

### 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 18, 2014

### WELL WORK PERMIT Re-Work

This permit, API Well Number: 47-3902160, issued to VIKING ENERGY CORPORATION, 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.

Please be advised that form WR-35, Well Operators Report of Well Work is to be submitted to this office within 90 days completion of permitted well work, as should form WR-34 Discharge Monitoring Report within 30 days of discharge of pits, if applicable. Failure to abide by all statutory and regulatory provisions governing all duties and operations hereunder may result in suspension or revocation of this permit and, in addition, may result in civil and/or criminal penalties being imposed upon the operators.

In addition to the applicable requirements of this permit, and the statutes and rules governing oil and gas activity in WV, this permit may contain specific conditions which must be followed. Permit conditions are attached to this cover letter.

Per 35CSR-4-5.2.g this permit will expire in two (2) years from the issue date unless permitted well work is commenced. If there are any questions, please feel free to contact me at (304) 926-0499 ext. 1654.

James Martin

Chief

Operator's Well No: CASSIE BAILEY #1 (9747)

Farm Name: BAILEY, CLAY & LESLIE

API Well Number: 47-3902160 Permit Type: Re-Work

Date Issued: 02/18/2014

WW - 2B (Rev. 8/10)

# STATE OF WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS WELL WORK PERMIT APPLICATION

					CATION 39	09	55	1
) Well Operato	r: Viking	Energy,	, Inc	51440	Kanawha	Union	Pocatal	ico
				Operator ID	County	District	Quadr	angle
) Operator's W	Vell Numb	er: C Ba	iley #1		3) Elevation:	650.40		
) Well Type: (a	a) Oil	or Ga	as X					
(k	) If Gas:	Produ	iction X / Un	derground Sto	orage	_		
		Deep	p <u>X</u> / §	Shallow	_			
<ul><li>i) Proposed Ta</li><li>ii) Proposed To</li><li>ii) Approximate</li><li>ii) Approximate</li></ul>	fresh wa	ter strata		Formation at I	Proposed Tai Proposed Tota	rget Depth: <u>5</u> al Depth: <u>New</u>	320' berg	
) Approximate	coal sea	m depth:	S: None of record					
0) Approximat	e void de	pths,(co	al, Karst, other):					
			s tributary to ac					
i) bocs land (	Jonain oc	ai scaiii	is tributary to ac	uve iiiiie: _				
			nd fracturing meth	/				
ug the Newberg	formation, p	perferate a	and Frac the Oriska	any formation	(I)	SEE NA	REATIL	· .
		_				11	11.	3
2		7.65				X	we	
3) TYPE S		C/				1 1800 11	3.13	
	PECIFIC	the second second		BING PROGR FOOTAGE		/ /	.3.13 NT	
	Size	ATIONS		FOOTAGE For Drilling	NTERVALS	/ /	<u>TV</u>	
Conductor	3	ATIONS Grade		FOOTAGE	NTERVALS	Fill -up (Cu.	NT Ft.)	History
Conductor Fresh Water	<u>Size</u>	ATIONS Grade		FOOTAGE For Drilling	Left in Well	CEMEN Fill -up (Cu.	rt.) ks &	
Fresh Water	<u>Size</u> 13 3/8	ATIONS Grade		FOOTAGE For Drilling 84'	Left in Well	Fill -up (Cu.	rt.) ks &	
	<u>Size</u> 13 3/8	ATIONS Grade		FOOTAGE For Drilling 84'	Left in Well	Fill -up (Cu. 45 sac 475 sac 206 SA	NT Ft.) cks & cks &	HISTIN
Fresh Water Coal	Size 13 3/8 8 5/8	ATIONS Grade		FOOTAGE For Drilling 84' 1777'	Left in Well 84' 1777'	Fill -up (Cu. 45 sac 475 sac 206 SA	Ft.) cks &	HISTING 9M
Fresh Water Coal Intermediate	Size 13 3/8 8 5/8	ATIONS Grade		FOOTAGE For Drilling 84' 1777'	Left in Well 84' 1777'	Fill -up (Cu. 45 sac 475 sac 206 SA Office of	NT Ft.) cks & cks &	KISTIN D 9M d Gas
Fresh Water Coal Intermediate Production	Size 13 3/8 8 5/8	ATIONS Grade		FOOTAGE For Drilling 84' 1777'	Left in Well 84' 1777'	Fill -up (Cu. 45 sac 475 sac  206 SA Office of	St.)  cks &	HISTING O 9 M of Gas
Fresh Water Coal Intermediate Production Tubing	Size 13 3/8 8 5/8 5 1/2	ATIONS Grade		FOOTAGE For Drilling 84' 1777'	Left in Well 84' 1777'	Fill -up (Cu. 45 sac 475 sac 206 SA Office of	cks & Converted to the	clisti Alstin D 9 M d Gas

Viking Energy Corp.

API# 47-039-02160 ROEEP

Rework

## PARIAL PLUGGING PROCEDURE

Viking Energy Corp. is planning to stimulate the Oriskany zone in the Cassie Bailey #1 (API# 47-039-02160). We will plug off the depleted Newburg formation, which is approximately 500 ft. below the Oriskany formation. The top of the plug will set 100 ft. below the Oriskany and consist of cement and gel. The plug itself will be 100 ft. long. We will then perforate and inject nitrogen and a slurry gel mix into the formation at a maximum pressure of 3500 lbs psi. The stimulation is where you will see the pressures.

The Oriskany field in this area of Kanawha County, WV was drilled in the 1930's and 1940's. The US Geological Survey considers the Oriskany formation a depleted formation. Through Viking Energy's 25 years of experience in recompleting over 25 wells in the Oriskany formation and producing Oriskany wells, we fill confident about how this formation performs.

The findings of all of Viking's recompletions in the Oriskany are all very similar. The formation pressure that we have encountered has never been above 400 lbs psi. Most of the wells pressure comes into 250 to 300 lbs psi. Attached, are maps showing the Cassie Bailey#1 and a buffer of 5 miles, 10 miles, and 20 miles. This shows where Viking Energy has recompleted these types of wells in the past. The results have been the same.

NEWBURG PLUGGING:

GEL BOTTOM OF WELL WITH A MINIMUM OF

GEL BENTONITE (BY WEIGHT) MIXED WITH FRESH WATER.

GET A 100 FT CLASS A CEMENT PLUG WITH

NO MORE THAN 3%0 CACI2 AND NO OTHER ADDITIVES

NO MORE THAN 3%0 CACI2 AND NO OTHER ADDITIVES

TO A POINT 100 FEET BELOW THE ORISKANY.

2/17/2014



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

QuadrangleCharleston

Rotary X Spudder Cable Tools 

Storage 

Permit No, Kan.	2160		WELL	RECORD		Oll or C	Gas Well Gas (KIND)
Company J. I.	. Tritti	po harleston,	West Va.	Casing and Tubing	Used In Drilling	Left In Well	Packers
Farm Cassie B	. Bailey	(Unit)	Acres 285	Size	1,7		
Location (waters)				16	سنتسبس		Kind of Packer
Well No. 1				133/8	84	81+	Cemented 45 sac
District Union				10		A. I. 18 . ext8ex 6012 (	Size of
The surface of tract	is owned in fee	e by C B .	Bailey	814.5/8	1777	1777	Cemented 475 -
Chamlacta	TroctAd	thress BOX 100	124	658			Depth set
Charlesto Mineral rights are o	owned by	Sa	mo	5 3/16 1/2	The second secon		
	Ac	dress Same		412			
Drilling commence	d 8-24-6	7	***********				
Drilling completed .	9-12-67	) 	man (managarina)		of the second		Perf. bottom
Date Shot	From		Q			The second second	Perf. top
With							Perf. bottom
WELL FRACTUR RESULT AFTER 1 ROCK PRESSURE Fresh Water	ED (DETAILS FREATMENT ( FAFTER TRE 128	(Initial open Flow ATMENT	or bbis.)	HOURS	1050	Feet	FEETINCHES
Froducing Sand	TIGHENTS.				Depth274.0		
Formation	Color	Hard or Soft	Тор	Bottom	Oll, Gas or Water	Depth	n Remarks
and & Shale and and & Shale hale & Sand haley Sand hale			0 55 83 128 469 528 540	55 83 128 469 528 540 1016	Water	120	
halo & Sand and halov Sand	1		1016 1053 1462	1053 1462 1475	Soft Water	1050	

SSS S S S S S SI 1512 1553 1625 1475 1512 Sand Shaley Sand Lime Shale Sand & Shale Shale Shale & Lime 2451 1-1 dil.d Shale 4572 4950 Lime Onondaga 5145 Lime & Dolomite 5315 5345 5416 5145 5315 5345 5416 Lime Gas Lime & Shallo Office 116 and Newburg Limo Gan 5422 Sand 02/21/2014 5422 Total Depth /V Departm Environmental P attaction

WW-2	2A
(Rev.	6-07)

1). Date: october 15, 2013

2.) Operator's Well Number

C. Bailey #1

County

Permit

3.) API Well No .:

State 47-

- 02160

# STATE OF WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS NOTICE AND APPLICATION FOR A WELL WORK PERMIT

	ner(s) to be served	10/	5) (a) Coal Ope	erator
(a) Name	Clay Bailey	VV	_ Name	None
Address	264 Cedar Cliff Lane		Address	
	Charleston, WV 25312			1-
(b) Name			(b) Coal O	wner(s) with Declaration
Address			Name	Clay Bailey
			Address	264 Cedar Cliff Lane
				Charleston, WV 25312
(c) Name			Name	
Address			Address	· ·
			_	
6) Inspector	Terry Urban P. O	Bx1207	(c) Coal Le	essee with Declaration
Address	Charleston, WV C Le	ndemared	Name	None
		25046	Address	
Telephone	304-549-5915		-	
	TO THE	PERSONS NA	MED ABOVE TA	AKE NOTICE THAT:
Included is th				acts by which I hold the right to extract oil and gas
OR		3		and any mineral menginers on and gas
	e information require	ed by Chapter 22	. Article 6. Section	n 8(d) of the Code of West Virginia (see page 2)
L certify t	hat as required unde	er Chanter 22-6	of the West Virgi	inia Code I have served copies of this notice and
application a loca	ation plat and accom	nanving docume	ents nages 1 throu	ugh on the above named parties by:
Х	Personal Service	ce (Affidavit attac	ched)	agii oii the above flamed parties by.
<u></u>			al receipt attache	(h
-		tice of Publication		۵)
I have re-				I agree to the terms and conditions of any permit
issued under this		mapler 22-0 and	1 33 CSR 4, and	r agree to the terms and conditions of any permit
		that I have ners	onally evamined	and am familiar with the information submitted on
this application for	orm and all attachme	ents and that ha	ised on my inquir	ry of those individuals immediately responsible for
	rmation, I believe tha			
				lse information, including the possibility of fine and
imprisonment.				are processing or fine and
		Well Operator	Viking Energy, Inc	1 1 1
		By:	Michael Pinkerton	nuchael Pinkerto
		Its:	President	
		Address	P O Box 13366	- 1354 ° 0.
			Sissonville, WV 25360	process of the same
		Telephone	304-988-1161	
Subscribed and s	worn before me this	day of	october	Office of Ull Sat Gas
		Ma	ATIV	Notary Public 5 2049
My Commission E	Expires 9- 9-	2019		
Oil and Gas Privacy I				UUU Parantia See See See See See See See See See Se
on and odd i fivacy i	10.100			WV Department S

The Office of Oil and Gas processes your personal information, such as name, address and phone number, as a part of our regulatory duties. Your personal information may be disclosed to other State agencies or third parties in the normal course of business or as needed to comply with statutory or regulatory requirements, including Freedom of Information Act requests. Our office will appropriately secure your personal information. If you have any questions about our use of your personal information, please contact DEP's Chief Privacy Officer at <a href="mailto:depprivacyofficer@wv.gov">depprivacyofficer@wv.gov</a>

#### SURFACE OWNER WAIVER

County	Kanawha	Operator	Viking Energy, Inc	
		Operator well number	C. Bailey #1	

### INSTRUCTIONS TO SURFACE OWNERS NAMED ON PAGE WW2-A

The well operator named on page WW2A is applying for a permit from the State to do oil or gas well work. (Note: If the surface tract is owned by more than three persons, then these materials were served on you because your name appeared on the Sheriff's tax ticket on the land or because you actually occupy the surface tract. In either case, you may be the only owner who will actually receive these materials.) See Chapter 22 of the West Virginia Code. Well work permits are valid for 24 months. If you do not own any interest in the surface tract, please forward these materials to the true owner immediately if you know who it is. Also, please notify the well operator and the Office of Oil and Gas.

### NOTE: YOU ARE NOT REQUIRED TO FILE ANY COMMENT. WHERE TO FILE COMMENTS AND OBTAIN ADDITIONAL INFORMATION:

Chief, Office of Oil and Gas Department of Environmental Protection 601 57<sup>th</sup> St. SE Charleston, WV 25304 (304) 926-0450

<u>Time Limits and methods for filing comments.</u> The law requires these materials to be served on or before the date the operator files his Application. You have **FIFTEEN (15) DAYS** after the filing date to file your comments. Comments must be filed in person or received in the mail by the Chief's office by the time stated above. You may call the Chief's office to be sure of the date. Check with your postmaster to ensure a dequate delivery time or to arrange special expedited handling. If you have been contacted by the well operator and you have signed a "voluntary statement of no objection" to the planned work described in these materials, then the permit may be issued at any time.

<u>Comments must be in writing.</u> Your comments must include your name, address and telephone number, the well operator's name and well number and the approximate location of the proposed well site including district and county from the application. You may add other documents, such as sketches, maps or photographs to support your comments.

The Chief has the power to deny or condition a well work permit based on comments on the following grounds:

- 1) The proposed well work will constitute a hazard to the safety of persons.
- 2) The soil erosion and sediment control plan is not adequate or effective;
- 3) Damage would occur to publicly owned lands or resources;
- 4) The proposed well work fails to protect fresh water sources or supplies;
- 5) The applicant has committed a substantial violation of a previous permit or a substantial violation of one or more of the rules promulgated under Chapter 22, and has failed to abate or seek review of the violation...".

If you want a copy of the permit as it is issued or a copy of the order denying the permit, you should request a copy from the Chief.

<u>List of Water Testing Laboratories.</u> The Office maintains a list of water testing laboratories which you can hire to test your water to establish water quality prior to and after drilling. Contact the Chief to obtain a copy.

#### **VOLUNTARY STATEMENT OF NO OBJECTION**

I hereby state that I have read the instructions to surface owners and that I have received copies of a Notice and Application for a Well Work Permit on Form WW2-A, and attachments consisting of pages 1 through \_\_\_\_ including a work order on F orm WW2-B, a s urvey plat, and a s oil and erosion plan, all for proposed well work on my surface land as described therein.

I further state that I have no objection to the planned work described in these materials, and I have no objection to a permit being issued on those materials.

FOR EXECUTION BY A NATURAL PERSON

FOR EXECUTION BY A CORPORATION, ETC.

Date 10.12.13 Signature	Company Name By	RECEIVED	
CLAY I. BAILEY	Its	ORGE OF OF AND SAC	Date
Print Name		Signature / Department of Environmental Protection	Date

### COAL OPERATOR, OWNER, OR LESSEE WAIVER

County Kanawha		O D-11#4
Operator Viking Energy, Inc	Operator's Well Number	C. Bailey #1
INSTRUCTIONS TO	COAL OPERATOR, OWNER	R, OR LESSEE
To the coal operator, owner, or I any objection you wish to make or are rewith the Chief of the Office of Oil and G by the Office. Mail objections to:	equired to make by WV Code	
Chief, Office of Oil and Gas Department of Environmental Protection 601 57 <sup>th</sup> St. SE Charleston, WV 25304 (304) 926-0499 extension 1654	1	
	WAIVER	
The undersigned coal operator _ location has examined this proposed we location, the well location has been add work proposed to be done at this location requirements of the West Virginia Code	ell location. If a mine map exi ed to the mine map. The und on, provided, the well operato	dersigned has no objection to the r has complied with all applicable
FOR EXECUTION BY A NATURAL PERSON	FOR EXEC	CUTION BY A CORPORATION, ETC.
	Company e \0.12.13 Name	
Signature	By Its	Date
	Signa	ature Date

RECEIVED
Office of Oil and Gas

OCT 1 5 2013

Operator's	Well	Number	C. Bailey	y #
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# INFORMATION SUPPLIED UNDER WEST VIRGINIA CODE Chapter 22, Article 6, Section 8(d) IN LIEU OF FILING LEASE(S) AND OTHER CONTINUING CONTRACT(S)

Under the oath required to make the verification on page 1 of this Notice and Application, I depose and say that I am the person who signed the Notice and Application for the Applicant, and that –

- (1) the tract of land is the same tract described in this Application, partly or wholly depicted in the accompanying plat, and described in the Construction and Reclamation Plan;
- (2) the parties and recordation data (if recorded) for lease(s) or other continuing contract(s) by which the Applicant claims the right to extract, produce or market the oil or gas are as follows:

Grantor, Lessor, etc.	Grantee, Lessee, etc.	Royalty	Book/Page
C B Bailey	United Fuel Gas Company	1/8	124/4
Columbia Gas Transmission Corp	Columbia Natural resources, Inc	Assignment	125/247
Columbia Natural resources, Inc	Viking Energy, Inc	Assignment	126/557

### Acknowledgement of Possible Permitting/Approval In Addition to the Office of Oil and Gas

The permit applicant for the proposed well work addressed in this application he reby a cknowledges the possibility of the need for permits and/or approvals from local, state, or federal entities in addition to the DEP, Office of Oil and Gas, including but not limited to the following:

- WV Division of Water and Waste Management
- WW Division of Natural Resources
- WV Division of Highways
- U.S. Army Corps of Engineers
- U.S. Fish and Wildlife Service
- County Floodplain Coordinator

The applicant further acknowledges that any Office of Oil and Gas permit in no way overrides, replaces, or nullifies the need for other permits/approvals that may be necessary and further affirms that all needed permits/approvals should be ac quired from the appropriate authority before the affected activity is initiated.

Well Operator:

By:Its:

Viking Energy, Inc

Michael Pinkerton, President

OCT 1 5 2013

WV Department of Environmen <mark>02/24/29</mark> भि

W	W	-9	
(5	/1	3)	

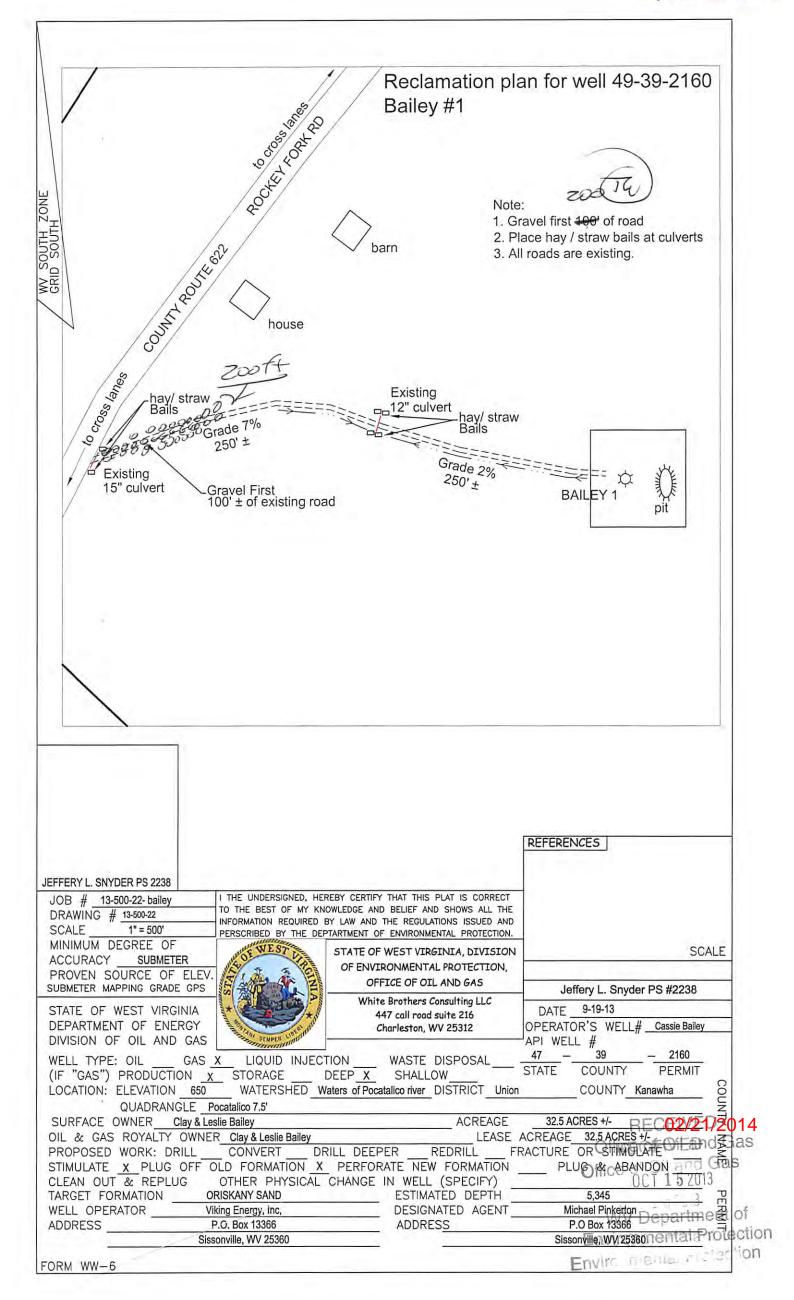
P	age of	
API Number 47 - 038	- 02160	
Operator's Well No.	C bailey #1	

## STATE OF WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION OFFICE OF OIL AND GAS

### FLUIDS/ CUTTINGS DISPOSAL & RECLAMATION PLAN

	ring Energy, Inc	OP Code51440
Watershed (HUC 10	)_Pocatalico River	Quadrangle Pocatalico
Elevation 650.40	County Kanaw	vha District_ Union
Do you anticipate u	sing more than 5,000 bbls of water to	complete the proposed well work? Yes No X
	or drill cuttings? Yes X No	
	e describe anticipated pit waste: Frac	
		No If so, what ml.? 30 ml
	Disposal Method For Treated Pit Waste	
_	Underground Injection ( UIC F	
_	Reuse (at API Number	
· ·	Other (Explain	n WW-9 for disposal location)
Will closed loop sys		
		r, oil based, etc. N/A
	d, what type? Synthetic, petroleum, et	
	l in drilling medium? N/A	The state of the s
Drill cuttings dispos	al method? Leave in pit, landfill, rem	oved offsite, etc. N/A
-If left in p	it and plan to solidify what medium w	rill be used? (cement, lime, sawdust) N/A
-Landfill of	r offsite name/permit number? N/A	
on August 1, 2005, provisions of the pe	by the Office of Oil and Gas of the We ermit are enforceable by law. Violation in lead to enforcement action. Inder penalty of law that I have person	and conditions of the GENERAL WATER POLLUTION PERMIT issue est Virginia Department of Environmental Protection. I understand that the ons of any term or condition of the general permit and/or other applicable onally examined and am familiar with the information submitted on the based on my inquiry of those individuals immediately responsible for
I certify us application form ar obtaining the inform		n is true, accurate, and complete. I am aware that there are significar
I certify us application form ar obtaining the inform penalties for submitted	nation, I believe that the information	n is true, accurate, and complete. I am aware that there are significan
I certify us application form ar obtaining the information penalties for submitted.  Company Official S	nation, I believe that the information ting false information, including the po	n is true, accurate, and complete. I am aware that there are significan
I certify us application form are obtaining the information penalties for submitted Company Official S. Company Official (	nation, I believe that the information ting false information, including the polygonian ignature Michael Pinkerton	n is true, accurate, and complete. I am aware that there are significan
I certify us application form are obtaining the information penalties for submitted Company Official S. Company Official (	nation, I believe that the information ting false information, including the polygonian ignature Michael Pinkerton	n is true, accurate, and complete. I am aware that there are significar
I certify us application form are obtaining the information penalties for submitted Company Official S Company Official (Company Official T	nation, I believe that the information ting false information, including the polygonian ignature Michael Pinkerton	n is true, accurate, and complete. I am aware that there are significant ossibility of fine or imprisonment.
I certify us application form are obtaining the information penalties for submitted Company Official S Company Official (Company Official T	nation, I believe that the information ting false information, including the policy of	n is true, accurate, and complete. I am aware that there are significant ossibility of fine or imprisonment.
I certify us application form are obtaining the information penalties for submitted Company Official S Company Official (Company Official T	mation, I believe that the information ting false information, including the policy ignature Michael Pinkerton  Typed Name) Michael Pinkerton  Title President  rn before me this 15 day  Man	of october, 20/30

Form WW-9	Operator's Well No. C Bailey #1
Proposed Revegetation Treatment: Acres Disturbed	Prevegetation pH
Lime Three (3) Tons/acre or to correct to	pH <u>6.5</u>
Fertilizer (10-20-20 or equivalent) 500 lbs	lbs/acre (500 lbs minimum)
2 tone hav mulck	ns/acre
	Seed Mixtures
Area I Seed Type lbs/acre	Area II Seed Type lbs/acre
Orchard Grass 40#	•
Perennial Rye 40#	SAME AS AREA #1
Landine Clover 40#	
Attach: Drawing(s) of road, location, pit and proposed area for land a Photocopied section of involved 7.5' topographic sheet.  Plan Approved by:  Operator Will use State  Will Also Rock 200 ft from Him	Z BMPS fae Sedmut & Erosian
Title: Inspect due Ceas Field Reviewed? ( ) Yes (	Date: 10-5-13





SCALE 1:12000

OCT 1 5 2013

WV Department of Erryironmental Protection 02/21/2014

