

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

June 16, 2014

WELL WORK PERMIT

Horizontal 6A Well

This permit, API Well Number: 47-9502145, issued to JAY-BEE OIL & GAS, 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: SLEEPY 5 Farm Name: WEIMER, BRENT A. & EMMA API Well Number: 47-9502145 Permit Type: Horizontal 6A Well Date Issued: 06/16/2014

Promoting a healthy environment.

06/20/2014

PERMIT CONDITIONS

West Virginia Code § 22-6A-8(d) allows the Office of Oil and Gas to place specific conditions upon this permit. Permit conditions have the same effect as law. <u>Failure to adhere to the specified permit</u> conditions may result in enforcement action.

CONDITIONS

- 1. This proposed activity may require permit coverage from the United States Army Corps of Engineers (USACE). Through this permit, you are hereby being advised to consult with USACE regarding this proposed activity.
- 2. 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 § 22-6A-5a (12), 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.
- 3. When compacting fills, each lift before compaction shall not be more than 12 inches in height, and the moisture content of the fill material shall be within limits as determined by the Standard Proctor Density test of the actual soils used in specific engineered fill, ASTM D698, Standard Test Method for Laboratory Compaction Characteristics of Soil Using Standard Effort, to achieve 95 % compaction of the optimum density. Each lift shall be tested for compaction, with a minimum of two tests per lift per acre of fill. All test results shall be maintained on site and available for review.
- 4. Operator shall install signage per § 22-6A-8g (6) (B) at all source water locations included in their approved water management plan within 24 hours of water management plan activation.
- 5. Oil and gas water supply wells will be registered with the Office of Oil and Gas and all such wells will be constructed and plugged in accordance with the standards of the Bureau for Public Health set forth in its Legislative rule entitled *Water Well Regulations*, 64 C.S.R. 19. Operator is to contact the Bureau of Public Health regarding permit requirements. In lieu of plugging, the operator may transfer the well to the surface owner upon agreement of the parties. All drinking water wells within fifteen hundred feet of the water supply well shall be flow tested by the operator upon request of the drinking well owner prior to operating the water supply well.
- 6. Pursuant to the requirements pertaining to the sampling of domestic water supply wells/springs the operator shall, no later than thirty (30) days after receipt of analytical data provide a written copy to the Chief and any of the users who may have requested such analyses.
- 7. If any explosion or other accident causing loss of life or serious personal injury occurs in or about a well or well work on a well, the well operator or its contractor shall give notice, stating the particulars of the explosion or accident, to the oil and gas inspector and the Chief, within 24 hours of said accident.
- 8. During the casing and cementing process, in the event cement does not return to the surface, the oil and gas inspector shall be notified within 24 hours.
- 9. Operator shall provide the Office of Oil & Gas notification of the date that drilling commenced on this well. Such notice shall be provided by sending an email to DEPOOGNotify@wv.gov within 30 days of commencement of drilling.

 Reference ID: Sleepy 5 (12/11/2013)	Type: Horizontal 6A Well Permit ID: 9502145 Printed: Jun. 09, 2014 3:24 PM

WW-6B: General and Location Information

API Number:	95-02145 (47)	
Operator's Well Number:	Sleepy 5	
Filing Fee:	C First Well on Pad Subsequent Well on Pad	5,150.00
Well Pad Name:	Sleepy (T3036) Pad	
Surface Owner:	Brent A. & Wilma K. Weimer	
Public Road Access:	Walnut Fork Rd	
Please attach each of the followin	ng as seperate documents:	
Well Plat		
Wellbore Schematic		

County:	Tyler	District:	McElroy-xx
Quadrangle:	CENTER POINT	•	
Top Hole(UTM NA	D83):		
Easting: 5	22459.22 Northing: 43	369579.26	Zone: 17 🗾 🚺
Proposed Landing	Point(UTM):		
Easting: 5	22342.9 Northing: 43	369602.1	Zone: 17 💌 🛃
Proposed Bottom	Hole(UTM):		
Easting: 5	21710.86 Northing: 43	370528.02	Zone: 17 💌 🛃
Elevations (feet)	Current Ground: 1125.4		Proposed Post-Construction: 1109.3
Well Type:	Gas	O Oil	
	C Underground Storage	C Other	
Will well be drilled	more than 100 feet into the Onor	ndaga Group? 🔿	Yes 🖲 No
Depth Type:	• Shallow	C Deep	
Existing Pad?	C Yes	No	

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WW-6B: Target Formations

Complete the following table.			
Target Formation	Depth-Top (ft)	Anticipated Thickness (ft)	Associated Pressure (psi)
Marcellus	7108	40	3500

WW-6B: Well Work and Mine Details

Is proposed well location directly overlying or tributary to an active mine?
C Yes 🖲 No
If Yes, indicate name, depth, coal seam and owner of mine:
Coal Seam: Depth:
Mine Name: Owner:
Describe proposed well work, including the drilling and plugging back of any pilot hole.
Drill and Stimulate a new Horizontal Well. Using a top hole rig, we will drill top hole to kick off point by drilling the conductor, freshwater and intermediate holes. Using a directional rig we will drill the production holes.
Describe fracturing/stimulating methods in detail, including anticipated max pressure and anticipated max rate.
300-350' per stage 8,500bbls of water, 150,000-400,000lbs of sand, friction reducer, 1# per gallon, scale inhibitor and bacteria prevention 1/4# per gallon 2000 gallons 15% vol acid.
Total area to be disturbed, including roads, stockpile area, pits, etc, (acres):
Area to be disturbed for well pad only, less access road (acres):

WW-6B: FRAC Additives

Chemical (CAS) Number	Name/Description	

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	Please list any and all chemicals and compounds used not found in list above.
CAS Number	Chemical/Compound Name
07732-18-5	Water
00107-21-1	Ethylene Glycol
00111-30-8	Glutaraldehyde
00064-17-5	Ethyl Alcohol
07647-01-0	Hydrochloric Acid
14808-60-7	Sand
64742-47-8	Distillates (petroleum), hydrotreated light (Friction Reducer)
10043-52-4	Calcium chloride
7173-51-5	Didecyldimethylammonium chloride
68424-85-1	Benzalkonium chloride

WW-6B: Depth Specifics

Proposed Post-Construction Elevation:	1108
Proposed Total Vertical Depth:	7108 (ft.)
Formation at Total Vertical Depth:	Marcellus
Proposed Total Measured Depth:	12845 (ft.)
Proposed Total Horizontal Leg Length:	5737 (ft.)
Method to Determine Fresh Water Depth:	
API 47-095-00010 for salt and creek at 840' elevation.	coal.Freshwater was closest
	-

	Approximate Fresh Water Strata Depths	
268	(ft.)	

		Approximate Coal Seam Depths	
602	(ft.)	Coal Seam Name, if known:	
741	(ft.)	Coal Seam Name, if known:	

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835 (f	ft.)	Coal Seam Name, if known:
994 (f	ft.)	Coal Seam Name, if known:
1057 (f	ft.)	Coal Seam Name, if known: Pittsburgh

Approximate Depth to Possible Void(coal mine, karst, other)					
(ft.)	Not Anticipated:				

Approximate Saltwater Depths	
1620 (ft.)	

WW-6B: Casing and Cementing

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Complete the following	g table, adding as m	any rows o	f eacl	n Type as ne	eded.				
Туре	Size (in)	New or Used		Grade	Weight per ft. (lb/ft)		age: For rilling	Intervals: Left in Well	
Conductor 🚽	16	New	J58	5	40	30		30	
	Wellbore Dia	ameter (in)		Wall T	hickness (in)	Burst Pressure (psi)		essure (psi)	
	17 1/2			.495		300	00		
	Cement Ty	ре	Yiel	d (cu. ft./sk)	Fillup - Cubic	Feet	Top of Cemen		
	Class A Cement		1.19		8.22		0	v	
Туре	Size (in) New or Used			Grade	Weight per ft. (lb/ft)		age: For rilling	Intervals: Left in Well	
Fresh Water	11 3/4	New	J58	5	32	318		318	
	Wellbore Dia	ameter (in)		Wall Thickness (in)			Burst Pre	essure (psi)	
	15			.333		1500			
	Cement Type		Yield (cu. ft./sk) Fillup - Cubi		Fillup - Cubic	Feet Top of Cement			
	Class A Cement		1.26 150.79		150.79	0		v	
Туре	Size (in)	New or Used	Grade		Weight per ft. (lb/ft)			Intervals: Left in Well	
Intermediate 💌	8 5/8	New	J55	5	24/23	2000		2000	
	Wellbore Dia	ameter (in)) Wall Thickness (in)			Burst Pressure (psi)			
	11		.264		2500				
	Cement Ty	ре	Yield (cu. ft./sk)		Fillup - Cubic Fee		Top of Cemen		
	Class A Cement		1.45		508.43		0	~	
Туре	Size (in)	New or Used		Grade	Weight per ft. (lb/ft)		age: For rilling	Intervals: Left in Well	
Production -	5 1/2	New	J58	5	20/17	1284	5	12845	
	Wellbore Dia	ameter (in)		Wall Thickness (in)			Burst Pressure (psi)		
	7 7/8			.304		150	15000		

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Cement Type	Yield (cu. ft./sk)	Fillup - Cubic Feet	Top of Cement	Circulated to Surface?
Type 1 Cement	1.34	2225.46	1000	

WW-6B: Centralizers, Cement, Borehole

Describe proposed borehole conditioning procedures.	
Air Hole: 15" hole for the 11 3/4 fresh water case - Circulate until clean with air. If soaping, slug then dry. Air Hole: 11" hole for the 8 5/8 intermediate base - Circulate until clean with air. If soaping, slug then dry. 7 7/8" hole for the 5 1/2 production case - Circulate with mud and sweeps for two times bottoms up. If needed weight up mud until no cuttings retrieved, then circulate with mud and sweeps for two times bottoms up.	*
	-
Centralizers Type and Placement.	
Vertical - Every 500' Bow Centralizer, and 50' from top of ground. Horizontal every 42' Spiral Centralizer, Curve - Every 84' Spiral Centralizer.	*
	-
Cement Additives.	
Superior Well Services - 15" hole for the 11 3/4 fresh water case, Class A Cement, 2% Calcium Chloride, 1/4# flake. Superior Well Services - 11" hole for the 8 5/8 intermediate base, Class A Cement, 2% Calcium Chloride Baker Hughes - 7 7/8" hole for the 5 1/2 production case, Type 1 Cement, Fly Ash, Barite, Finetol 300L, R-3 Celio Flake, Sugar, CD-32, FL-62	*
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WW-6B: Packers

Will Packers be Used? O Yes O No If Yes, complete the following:

Kind	Sizes	Depths Set

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WW-9: Fluids, Cuttings Disposal and Reclamation Plan

State: West Virginia County: Tyler District: 05 Quadrangle: CENTER POINT
Zone: 17 Northing: 4369579.26 Easting: 522459.22
API Number: <u>95-02145</u> Operator Well Number: Sleepy 5
Do you anticipate drilling/redrilling well work?
• Yes O No
Will a pit be used for plugging activities? • Yes • No If so, please describe anticipated pit waste:
Drill Cuttings - Air Drilling Top Hole
Will a synthetic liner be used in the pit? Yes No
If so, what ml.? 60
Proposed Disposal Method For Treated Pit Waste Water:
✓ Underground Injection (UIC Permit Number 47-085-09721)
Reuse (at API Number
✓ Other (explain)
Using Contract Haulers Norte/CES (API's 47-085-05151)
Will closed loop system be used? Yes No
If so, describe:
Centrifuge System (Boss, Newalta) Possible, directional
Drilling medium anticipated for this well (vertical and horizontal)? Air, freshwater, oil based, etc.
Brine Base Drilling Mud
If oil based, what type? Synthetic, petroleum, etc.
Water Based
Additives to be used in drilling medium?

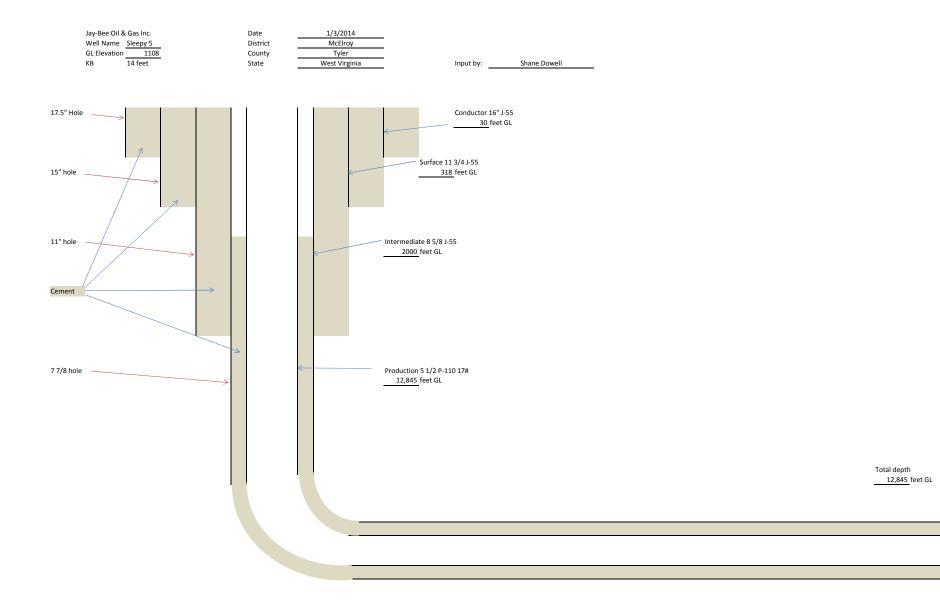
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Bentonite, Salt, Soda Ash	~
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Solid Waste disposal method from Plugging Activities:	
Leave in Pit (Indicate medium used: cement, sawdust, lime, etc):	
Landfill (name/permit number?) Meadowfill/Permit 101219WV	
Removed Offsite (name/permit number?) Meadowfill/Permit 101219WV	
Other: (please explain)	

Proposed Revegetation Treatment:						
Acres Disturbed:	ls_TotalDistbAr	ea	Prevegetation pH:	6.8		
Lime Tons/acre to c	Lime Tons/acre to correct to pH: 3					
Fertilizer (10-20-20 or equivalent): 750 Ibs/acre						
Mulch	Hay 2000	lbs/acre				
Comments:					* *	
Attach a Reclar	mation Plan/Dra	wing				

Seed Mixtures					
Area Type	Seed Type	lbs/acre			
Permanent -	KY-31	20			
Permanent -	Creeping Red Fescue	30			
Permanent -	Lathco Flat Pea/Perennial Ryegrass	30			
Temporary 💌	Annual Ryegrass	40			

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JAY -BEE OIL & GAS INC 3570 SHIELDS HILL RD CAIRO, WV 26337 OFFICE (304) 628-3111 FAX (304) 628-3107

Full copy of Site Safety Plan stored on OOG network drive:

Q://OIL GAS/Permit Scanned Copies

WELL SITE DRILLING PROCEDURES AND SITE SAFETY PLAN Per 35CSR8/§22-6A

(Any changes or modifications to previously approved plans must be approved by the West Virginia Department of Environmental Protection - Office of Oil and Gas)

A copy of this plan will be provided to the local emergency planning committee or county emergency services offices at least 7 days prior to land disturbance from well work.

	STINGSTAUDARDS
Well Name	Sleepy 5
Well Pad	Sleepy (T3036) Pad
Latitude/Longitude	NAD83- Lat. 39.475511 Long80.738874
Location of Access Road	From WV18 and Indian Creek Rd, 6 miles east on Indian Creek Rd. 2.5 miles north on Walnut Fork. Lease road on left.
Detail of Actual Well Work	Drill and Stimulate a New Horizontal Well.
Detail of Completion and Production Activities	Fracturing/ Stimulating Methods 300-350' per stage 8,500bbls of water, 150,000 – 400,000lbs of sand, friction reducer, 1# per gallon, scale inhibitor, and bacteria prevention ¼# per gallon 2000 gallons 15% vol acid.
Directions to Well	From Middlebourne city center, head south down WV 18 for 6.7 miles. Turn left onto Indian Creek Rd, and follow east for 6 miles. Turn left onto Walnut Fork and follow north for 2.5 miles, lease road on left.
Prevailing Wind Direction	South/ South East

SITING STANDARDS

west virginia department of environmental protection



047-095-02145

Operator:

Jay-Bee Oil & Gas, Inc.

Sleepy 5

Important:

For each proposed secondary water source identified in your water management plan (i.e., groundwater well, lake/reservoir, recycled frac water, multi-site impoundment, out-of-state source), DEP makes no estimation of the availability of water. These sources may prove to be unsuitable water supplies. Please review the following notes:

 For groundwater supply wells, DEP recommends that the operator contact the local health department prior to drilling any new well; and reminds the operator that all drinking water wells within 1,500 feet of a water supply well shall be flow- and quality-tested by the operator at the request of the drinking well owner prior to operation of the water supply well.

 For each proposed multi-site impoundment water source identified in your water management plan (if applicable), DEP will review the withdrawal limits established in the referenced Water Management Plan for current suitability and provide to the operator these limits for each identified intake. Note that withdrawal limits may be modified as necessary based on changing demands upon that water supply.

Multi-site impoundment

Source ID:	34230	Source Name	W701 Fresh Wa	iter Centralized I	mpoundment	Source start date: Source end date:	4/1/2014 4/1/2015	
		Source Lat:	39.438678	Source Long:	-80.720864	County	Tyler	
		Max. Daily P	Purchase (gal)		Total Volu	me from Source (gal):	7,845,000	
	DEP Co	mments:	095-FWC-00001					

The intake identified above has been defined in a previous water management plan. The Reference: WMP-577 thresholds established in that plan govern this water management plan unless otherwise noted.

APPROVED FEB 0 3 2014

Sleepy 5

Important:

For each proposed secondary water source identified in your water management plan (i.e., groundwater well, lake/reservoir, recycled frac water, multi-site impoundment, out-of-state source), DEP makes no estimation of the availability of water. These sources may prove to be unsuitable water supplies. Please review the following notes:

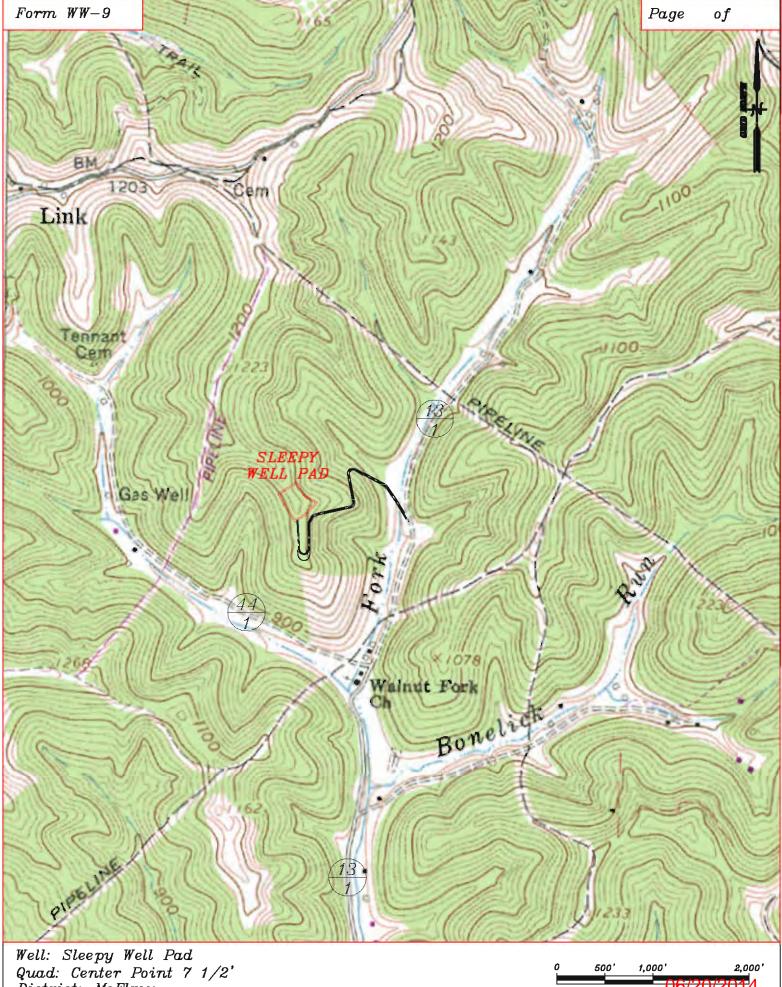
•For groundwater supply wells, DEP recommends that the operator contact the local health department prior to drilling any new well; and reminds the operator that all drinking water wells within 1,500 feet of a water supply well shall be flow- and quality-tested by the operator at the request of the drinking well owner prior to operation of the water supply well.

•For each proposed multi-site impoundment water source identified in your water management plan (if applicable), DEP will review the withdrawal limits established in the referenced Water Management Plan for current suitability and provide to the operator these limits for each identified intake. Note that withdrawal limits may be modified as necessary based on changing demands upon that water supply.

Recycled Frac Water

Source ID:	34231	Source Name	Various		Source start date: Source end date:	4/1/2014 4/1/2015
		Source Lat:		Source Long:	County	
Max. Daily Purchase (gal)				Total Volume from Source (gal):	7,845,000	
DEP Comments:						





District: McElroy County: Tyler

Scale: 1"=1,09/20/2014

