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west virginia department of environmental protection

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Office of Oil and Gas  
601 57<sup>th</sup> Street, S.E.  
Charleston, WV 25304  
(304) 926-0450  
fax: (304) 926-0452

Harold D. Ward, Cabinet Secretary  
[www.dep.wv.gov](http://www.dep.wv.gov)

Wednesday, September 21, 2022  
PERMIT MODIFICATION APPROVAL  
Horizontal 6A / New Drill

SWN PRODUCTION COMPANY, LLC  
POST OFFICE BOX 12359  
SPRING, TX 773914954

Re: Permit Modification Approval for VERNON JOHNSON WTZ 601H  
47-103-03521-00-00

**Well Bore Diagram updated**

SWN PRODUCTION COMPANY, LLC

The Office of Oil and Gas has reviewed the attached permit modification for the above referenced permit. The attached modification has been approved and well work may begin. Please be reminded that the oil and gas inspector is to be notified twenty-four (24) hours before permitted well work is commenced.

If there are any questions, please feel free to contact me at (304) 926- 0450.

  
James A. Martin  
Chief

Operator's Well Number: VERNON JOHNSON WTZ 601H  
Farm Name: VERNON S JOHNSON ESTATE  
U.S. WELL NUMBER: 47-103-03521-00-00  
Horizontal 6A New Drill  
Date Modification Issued: 09/21/2022

Promoting a healthy environment.

09/23/2022

WW-6B  
(04/15)

*Ch#*  
*000W6553*  
*\$5000*

API NO. 47-009 - MOD  
OPERATOR WELL NO. Vernon Johnson WTZ 601H  
Well Pad Name: Vernon Johnson WTZ

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

1) Well Operator: SWN Production Co., LLC 494512924 103-Wetzel 3-Clay 438-Littleton  
Operator ID County District Quadrangle

2) Operator's Well Number: Vernon Johnson WTZ 601H Well Pad Name: Vernon Johnson WTZ

3) Farm Name/Surface Owner: Vernon S. Johnson Estate Public Road Access: Rice Ridge Road

4) Elevation, current ground: 1432' Elevation, proposed post-construction: 1432'

5) Well Type (a) Gas  Oil  Underground Storage

Other \_\_\_\_\_

(b) If Gas Shallow  Deep

Horizontal

6) Existing Pad: Yes or No Yes

7) Proposed Target Formation(s), Depth(s), Anticipated Thickness and Expected Pressure(s):  
Target Formation- Marcellus, Up-Dip well to the North, Target Top TVD- 7663', Target Base TVD-7712', Anticipated Thickness- 49', Associated Pressure- 5013

8) Proposed Total Vertical Depth: 7690'

9) Formation at Total Vertical Depth: Marcellus

10) Proposed Total Measured Depth: 30549'

11) Proposed Horizontal Leg Length: 21687.61'

12) Approximate Fresh Water Strata Depths: 440'

13) Method to Determine Fresh Water Depths: Salinity Profile and Nearby Logs on Vernon Johnson WTZ 10H API 47-103-02714

14) Approximate Saltwater Depths: 1795' Salinity profile analysis and Nearby Logs

15) Approximate Coal Seam Depths: 1277'

16) Approximate Depth to Possible Void (coal mine, karst, other): None that we are aware of.

17) Does Proposed well location contain coal seams directly overlying or adjacent to an active mine? Yes \_\_\_\_\_ No

(a) If Yes, provide Mine Info: Name: \_\_\_\_\_

Depth: \_\_\_\_\_

Seam: \_\_\_\_\_

Owner: \_\_\_\_\_

WV-68  
(04/15)

AP# NO. 47-009

OPERATOR WELL NO. Vernon Johnson WTZ 601H

Well Pad Name: Vernon Johnson WTZ

18)

CASING AND TUBING PROGRAM

TYPE	Size (in)	New or Used	Grade	Weight per ft. (lb/ft)	FOOTAGE, For Drilling (ft)	INTERVALS, Left in Well (ft)	CEMENT, Fill-up (Cu. Ft.)/CTS
Conductor	20"	New	J-55	94#	126'	126'	CTS
Fresh Water	13 3/8"	New	J-55	54.4#	540'	540'	655 sx/CTS
Coal	See	Interm	Casing				
Intermediate	9 5/8"	New	J-55	36#	0'	2600'	1608 sx/CTS
Intermediate	9 5/8"	New	J/K-55	40#	2600'	3177'	
Production	6"	New	P-110	24.5#	0'	5000'	
Production	5 1/2"	New	P-110 HP	20#	5000'	30549'	Total 998 tons/ 100' inside Intermediate

*H. L. Soyak*  
7-7-22

TYPE	Size (in)	Wellbore Diameter (in)	Wall Thickness (in)	Burst Pressure (psi)	Anticipated Max. Internal Pressure (psi)	Cement Type	Cement Yield (cu. ft./k)
Conductor	20"	30"	0.25	2120	81	Class A	1.20/30% Excess
Fresh Water	13 3/8"	17.5"	0.380	2730	633	Class A	1.20/30% Excess
Coal	See	Interm	Casing				
Intermediate	9 5/8"	12 1/4"	0.395	3950	1768	Class A	1.19/40% Excess
Production	5 1/2"	8 3/4"-8 1/2"	0.361	14360	10500	Class A	1.19/5% Excess
Tubing							
Liners							

PACKERS

Kind:				
Sizes:				
Depths Set:				

<b>Southwestern Energy Company</b>	<b>Proposed Drilling Program</b>
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Well: VERNON JOHNSON WTZ 601 Field: VICTORY FIELD WET County: WETZEL SHL: 39.7180 Latitude -80.5458 Longitude BHL: 39.7523 Latitude -80.5991 Longitude KB Elev: 1,458 ft MSL	Re-entry Rig: SDC 41 Prospect: Marcellus Shale State: WV KB: 26 ft AGL GL Elev: 1,432 ft MSL
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No COAL VOID Anticipated

Gas Storage Interval: N/A

PROD TOC Lead @ 3,377' MD

PROD TOC Tail @ 7,222' MD

**TUBULAR DETAIL**

Casing String	Casing Size (in)	Weight (Min)	Grade (Min)	Planned Interval	
				From	To
Conductor	20	94.0 #	J-55	0'	126'
Surface	13.375	54.5 #	J-55	0'	540'
Intm/Coal	9.625	36.0 #	J-55	0'	2,600'
Intermediate	9.625	40.0 #	J/K-55	2,600'	3,177'
Production	6	24.5 #	P-110	0'	5,000'
Production	5.5	20.0 #	P-110 HP	5,000'	30,549'

**CEMENT DETAIL**

	Sacks	Class	Density
Conductor:	151	A	19.3
Surface:	655	A	15.6
Intermediate:	1608	A	15.6-16
Production:	5981	A	15.0-15.6

126' to 560'  
Air/Mist

560' to 3,197'  
Air/Mist

10.5# Brine Mud

3,197' to 7,322'  
Air/Mist

Air  
TD at 7,322'

7,322' to 8,849'  
12.0-12.5 ppg

8,849' to 30,549'  
12.5-13.4 ppg

KOP at 7,322' MD

Freshwater Depth - 440' TVD  
 Coal Depth - 1,277' TVD  
 Saltwater Depth - 1,795' TVD  
 TVD - 7,690'  
 TMD - 30,549'

7,690' Target Center

TD at 30,549' MD  
7,239' TVD

EOB at 8,849' MD

SHL Onondaga 7,712' TVD

Onondaga 7,261' TVD

Kenneth Greynolds

Digitally signed by Kenneth Greynolds  
 DN: cn = Kenneth Greynolds email = kgreynolds@swenergy.com  
 GreynoldsKen gre C = AD O = WVEDP Oil = Oil and Gas  
 Date: 2022.09.23 14:02:23 -0400

September 7, 2022

Mr. Charles Brewer  
Office of Oil & Gas  
601 57<sup>th</sup> Street  
Charleston, WV 25304

**RE: Proposed Expedited Modification:** Vernon Johnson WTZ 201H -103-03517  
Vernon Johnson WTZ 401H -103-03520  
Vernon Johnson WTZ ~~1H~~ - 103-03521  
601H

Dear Mr. Brewer:

Enclosed please find the required documents to modify this well. We would like to modify this well from a gas storage zone to a none gas storage zone. This well is situated on the Johnson's property, in Clay District, Wetzel County, West Virginia.

Enclosed you will find:  
-Updated WBD

If you have any questions or desire additional information, please me at 304 884 1613

Thank you.

Sincerely,



Brittany Woody  
Senior Regulatory Analyst  
Southwestern Energy Production Company, LLC

$\frac{R^2}{A} \rightarrow V^+$



Stansberry, Wade A &lt;wade.a.stansberry@wv.gov&gt;

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**Expedited Modification Horizontal H6A Well Work Permit (47-103-03519, 03520, 03521)**

1 message

**Stansberry, Wade A** <wade.a.stansberry@wv.gov>

Wed, Sep 21, 2022 at 1:00 PM

To: Brittany Woody &lt;Brittany\_Woody@swv.com&gt;, Liz Gee &lt;liz\_gee@swv.com&gt;, Scott Lemley &lt;slemley@wvassessor.com&gt;, "Greynolds, Kenneth L" &lt;kenneth.l.greynolds@wv.gov&gt;

I have attached a copy of the newly issued well [permit](#) number. This will serve as your copy.

**47-103-03519 - VERNON JOHNSON WTZ 201H**  
**47-103-03520 - VERNON JOHNSON WTZ 401H**  
**47-103-03521 - VERNON JOHNSON WTZ 601H**

If you have any questions, then [please](#) contact us here at the Office of Oil and Gas.

Thank you,

**Wade A. Stansberry**

**Environmental Resource Specialist 3**

**West Virginia Department of Environmental Protection**

**Office of Oil & Gas**

**601 57th St. SE**

**Charleston, WV 25304**


**(304) 926-0499 ext. 41115**


**(304) 926-0452 fax**


**[Wade.A.Stansberry@wv.gov](mailto:Wade.A.Stansberry@wv.gov)**

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**3 attachments**

 **47-103-03520 - mod.pdf**  
1800K

 **47-103-03521 - mod.pdf**  
1793K

 **47-103-03519 - mod.pdf**  
2178K

**09/23/2022**