



west virginia department of environmental protection

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

Austin Caperton, Cabinet Secretary
www.dep.wv.gov

Monday, November 16, 2020
PERMIT MODIFICATION APPROVAL
Horizontal 6A / New Drill

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

Re: Permit Modification Approval for OV ROYALTY TRUST LLC BRK 4
47-009-00307-00-00

Cement Yield

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.

A handwritten signature in blue ink, appearing to read 'James A. Martin', is positioned above the printed name and title.

James A. Martin
Chief

Operator's Well Number: OV ROYALTY TRUST LLC BRK 405H
Farm Name: THE GENE CHARLES VALENTINE TRUST DATED
U.S. WELL NUMBER: 47-009-00307-00-00
Horizontal 6A New Drill
Date Modification Issued: 11/16/2020

Promoting a healthy environment.

WW-6B
(04/15)

API NO. 47-009 - 00305 MOD

OPERATOR WELL NO. OV Royalty Trust LLC BRK 405H

Well Pad Name: OV Royalty Trust LLC BRK

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 009- Brooke 02-Cross 620-Steubenville
Operator ID County District Quadrangle

2) Operator's Well Number: OV Royalty Trust LLC BRK 405H Well Pad Name: OV Royalty Trust LLC BRK

3) Farm Name/Surface Owner: The Gene Charles Valentine Trust dated 11/26/86 Public Road Access: Rabbit Hill Road

4) Elevation, current ground: 1181' Elevation, proposed post-construction: 1181' RECEIVED Office of Oil and Gas

5) Well Type (a) Gas Oil Underground Storage NOV 04 2020

Other

(b) If Gas Shallow Deep

Horizontal

WV Department of Environmental Protection

6) Existing Pad: Yes or No Yes

C. Bell 10.15.20

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- 5736', Target Base TVD- 5802', Anticipated Thickness- 66', Associated Pressure- 3772

8) Proposed Total Vertical Depth: 5827'

9) Formation at Total Vertical Depth: Marcellus

10) Proposed Total Measured Depth: 23484'

11) Proposed Horizontal Leg Length: 14671.7'

12) Approximate Fresh Water Strata Depths: 396'

13) Method to Determine Fresh Water Depths: Salinity calculations from OV Royalty 3H logs (API 47-009-00094)

14) Approximate Saltwater Depths: 512' Salinity Profile Analysis

15) Approximate Coal Seam Depths: 236'

16) Approximate Depth to Possible Void (coal mine, karst, other): Possible void 236'

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: Gilchrist and/or Labelle No. 3
Depth: 236'
Seam: Pittsburgh
Owner: OV Royalty Trust LLC

4700900305 mod

WW-6B
(04/15)

API NO. 47- 009 -
OPERATOR WELL NO. OV Royalty Trust LLC BRK 405H
Well Pad Name: OV Royalty Trust LLC BRK

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	H-40	94#	100'	100'	CTS
Fresh Water	13 3/8"	New	H-40	48#	450'	450'	436 sx/CTS
Coal	See	Surface	Casing				
Intermediate	9 5/8"	New	J-55	36#	1557'	1557'	601sx/CTS
Production	5 1/2"	New	HCP-110	20#	18,511'	18,511'	
Tubing							
Liners							

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C. 7510
10-15-20

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	Surface	Casing				
Intermediate	9 5/8"	12 1/4"	0.352	3520	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:				



Check # 1053305
10/27/2020
\$5,000.00

00305 man
9-00305

SWN Production Company, LLC
1300 Fort Pierpont Dr, Ste 201
Morgantown, WV 26508
Tel: 304 884 1610
Fax: 304 471 2497
www.swn.com

November 2, 2020

Ms. Laura Adkins
Office of Oil & Gas
601 57th Street
Charleston, WV 25304

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Office of Oil and Gas

NOV 04 2020

WV Department of
Environmental Protection

RE: Proposed **Expedited Modification:** OV Royalty Trust LLC BRK 405H

Dear Ms. Adkins

Enclosed please find a modification for the above captioned well. We made changes to the cement yield on page two of the 6B per the DEP inspector's request. This well is situated on the OV Royalty's property, in Cross Creek District, Brooke County, West Virginia. Enclosed documents:

-Updated 6B

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

The Right People doing the Right Things,
wisely investing the cash flow from our
underlying Assets, will create Value+[®]