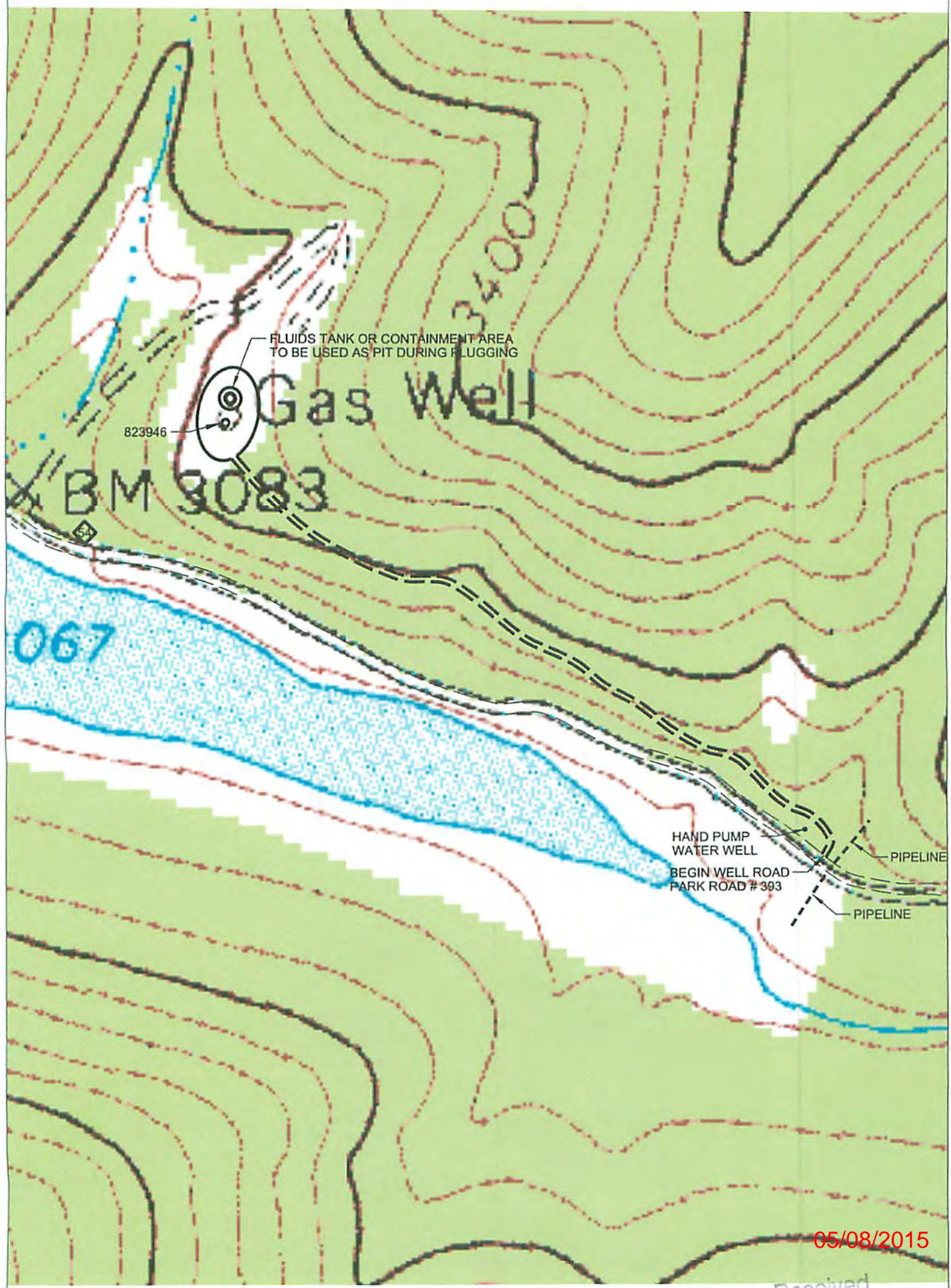
Cross drains, broad based dips, water bars, and diversion ditches, will be employed during the construction phase. These erosion and sediment control structures will be used to control erosion and sedimentation during the construction phase, where applicable, and in areas that will allow. These structures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

Permanent seeding: See Attachment #1.

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April 22 2015
WV Department of Environmental Protection
05/08/2015

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CHESAPEAKE APPALACHIA, L.L.C.
TOPOGRAPHICAL MAP OF ACCESS AND
WELL LOCATION 823946
API 47-075-00019

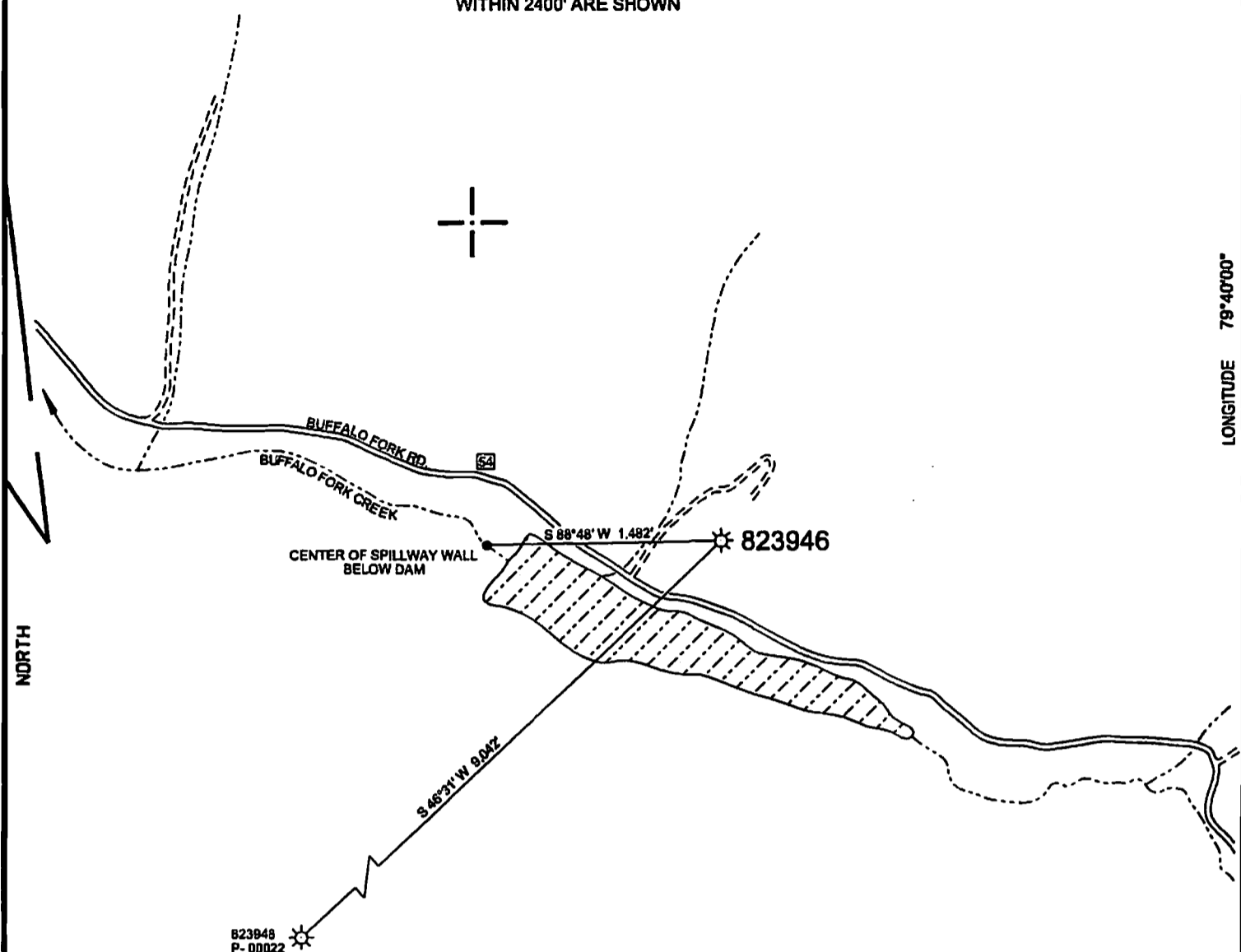


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MAR 27 2015

NOTE: ALL WELLS IDENTIFIED WITHIN 2400' ARE SHOWN

LATITUDE 38°32'30"



NORTH

LONGITUDE 79°40'00"

NOTE: NO BUILDING STRUCTURES IDENTIFIED WITHIN 200'

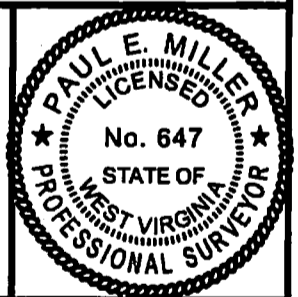
WELL SITE
STATE PLANE WV SOUTH ZONE NAD 1927 N - 560,785.89 : E - 2,371,639.38
LATITUDE: (N) 38.5328092° LONGITUDE: (W) 79.7007787°
UTM NAD83 17 - 84W TO 78W, METERS N - 4,265,758.248 : E - 613,259.309

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

FILE NO.	823946.DGN
DRAWING NO.	823946
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 JANUARY 15, 2015
OPERATOR'S WELL NO. 823946
API WELL NO.

47 075 00019 P
STATE COUNTY PERMIT

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

LOCATION: ELEVATION 3.225' WATER SHED BUFFALO FORK OF LAUREL FORK
DISTRICT GREENBANK COUNTY POCAHONTAS
QUADRANGLE THORNWOOD, WV 7.5'

SURFACE OWNER USA ACREAGE -
OIL & GAS ROYALTY OWNER LEASE ACREAGE

LEASE NO. _____ 05/08/2015

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 18498, OKLAHOMA CITY, OK 73154-0498 ADDRESS CHESAPEAKE APPALACHIA, L.L.C. PO BOX 8070, CHARLESTON, WV 25382

FORM WW-6

COUNTY NAME

PERMIT

9,768'

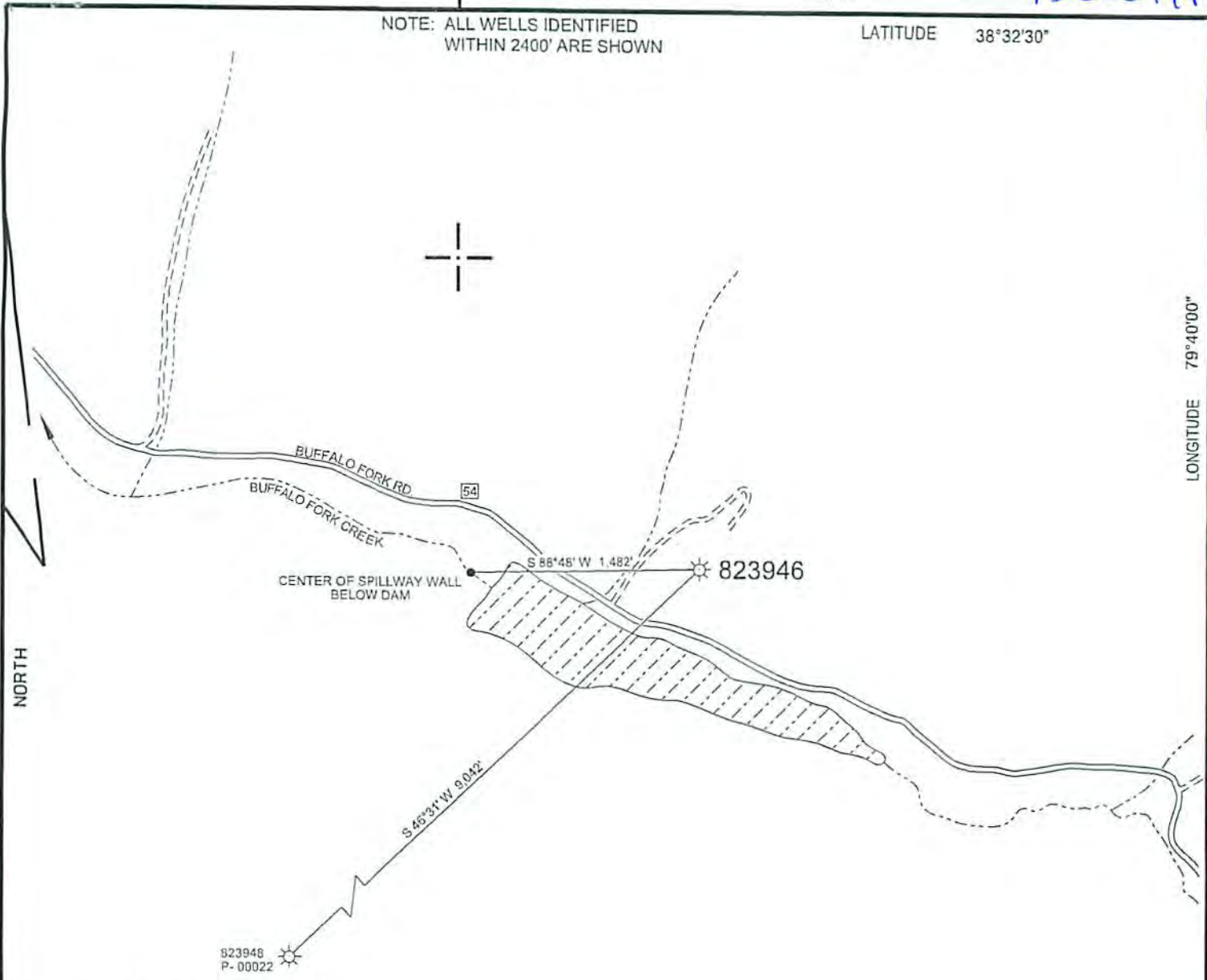
75000192

NOTE: ALL WELLS IDENTIFIED WITHIN 2400' ARE SHOWN

LATITUDE 38°32'30"

3,185'

LONGITUDE 79°40'00"



NOTE: NO BUILDING STRUCTURES IDENTIFIED WITHIN 200'

WELL SITE	
STATE PLANE WV SOUTH ZONE NAD 1927 N - 560,785.89 : E - 2,371,639.38	
LATITUDE: (N) 38.5329092° LONGITUDE: (W) 79.7007787°	
UTM NAD83 17 - 84W TO 78W, METERS N - 4,265,758.248 : E - 613,259.309	

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

FILE NO.	823946.DGN
DRAWING NO.	823946
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 JANUARY 15, 2015
OPERATOR'S WELL NO. 823946
API WELL NO.

47 075 00019 P
STATE COUNTY PERMIT

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

LOCATION: ELEVATION 3.225' WATER SHED BUFFALO FORK OF LAUREL FORK

DISTRICT GREENBANK COUNTY RECEIVED

QUADRANGLE THORNWOOD, WV 7.5'

SURFACE OWNER USA ACREAGE -

OIL & GAS ROYALTY OWNER LEASE ACREAGE

LEASE NO. DATE 05/08/2015

PROPOSED WORK: DRILL ___ CONVERT ___ DRILL DEEPER ___ REDRILL ___ FRACTURE OR STIMULATE ___ PLUG OFF OLD FORMATION ___ PERFORATE NEW FORMATION ___ OTHER PHYSICAL CHANGE IN WELL (SPECIFY) WV Department of Environmental Protection

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