

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 20, 2015

WELL WORK PLUGGING PERMIT

Plugging

This permit, API Well Number: 47-4300558, 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: 2253

Farm Name: COOK, I. N., ETAL

API Well Number: 47-4300558

Permit Type: Plugging
Date Issued: 04/20/2015

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.

43005581

FOR	M WW-4 (B)						1) Date:	2/27/2015
Obse							2) Operator's Well No.	802253 P&A
File (Copy . 2/01)	•					3) API Well No.	47-043-00558
(Nev	. 2101)			STATE OF	WEST VIRGI	NIA		
			DEPARTM		IRONMENTA		CTION	
					FOIL AND G			
	•		APPLICATIO	N FOR A PER	RMIT TO PLU	G AND A	BANDON.	
4)	Well Type:	Oil_	Gas		Liquid injection		_ Waste disposal	
	(Is Gas,	Production X	or Undergroun	d storage	_) De	еер	_ Shallo	wX
5)	Location:	Elevation	n 784'	Watershed		Tri	butary of Guyan River	
٠,	2000	District	Sheridan	County	Lincoln			and, WV 7.5'
		_						
6)	Well Opera	tor Chesape P.O. Box	eake Appalachi	a, L.L.C.	7) Designate Address	ed Agent	Jessica Greathouse P.O. Box 6070	
	Address		na City, OK 731	54-0496	Address		Charleston, WV 2530	<u>62</u>
		Onlarion	ila Oley, Ole 10					<u></u>
8)		s Inspector to b	e notified		9) Plugging			
		Raiph Triplett			Name	P.O. Box	ake Appalachia, L.L.C.	<u>·</u>
		5539 McClellar Branchland, W			Address		na City, OK 73154-0496	3
	<u>.</u>	Dianomanu, W	20000			<u> </u>		· .
10)	Work Orde	er: The work or	der for the manr	ner of plugging	this well is as fo	ilows:		
	•							
				See Attached	Sheet			
							REC	CEIVED
								Oil and Gas
							Office Of	On and Gas
			•				MAR	20,2015
							//// Da	nortmont of
								partment of
							Environme	ntal Protection
			•					
		_			. 04 % == !== *:			
N	otification mu	ust be given to t	the district oil an	d gas inspector	r 24 nours befor	re permitte	d work can commence.	
١,٨	lork Order a	pproved by Insp	nector · /	1.///			Date	3-18-15
٧١	ork Order a	hhiosea nà iliah	- 					

United Fuel Gas Company

43005588 Well 802253 API 47-043-00558

÷ i			1.00 .00 to 0.00 to 0.			API	4/0/0
SERIAL WELL NO. 2253		LEASE NO	o			MAP SQ	UARE 32-49
RECORD OF WELL NO. 2253	on the		CASING AN	D TUBING		ТЕ	EST BEFORE SHOT
Cook & Stoffler farm of	Acres	SIZE	WEIGHT	USED IN DRILLING	LEPT IN WELL	2 /10 0	f Water in 2 in
in Brenchland	District						f Merc. inin
Sheridan- Lincoln	County						60 M Cu.
State of: West Virginia							EST AFTER SHOT
Field: Branchland							Water in 2 in
Rig Commenced 8/16/44	194						f Merc, inin
Rig Completed 8/23/44	194					Volume	60 M Cu.
Drilling Commenced 9-21-44	194			†			Hours After SI
Defining Completed 10-18-44	194			-			sure 110 72 hrs.
Drilling to cost	· · · · · · · · · · · · · · · · · · ·	-	1	i	i		विष ०० ०६
Contractor is: United Fuel G	per foot	211	4.6	1313-7	1313-7	Date Shot	6100# Ge1.
Branch Lend W						1	rpedo
Address:				10-26-4	lo.		bbls. 1st 24 h
W-11- 6 W			Date	70 as 0 as	Tubing or	Oil Pumpe	d bbls. 1st 24 h
Driller's Name Walter G. W:			1n.	75.6	SCHOOL		
Ralph Duffic	37 <i>6</i> '	77000	Size of Pa	cker 3"26-	7/6"	Well aband	oned and
		13001	Kind of Pa	Rook	MATT	Plugged	
			1st. Perf. S	etf	rom		
Elevation:			2nd Perf. S	etf	rom		
		DRILI	LER'S RECORD				
FORMATION	тор	воттом	THICKNESS			REMARKS	
Begin drilling	1538						
Slate & Shells	1538	1980	445				
rom Shale	1980	5000	80				
Berea	2000	2020	50	Small	inorease	of gas a	\$ 2004 .
Slate & Shells	2020	2300	280	no cau	go taken		
Brown Shale	2300	2360	60				
Slate & Shells	2360	2550	190				
Brown Shale	2550	2575	29				
Slate	2575	5870	235				·
Brown Shale	2810	2840	30				·n
Slate	2810	2900	60			RECEIVE e of Oil a	nd Gas
Brown Shale	2900	3000	100		Offic	e of Oil a	110
Slate & Shells	3000	3030	30			3	L013
Brown Shele	3030	3190	160	Can at	3030° ea	MAK 3280	sosal desore
White Slate	3190	3215	25	shot 2/	10 Wasor	20 TEDEO	the stool
Total depth		3215		Zop of	opos sug	PRATEM	04/24/2015
				test af	Ser Bhos	NO.	
					2007 ()		04/24/2015

4300558P

UNITED FUEL GAS COMPANY

Well 802253 API 47-043-00558P

SERIAL WELL NO. 2253

LEASE NO._

MAP SQUARE 32-49

RECORD OF WELL No.	2253 on the	CA	SING AND TU	BING	. TEST BEFORE SHOT
Cook Stoffler Farm of	38.00	SIZE	USED IN DRILLING	LEFT IN WELL	12 of Water in 2 incl
in Sheridan	District	16			10ths of Merc. ininch
Lincoln	County	13		1 g	VolumeCu. ft
Branchland Field, St	ate of W.Va.	10		1216"	TEST AFTER SHOT
		8 1-4		,:	of Water ininch
Rig Commenced	192	6 5-8		1249'7	10ths 50 of Merc in 2 inch
Rig Completed	192	5 3-16			VolumeCu. ft
Drilling Commenced August 1	3, 1915 ₁₉₂	4 7-8			Rock Pressure 292#
Drilling Completed Sept. 9,	1915 192	4			Date Shot Sept. 10, 191
Drilling to cost per	foot	3			Size of Torpedo 90 qts.
Contractor is: H. G. Wels	h	2		1533'6	Oil Flowedbbls. 1st 24 hrs
Address:			SHUT IN		Oil Pumpedbbls, 1st 24 hrs
		Date	Sept. 1	1, 1915	
Drillers' Names		2ii	i	Tubing Min	Well abandoned and
		Size of Pa	acker 6-5/	8"x2"	Plugged19
		Kind of Pa	acker. Spe	c. Gas	
		1st Perf.	Seton	www.bot	om
		2nd Perf.	Set 531	www.bot	com

DRILLER'S RECORD

FORMATION	тор	воттом	THICKNESS	REMARKS
Coal Salt Sand Little Lime Pencil Cave Big Lime Big Injun Sand Slate	496 610 1210 1230 1234 1442 1489	500 1010 1230 1234 1415 1489 1538	4 400 20 4 180 47 49	Gas Pay 1448'-1484'. Packer set 151' from bottom of hole on 2" tubing.
TOTAL DEPTH		1538° 1720 3258		RECEIVED Office of Oil and Gas MAR 3 2015 WV Department of Environmental Protection Environmental Protection
				04/24/2013

API: 47-043-00558

802253 P&A PROCEDURE

NOTE: Hole is caved in at approximately 1850'.

- 1) Prepare road and location, MIRU service rig
- 2) Run in hole to check top of fill approximately at 1850'
- 3) If hole is dry, pump 150' cement plug from 1850'-1700', chase with 1 bbl gel, WOC. If fluid level is above 1450', proceed to step 5.
- 4) Run in hole with tools to check top of plug. If TOC is below 1750', then reset plug.
- 5) Attempt to pull 2" and packer
 - A) If successful
 - a) Run W.S. to top of first plug, spot gel, pull W.S. to 1450'
 - b) Spot 100' cement plug 1450'-1350', pull W.S. to 1275'
 - c) Spot 100' from 1275'-1175', pull W.S.
 - d) Proceed to step 6
 - B) If unsuccessful
 - a) Cut 2" at free-point (approximately 1280') and pull
 - b) Run W.S. as deep as possible, approximately 1280'-1300'
 - c) Spot 150' cement plug approximately 1300'-1150', pull W.S.
 - d) Proceed to step 6
- 6) Run in hole with tools to check top of plug. If TOC is below 1200', then reset plug.
- 7) Cut 6 5/8" at free-point (approximately 800') and pull
- 8) Run W.S. to 800', spot gel
- 9) Spot 100' cement plug 800'-700', pull W.S. to 590'
- 10) Spot 130' cement plug 590'-460', pull W.S. to 130'
- 11) Spot 130' cement plug 130'-surface
- 12) Pull W.S. and top off with cement
- 13) Erect monument and reclaim as prescribed by law

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MAR 3 2015

WV Department of Environmental Protection WW4-A Revised 2/01 1) Date: 2/27/2015 2) Operator's Well No. 802253 P&A 3) API Well No. 47-043-00558

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 Own (a) Name Address	ner(s) to be served: Kenneth Thacker P.O. Box 494		5) Coal Operato (a) Name Address	None
	//-> No	Branchland, WV 25506		Coal Owner(s) with Declaration Mary F. Mutschelknaus
	(b) Name Address			Address	P.O. Box 351 Salem, WV 26426
	(c) Name Address			Name Address	
3)	Inspector Address	Ralph Triplett 5539 McClellan Highway Branchland, WV 25506		Coal Lesse (c) Name Address	e with Declaration None
	Telephone	304-389-0350			
	(2) The plat (s) The reason you instructions on Take notice th Notice and Ap Oil and Gas, V attached Appli mailed by regi	the well its and the plugging worksurveyor's map) showing the well arreceived these documents is a the reverses side. However, you at under Chapter 22-6 of the Wellication and accompanying doc West Virginia Department of Envication and depicted on the attackstered or certified mail or delivers) on or before the day of mailing	Il location on Form WW-6. that you have rights regarding ou are not required to take all est Virginia Code, the unders cuments for a permit to plug vironmental Protection, with reched Form WW-6. Coples oured by hand to the person(s) g or delivery to the Chief.	ny action at all. signed well operator and abandon a well espect to the well at fithe Notice, the Appramed above (or by	proposes to file or has filed the with the Chief of the Office of the location described on the olication, and the plat have been publication in certain
		Official Seal Notary Public State of West Virginia Phyllis A. Copley Williard Circle Hurrican, WY 25526 My Commission Expires September 16, 2018	Well Operator: By: Its: Address: Telephone:	P.O. Box 18496 Oklahoma Cily, Ol 405-935-4073	ons, Appalachia South < 73154-0496
Sub	scribed and swe	orn before me this 27	Myllo a.C.	the year of _	Notary Publifice Of One
	Commission Ex m WW-9	pires	September 16, 2018	V	MAR 3 2013 WV Department of Environmental Protection

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Well 802253 API 47-043-00558

1.4	U.S. Postal S CERTIFIED Domestic Mail Or	MAIL® REC	EIPT
П	For delivery information BRANCHLAND W	ation, visit our website	at www.usps.com®.
9E99	Postage	s \$1.40	0523
m	Certified Fee	\$3.30	01
:000	Return Receipt Fee (Endorsement Required)	\$2.70	Postmark Here
	Restricted Delivery Fee (Endorsement Required)	\$9.00	
2750	Total Postage & Fees	\$ \$7.40	03/02/2015
7074	Sent To Key	meth Thay	cker
70	Street & Apt. No., or PO Box No.	BOX 494	
		PLICE CONTRACTOR	See Reverse for Instructions
4 2120 0003 6636 6207	Domestic Mail O	D MAIL® REC Inly ation, visit our website	0523 01 Postmark Here
9E99 E000	CERTIFIE Domestic Mail O For delivery inform SALEN W. 261 Postage Certified Fee Return Receipt Fee (Endorsement Required) Restricted Delivery Fee (Endorsement Required) Total Postage & Fees	D MAIL® REC	ostmark Here
2120 0003 6636	CERTIFIE Domestic Mail O For delivery inform SALEN MV 26 Postage Certified Fee (Endorsement Required) Restricted Delivery Fee (Endorsement Required) Total Postage & Fees Sent To Street & Apt. No.,	D MAIL® RECORDY ation, visit our website 224 C A L s \$1.40 \$3.30 \$2.70 \$0.00 \$ \$7.40 F. Mutso P.O. Box 5	0523 01 Postmark Here

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MAR 3 2015

WV Department of Environmental Protection



04/24/2015

Rev. 02/01

API Number 47-043-00558
Operator's Weil No. 802253 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 NameCh	esapeake Appalachia, L.L.	c.	OP Code	1477557	
Watershed	Tributary of Guyan River		QuadrangleE	3ranchland,	WV 7.5'
Elevation784'	County	Lincoln	Dist	trict	Sheridan
Description of anticipated Pi	t Waste: Plugging Return	rns/Cement			
Will a synthetic liner be used	in the pit? Yes				
Proposed Disposal Method X		form WW-9 for	disposal location)))	
Proposed Work For Which F	Pit Will Be Used:DrillingWorkoverSwabbingPluggingOther (Explain			_)	
issued on December 31, 1999 understand that the provisions permit and/or other applicable I certify under penalty of I this application form and all a for obtaining the information.	and agree to the terms and condition, by the Office of Oil and Gas of the of the permit are enforceable by I law or regulation can lead to enforce with the three personally examined tachments thereto and that, based believe that the information is true ting false information, including the	he West Virginia De law. Violations of a preement action. d and am familiar wi d on my inquiry of th e, accurate, and cor	partment of Environa my term or condition th the information su ose individuals imm molete. I am aware	mental Protectio of the general ubmitted on rediately respons	
Company Official (Typed Na	me) Dave Gocke				
Company Official Title	Manager - Ope	rations, Appala	chia South		
Subscribed and sworn before	e me this 27 day of	February (,	 Notan	/ Public.
My Commission Expires	September 16, 2018	_		Office C	CEIVED of Oil and Gas AR 2015

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Attachment #1

47-043-00558 Operator's Well No. 802253 P&A

		
Property Boundary	Diversion Contract Co	ı
Rond = = = = = = = = = = =	Spring —	
Existing Fence — X — X — X —	Wet Spot	
Planned Fence///	Drain Pipe with size in inches @	ı
Stream	Waterway C+ C+C+C+	
Open Ditch	Cross Drain 777777777777777777777777777777777777	
Rock 68668	Artificial Filter Strip	•
North N	Pit: cut walls	
Buildings (IIII)	Pit: compacted fill walls	•
Water wells	Area for Land Application of Pit Waste	
Drill site		
Proposed Revegetation Treatment: Acres Disturbed	d 1.0 Prevegetation pH 6.1	
Time o	Tanakan anka anwaki aki	
Lime3	Tons/acre or to correct to pH 6.5	
Fertilizer (10-20-20 or equivalent) 1/3 TO	<u>N</u> lbs/acre (500 lbs minimum)	
Mulch Hay 2	Tons/acre	
	eed Mixtures	
Area I	Area II	lho/o avo
Area I Seed Type lbs/acre	Area II Seed Type	lbs/acre
Area I Seed Type Ibs/acre CHESAPEAKE CONTRACTOR'S MIX 40	Area II Seed Type ORCHARD GRASS	15
Area I Seed Type Ibs/acre CHESAPEAKE CONTRACTOR'S MIX 40 ALSIKE CLOVER 5	Area II Seed Type	
Area I Seed Type Ibs/acre CHESAPEAKE CONTRACTOR'S MIX 40	Area II Seed Type ORCHARD GRASS	15
Area I Seed Type Ibs/acre CHESAPEAKE CONTRACTOR'S MIX 40 ALSIKE CLOVER 5 ANNUAL RYE 15	Area II Seed Type ORCHARD GRASS	15
Area I Seed Type Ibs/acre CHESAPEAKE CONTRACTOR'S MIX 40 ALSIKE CLOVER 5	Area II Seed Type ORCHARD GRASS ALSIKE CLOVER	15
Area I Seed Type Ibs/acre CHESAPEAKE CONTRACTOR'S MIX 40 ALSIKE CLOVER 5 ANNUAL RYE 15 Attach: Drawing(s) of road, location, pit and proposed area fo	Area II Seed Type ORCHARD GRASS ALSIKE CLOVER r land application.	15
Area I Seed Type Ibs/acre CHESAPEAKE CONTRACTOR'S MIX 40 ALSIKE CLOVER 5 ANNUAL RYE 15 Attach:	Area II Seed Type ORCHARD GRASS ALSIKE CLOVER r land application.	15
Area I Seed Type Ibs/acre CHESAPEAKE CONTRACTOR'S MIX 40 ALSIKE CLOVER 5 ANNUAL RYE 15 Attach: Drawing(s) of road, location, pit and proposed area for the second section of involved 7.5' topographic sheet to the second section of involved 7.5' topographic sheet to the second section of involved 7.5' topographic sheet topographic shee	Area II Seed Type ORCHARD GRASS ALSIKE CLOVER r land application.	15
Area I Seed Type Ibs/acre CHESAPEAKE CONTRACTOR'S MIX 40 ALSIKE CLOVER 5 ANNUAL RYE 15 Attach: Drawing(s) of road, location, pit and proposed area fo	Area II Seed Type ORCHARD GRASS ALSIKE CLOVER r land application.	15
Area I Seed Type Ibs/acre CHESAPEAKE CONTRACTOR'S MIX 40 ALSIKE CLOVER 5 ANNUAL RYE 15 Attach: Drawing(s) of road, location, pit and proposed area for Photocopied section of involved 7.5' topographic sheet Plan Approved by:	Area II Seed Type ORCHARD GRASS ALSIKE CLOVER r land application.	15
Area I Seed Type Ibs/acre CHESAPEAKE CONTRACTOR'S MIX 40 ALSIKE CLOVER 5 ANNUAL RYE 15 Attach: Drawing(s) of road, location, pit and proposed area for Photocopied section of involved 7.5' topographic sheet Plan Approved by: Title: INSPECTOR OOG	Area II Seed Type ORCHARD GRASS ALSIKE CLOVER r land application.	15
Area I Seed Type Ibs/acre CHESAPEAKE CONTRACTOR'S MIX 40 ALSIKE CLOVER 5 ANNUAL RYE 15 Attach: Drawing(s) of road, location, pit and proposed area for Photocopied section of involved 7.5' topographic sheet Plan Approved by:	Area II Seed Type ORCHARD GRASS ALSIKE CLOVER r land application.	15
Area I Seed Type Ibs/acre CHESAPEAKE CONTRACTOR'S MIX 40 ALSIKE CLOVER 5 ANNUAL RYE 15 Attach: Drawing(s) of road, location, pit and proposed area for Photocopied section of involved 7.5' topographic sheet Plan Approved by: Title: INSPECTOR OOG	Area II Seed Type ORCHARD GRASS ALSIKE CLOVER r land application.	15
Area I Seed Type Ibs/acre CHESAPEAKE CONTRACTOR'S MIX 40 ALSIKE CLOVER 5 ANNUAL RYE 15 Attach: Drawing(s) of road, location, pit and proposed area for Photocopied section of involved 7.5' topographic sheet Plan Approved by: Title: inspector 006 Date: 3-18-15	Area II Seed Type ORCHARD GRASS ALSIKE CLOVER or land application. et.	15

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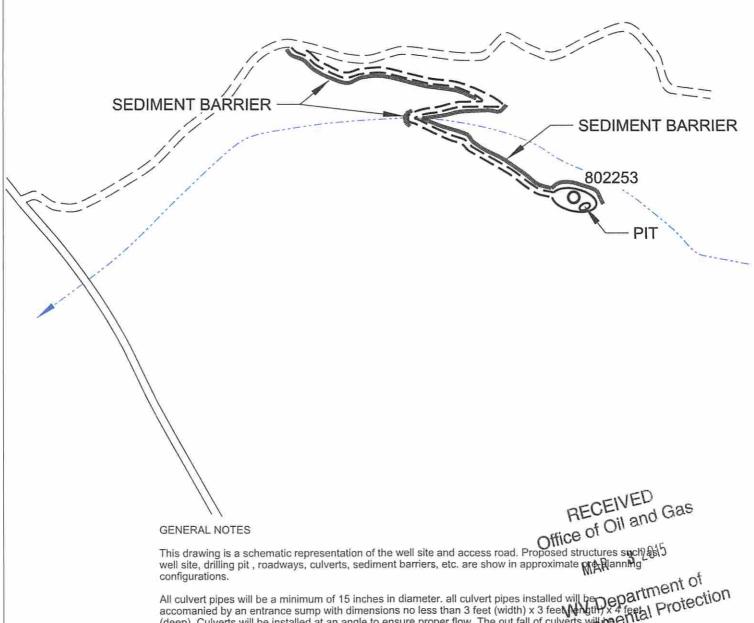
WV Department of Environmental Protection 04/24/2015

4300558P

CHESAPEAKE APPALACHIA, L.L.C.

RECLAMATION DIAGRAM WELL LOCATION 802253

API 47-043-00558

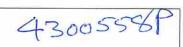


All culvert pipes will be a minimum of 15 inches in diameter. all culvert pipes installed will be position accomanied by an entrance sump with dimensions no less than 3 feet (width) x 3 feet (width) x 4 feet (protection (deep). Culverts will be installed at an angle to ensure proper flow. The out fall of culverts will pact protected from erosion and sedimentation using large roacks of other sediment control deemed necessary in the prevention of erosion and sedimentation. Storm water from the difference 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 contruction phase, where applicable, and in areas that will allow. These structures will be considered permanent and used as such.

Permanent seeding: See Attachment #1.

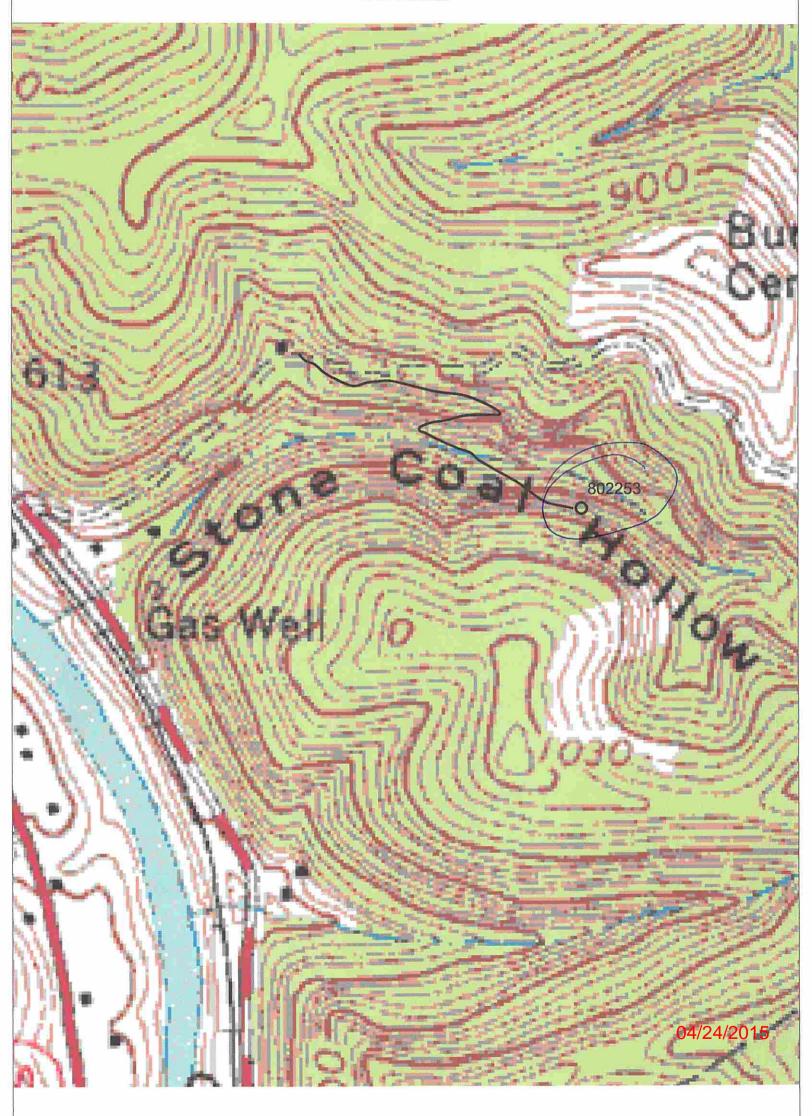
04/24/2015



CHESAPEAKE APPALACHIA, L.L.C.

TOPOGRAPHICAL MAP OF ACCESS AND WELL LOCATION 802253

API 47-043-00558



CHESAPEAKE ENERGY CORPORATION - EASTERN DIVISION P.O. BOX 579 - 8165 COURT AVENUE - HAMLIN, WV 25523 304 824-5141 - FAX 304 824-2247

