

### 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 20, 2014

### WELL WORK PERMIT

### Vertical Well

This permit, API Well Number: 47-3906366, issued to RESERVE OIL & GAS, INC., 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: WVSU #2

Farm Name: WVSU BRD. OF GOVERNORS

API Well Number: 47-3906366

Permit Type: Vertical Well

Date Issued: 05/20/2014

### **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. If the operator encounters an unanticipated void, or an anticipated void at an unanticipated depth, the operator shall notify the inspector within 24 hours. Modifications to the casing program may be necessary to comply with W. Va. Code § 22-6-20, which requires drilling to a minimum depth of thirty feet below the bottom of the void, and installing a minimum of twenty (20) feet of casing. Under no circumstance should the operator drill more than fifty (50) feet below the bottom of the void or install less than twenty (20) feet of casing below the bottom of the void.
- 2. Pursuant to 35 CSR § 4-19.1.a, at the request of the surface owner all water wells or springs within 1000 feet of the proposed well that are actually utilized for human consumption, domestic animals or other general use shall be sampled and analyzed.
- 3. Pursuant to 35 CSR § 4-19.1.c, if the operator is unable to sample and analyze any water well or spring within one thousand (1,000) feet of the permitted well location, the Office of Oil and Gas requires the operator to sample, at a minimum, one water well or spring located between one thousand (1,000) feet and two thousand (2,000) feet of the permitted well location.
- 4. All pits must be lined with a minimum of 20 mil thickness synthetic liner.
- 5. 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.
- 6. During the surface casing and cementing process, in the event cement does not return to the surface, or any other casing string that is permitted to circulate cement to the surface and does not return to the surface, the oil and gas inspector shall be notified within twenty-four (24) hours.
- 7. Well work activities shall not constitute a hazard to the safety of persons.

WW - 2B (Rev. 8/10)

4703906366CK 9646

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

) Well Operato					35	09	594
9 - 5	r: Reser	rve Oil &	Gas, Inc.	310-324	Kanawha	Union	St. Albans
				Operator ID	County	District	Quadrang
Operator's W	Vell Numb	er: WSL	J #2		3) Elevation:	595	
) Well Type: (a	a) Oil	or Ga	ıs <u>×</u>				
(k	) If Gas:	Produ	ction × / Une	derground Stor	rage		
		Deep	p/ S	Shallow <u>×</u>			
) Proposed Ta ) Proposed To ) Approximate ) Approximate	tal Depth fresh wa	: 4350 ter strata					
) Approximate	coal sea	m depths	s: None				
0) Approximat	e void de	pths.(co	al, Karst, other):	None			
1) Does land	contain co	al seam	s tributary to ac	tive mine? No	0		Hola
2) Describe pro	posed we	ll work ar	nd fracturing meth	nods in detail (af	ttach additiona	al sheets if ne	eded) (1
rill and complete	a New Dev	onian Sha	le well with a 2 sta	ge frac.		1 mm	LIV
					-	Am /	)
		-					
3) TYPE S	SPECIFIC	and the second	ASING AND TU	- CONTRACTOR	the second secon		
		AHONO		FOOTAGE	INTERVAL	S CEME	NT
	Size	Grade	Weight per ft	For Drilling	Left in Well	Fill -up (Cu	
Conductor	<u>Size</u> 13 3/8	A TAI	VINE VOLUMENT	1 - N - N - N - N - N - N - N - N - N -	A SECTION	Law Till And	. Ft.)
	ID RODGE	A TAI	VINE VOLUMENT	For Drilling	Left in Well	Fill -up (Cu	<u>. Ft.)</u>
Fresh Water	13 3/8	A TAI	VINE VOLUMENT	For Drilling 20'	Left in Well	Fill -up (Cu	<u>. Ft.)</u>
Fresh Water Coal	13 3/8	A TAI	VINE VOLUMENT	For Drilling 20'	Left in Well	Fill -up (Cu	. Ft.)
Fresh Water Coal Intermediate	13 3/8 9 5/8	A TAI	VINE VOLUMENT	For Drilling 20' 270° 33	Left in Well	Fill -up (Cu CTS CTS X 40%	. Ft.) S excess
Fresh Water Coal Intermediate Production	13 3/8 9 5/8 7	A TAI	VINE VOLUMENT	For Drilling 20' 270° 33 1800'	Left in Well	Fill -up (Cu CTS CTS X 40%	. Ft.) S excess
Fresh Water Coal Intermediate Production Tubing	13 3/8 9 5/8 7	A TAI	VINE VOLUMENT	For Drilling 20' 270° 33 1800'	Left in Well	CTS X 40%  CTS X 40%  CTS x 30% exc  120 S	Excess ess in hole
Conductor Fresh Water Coal Intermediate Production Tubing Liners Packers: Kind	13 3/8 9 5/8 7 4 1/2	A TAI	VINE VOLUMENT	For Drilling 20' 270° 33 1800'	Left in Well	Fill -up (Cu CTS CTS X 40%	Excess ess in hole

WW-	2A
(Rev.	6-07)

1). Date:			
2.) Operator's Wel	l Number	WVSU #2	
	State	County	Permit
3 ) API Well No :	47-		

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

4) Surface Own	ner(s) to be served		5) (a) Coal Operator		
(a) Name	Board of Governors, West				
Address	124 Ferrell Hall, P.O. Box :	363	Address		
. 10,00,00	Institute, WV 25112				
(b) Name			(b) Coal Owner(s)	with Declaration	
Address	-		Name	Control of the Control of the	
7,100,000	-		Address		
	-		- 020111		
(c) Name			Name		
Address	-		Address		
, , , , , , , , , , , , , , , , , , , ,	7		-0.00771075		
6) Inspector	Terry Urban		(c) Coal Lessee w	ith Declaration	
Address	P.O. Box 1207		Name		
	Clendenin, WV 25045		Address		
Telephone	304-549-5915				
	TO THE F	PERSONS NAI	MED ABOVE TAKE NO	TICE THAT:	
Included is th	e lease or leases or	other continuing	contract or contracts by w	which I hold the right	to extract oil and gas
OR					
	ation plat, and accom Personal Servic Certified Mail (F	panying docume ce (Affidavit attac	al receipt attached)		
I have re-			135 CSR 4, and I agree	to the terms and or	anditions of any permit
issued under this		napter 22-0 and	100 COIX 4, and 1 agree	to the terms and co	onditions of any permit
		that I have pers	onally examined and am	familiar with the info	ormation submitted on
this application for	orm and all attachme	ents, and that ba	sed on my inquiry of tho	se individuals immed	
			is true, accurate and com		
	re that there are sign	nificant penalties	for submitting false inform	nation, including the	possibility of fine and
imprisonment.		Wall Operator	Reserve, Oil & Gas, Inc.		
	AL SEAL	Well Operator By:	Reserve oil & Gas, Inc.		
STATE OF V	VEST VIRGINIA	Its:	Vice President		
David N	4. Brannon Box 410	Address	929 Charleston Road		
Chica I	W 25235 lires December 10, 2017	, idai oso	Spencer, WV 25276		
My Collinission Cas		Telephone	304-927-5228	I.	DAVIDAGE
Subscribed and s	worn before me this	14 H day of	May	. 2014	16001400
Havid,	1. Branne	m	(	Notary Public	1.000
My Commission I	Expires Dice	mby 10,	2017	1.101.401.0100	MAY 1 6 2014
Oil and Gas Privacy	Notice				

The Office of Oil and Gas processes your personal information, such as name, address and phone number, as a part of Oil and Gas Your personal information may be disclosed to other State agencies or third parties in the normal course of bushios or last rection 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 depprivacyofficer@wv.gov

#### SURFACE OWNER WAIVER

County	Kanawha	Operator	Reserve Oil & Gas, Inc.	
The second second	-	Operator well number	WWSU #2	

### 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

Time Limits and methods for filing comments. 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.

Comments must be in writing. 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	R EXECUTION BY A CORPORATION, ETC.		
	5-16-14 Company Name		Received
Melvin Sorres / WP Businessy	France By Its		Date 1 6 2014
Print Name		Signature	Office of Oil and Pistection
			WV Dept. of Environment

### COAL OPERATOR, OWNER, OR LESSEE WAIVER

Operator Reserve Oil & Gas, Inc.	Operator's Well Number	. WVSU #2
Operator indicate on a cas, ma.	_ Operator 3 vveii (vuilibei	
INSTRUCTIONS TO	COAL OPERATOR, OWNE	R, OR LESSEE
To the coal operator, owner, or any objection you wish to make or are with the Chief of the Office of Oil and by the Office. Mail objections to:	required to make by WV Cod	/2-A. You are hereby notified that de 22-6-15, 16 or 17, must be filed after the receipt of this application
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	o <b>n</b>	
•	WAIVER	
The undersigned coal operator location has examined this proposed w location, the well location has been adwork proposed to be done at this location requirements of the West Virginia Code	vell location. If a mine map e ded to the mine map. The un ion, provided, the well operat	ndersigned has no objection to the tor has complied with all applicable
FOR EXECUTION BY A NATURAL PERSON	FOR EXE	ECUTION BY A CORPORATION, ETC.
	Company ateName	
Signature	By lts	Date
	Sig	nature Date

Received

MAY 1 6 2014

Office of Oil and Gas
WV Dept. of Environmental Protection
05/23/2014

Operator's Well Number wvsu #2

# 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
Board of Governors, West Virginia State University	Reserve Oil & Gas, Inc.	1/8	LB 261/738

### 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
- WV 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 appr opriate aut hority before the affected activity is initiated.

Well Operator: By:Its: Reserve Oil & Gas, Inc.
J. Scott Freshwater

Vice President

Office of Oil and Gas

WW-2B1	
(5-12)	

Well No	. WVSU #2	

### West Virginia Department of Environmental Protection Office of Oil and Gas

### NOTICE TO SURFACE OWNERS

The well operator named below is preparing to file for a permit from the state to drill a new well. Before a well work permit can be filed with the Chief of the Office of Oil and Gas, the well operator is required to have given notice of the right to request water well or spring analytical testing. This notice shall be given to the owners or occupants of land which have a water well or spring being utilized for human consumption, domestic animals, or other general use and which is located within 1000 feet of the proposed well site.

With this form, the operator is giving you notice of your right to request analytical testing. The operator is required to sample and analyze the water wells or springs of all owners or occupants who request it. Therefore, if you wish to have your water well or spring tested, contact the operator named below.

All sampling shall be completed prior to drilling. Within thirty (30) days of the receipt of such sample analyses the operator shall submit the results to the Chief of the Office of Oil and Gas and to the owners or occupants who may have requested them.

Be advised, you have the right to sample and analyze any water supply at your own expense.

Listed below is the laboratory chosen by operator to perform analysis, and contactor chosen to collect sample.

Certified Labor Sampling Cont	and the second s	ALS Environmental Lab	
Well Operator	Reserve Oil & 0	Gas, Inc.	
Address 929 Charleston		Road	
	Spencer, WV 2	5276	
Telephone	304-927-5228		

FOR OPERATOR'S USE ONLY: Below, or on an attached page, list those persons which were given this notice. Place an asterisk beside the one(s) that contacted you and requested sampling and analyses. If there were no requests made, indicate by underling which one you have selected to sample and analyze. If there are no water wells or springs within 1000 feet of the proposed site, the Chief may require the operator to test wells up to 2000 feet from the proposed site.

SEE ATTACHMENT

Received

MAY 1 6 2014

Office of Oil and Gas

WV Dept. of Environmental Protection

05/23/2014

Operator: Shale Gas Production Well Number: WVSU #2

### Shale Gas Production, LLC

### Well Information / Potential Water Well Sample Data Sheet

Operator: Shale Gas Production, LLC

Lease Name and Number: WVSU #2

### Comments

The initial mapping review of the area surrounding the proposed well site revealed the below listed surface owner (s) that were potentially utilizing groundwater (potable) for human consumption or other purposes within one thousand (1,000) feet of the proposed well site. The following landowners have been notified of the opportunity to request a water sample should it be necessary.

Please note that the following information is subject to change upon field inspection

### Individual Contacted or Notified

Owner / Occupant:

Address: 100 H Faculty Circle Drive

Letter/Notice Date: 5/9/14

Comments: Posted Notice on door

Owner / Occupant:

Address: 100 G Faculty Circle Drive

Letter/Notice Date: 5/9/14

Comments: Posted notice on door

Owner / Occupant:

Address: 100 C Faculty Circle Drive

Letter/Notice Date: 5/9/14

Comments: Posted notice on door

Received

MAY 1 6 2014

Office of Oil and Gas WV Dept. of Environmental Protection

Operator: Shale Gas Production Well Number: WVSU #2

Owner / Occupant:

Address: 100 A Faculty Circle Drive

Letter/Notice Date: 05/09/14

Comments: Posted notice on door

Owner / Occupant:

Address: Flairwood Drive-white house on hill at end

Letter/Notice Date: 05/09/14

Comments: posted notice on door

Owner / Occupant:

Address: 100 J Faculty Circle Drive

Letter/Notice Date 05/09/14

Comments: No well

Owner / Occupant:

Address: 100 I Faculty Circle Drive

Letter/Notice Date: 05/09/14

Comments: Posted notice on door

Owner / Occupant:

Address: 100 F Faculty Circle Drive

Letter/Notice Date: 05/09/14

Comments: city water

Owner / Occupant:

Received

MAY 1 6 2014

Operator: Shale Gas Production Well Number: WVSU #2

Address: 100 E Faculty Circle Drive

Letter/Notice Date: 05/09/14

Comments: posted in box

Owner / Occupant:

Address: 100 D Faculty Circle Drive

Letter/Notice Date: 05/09/14

Comments: Posted notice on door

Owner / Occupant:

Address: 100 C Faculty Circle Drive

Letter/Notice Date: 05/09/14

Comments: No well

Owner / Occupant:

Address: 101 A/B Faculty Circle Drive

Letter/Notice Date: 05/09/14

Comments: No well

Owner / Occupant:

Address: 101 L Faculty Circle Drive

Letter/Notice Date: 05/09/14

Comments: Posted notice on door

Owner / Occupant:

Address: 101 K Faculty Circle Drive

Roceived

Office of Oil and Gas WV Dept. of Environmental Protection

05/23/2014

Operator: Shale Gas Production Well Number: WVSU #2

Letter/Notice Date: 05/09/14

Comments: Posted notice on door

Owner / Occupant:

Address: 101 M Faculty Circle Drive-Football office

Letter/Notice Date: 05/09/14

Comments: Posted notice on door

Received

MAY | U 2014

WW-9 (5/13)

	Page	of
API Number 47 -		
Operator's Wel	I No. wvsu#2	

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

### FLUIDS/ CUTTINGS DISPOSAL & RECLAMATION PLAN

Operator Name Reserve Oil & Gas, Inc.	OP Code
Watershed (HUC 10) Kanawha River	Quadrangle St. Albans
Elevation 595 County Kanawha	District Union
Do you anticipate using more than 5,000 bbls of water to com Will a pit be used for drill cuttings? Yes x No  If so, please describe anticipated pit waste: gel water	(1) 5-14-14
Will a synthetic liner be used in the pit? Yes x	No If so, what ml.? 20
Proposed Disposal Method For Treated Pit Wastes:	
Land Application Underground Injection (UIC Perm Reuse (at API Number Off Site Disposal (Supply form W Other (Explain	W-9 for disposal location)
Will closed loop system be used? N/A	
Drilling medium anticipated for this well? Air, freshwater, oi	I based, etc. Air, gel, fresh water
-If oil based, what type? Synthetic, petroleum, etc.	
1100	
Drill cuttings disposal method? Leave in pit, landfill, remove	Color de Vivision de
-If left in pit and plan to solidify what medium will b	
on August 1, 2005, by the Office of Oil and Gas of the West V provisions of the permit are enforceable by law. Violations law or regulation can lead to enforcement action.  I certify under penalty of law that I have personal application form and all attachments thereto and that, bas	I conditions of the GENERAL WATER POLLUTION PERMIT issued Virginia Department of Environmental Protection. I understand that the of any term or condition of the general permit and/or other applicable by examined and am familiar with the information submitted on this sed on my inquiry of those individuals immediately responsible for true, accurate, and complete. I am aware that there are significant bility of fine or imprisonment.
Company Official Title Vice President	MAY 1 6 2014
Subscribed and sworn before me this 14th day of	May , 20 14 Office of Oil and Gas
My commission expires Ascemby 10, 20	Notary Public STATE OF WEST VIRGINIA NOTARY PUBLIC David N. Brannon OF 7833/23014

rorm ww-9			Operator's	Well No. WVSU #2
Proposed Revegetation Treatm	ent: Acres Disturbed	1.5	Prevegetation	<sub>pH</sub> 5.5
Lime 3	Tons/acre or to cor			
Linie	10115/acre 01 10 Col		<del></del>	
Fertilizer (10-20-20 or		lbs/acre (500 lbs	minimum)	
<sub>Mulch</sub> Hay	2	Tons/acre		
		Seed Mixtures		
Area	I		A	Area II
Seed Type	lbs/acre		Seed Type	lbs/acre
Orchard Grass	25			
Red Top Clover	15	<del></del>	<u> </u>	
Plan Approved by: MALL	whita			
				<del></del>
<del></del>				
Title: Inspection	leas		-144	
Field Reviewed?	) Yes	( ) No		
				Receive



