



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

Wednesday, March 25, 2020
PERMIT MODIFICATION APPROVAL
Horizontal 6A / New Drill

SWN PRODUCTION COMPANY, LLC
POST OFFICE BOX 12359

SPRING, TX 773914954

Re: Permit Modification Approval for CHARLES JAMISON 210H
47-051-02302-00-00

Modified 9 5/8" casing which is coal string to 2714',

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: CHARLES JAMISON 210H
Farm Name: CHARLES AND JEAN JAMISON
U.S. WELL NUMBER: 47-051-02302-00-00
Horizontal 6A New Drill
Date Modification Issued: March 25, 2020

Promoting a healthy environment.

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

1) Well Operator: SWN Production Co., LLC

<u>494512924</u>	<u>Marshall</u>	<u>7-Liberty</u>	<u>278-Camerson</u>
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Operator ID County District Quadrangle

2) Operator's Well Number: Charles Jamison MSH 210H Well Pad Name: Charles Jamison MSH

3) Farm Name/Surface Owner: Charles & Jean Jamison Public Road Access: Grapevine Ridge Drive

4) Elevation, current ground: 1358' Elevation, proposed post-construction: 1335'

5) Well Type (a) Gas Oil Underground Storage
Other

(b) If Gas Shallow Deep
Horizontal

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6) Existing Pad: Yes or No No

7) Proposed Target Formation(s), Depth(s), Anticipated Thickness and Expected Pressure(s):
Target Formation- Marcellus, Down-Dip Well to the South, Target Top TVD- 7294', Target Base TVD- 7338', Anticipated Thickness- 44', Associated Pressure- 4770

8) Proposed Total Vertical Depth: 7320'

9) Formation at Total Vertical Depth: Marcellus

10) Proposed Total Measured Depth: 23,929'

11) Proposed Horizontal Leg Length: 15774.32'

12) Approximate Fresh Water Strata Depths: 326'

13) Method to Determine Fresh Water Depths: Covered water wells within radius, unknown depth, surface elevation correlates to 325' TVD, less than alternate min

14) Approximate Saltwater Depths: 1121' Salinity Profile

15) Approximate Coal Seam Depths: 1119'

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: McElroy Mine/Marshall County Mine
Depth: 1060'
Seam: Pittsburgh
Owner: Murray Energy Corporation

18)

CASING AND TUBING PROGRAM

<u>TYPE</u>	<u>Size (in)</u>	<u>New or Used</u>	<u>Grade</u>	<u>Weight per ft. (lb/ft)</u>	<u>FOOTAGE: For Drilling (ft)</u>	<u>INTERVALS: Left in Well (ft)</u>	<u>CEMENT: Fill-up (Cu. Ft.)/CTS</u>
Conductor	20"	New	J-55	94#	100'	100'	CTS
Fresh Water	13 3/8"	New	H-40	48#	440'	440'	427 sx/CTS
Coal	See	Interm	Casing				
Intermediate	9 5/8"	New	J-55	36#	2714'	2714'	1158 sx/CTS
Production	5 1/2"	New	P-110-HP	20#	23,929'	23,929'	lead 473cu tall 4211sq/100' inside
Tubing							
Liners							

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<u>TYPE</u>	<u>Size (in)</u>	<u>Wellbore Diameter (in)</u>	<u>Wall Thickness (in)</u>	<u>Burst Pressure (psi)</u>	<u>Anticipated Max. Internal Pressure (psi)</u>	<u>Cement Type</u>	<u>Cement Yield (cu. ft./k)</u>
Conductor	20"	30"	0.25	2120	81	Class A	1.19/50% Excess
Fresh Water	13 3/8"	17.5"	0.380	2740	633	Class A	1.19/50% Excess
Coal	See	Interm. Casing					
Intermediate	9 5/8"	12 1/4"	0.395	3950	1768	Class A	1.19/50% Excess
Production	5 1/2"	8 3/4"	0.361	12360	9500	Class A	1.20/50% Excess
Tubing							
Liners							

PACKERS

Kind:				
Sizes:				
Depths Set:				

51-02302 MOD

Southwestern Energy Company

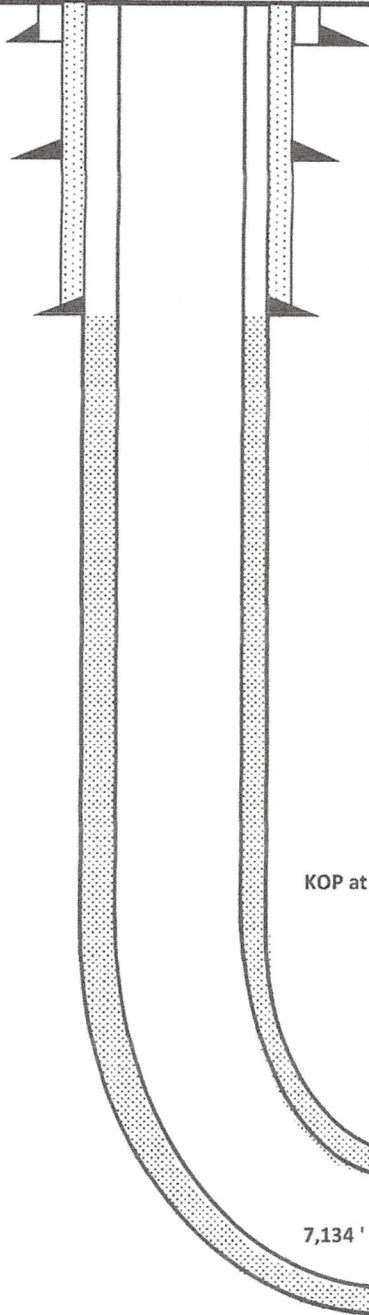
Proposed Drilling Program

Well: CHARLES JAMISON MSH 210
 Field: VICTORY FIELD WET
 County: MARSHALL
 SHL: 39.7919 Latitude -80.6076 Longitude
 BHL: 39.7608 Latitude -80.5763 Longitude
 KB Elev: 1,361 ft MSL KB: 26 ft AGL

Re-entry Rig: SDC 46
 Prospect: VICTORY
 State: WV



GL Elev: 1,335 ft MSL



PROD TOC Lead @ 2,734' MD

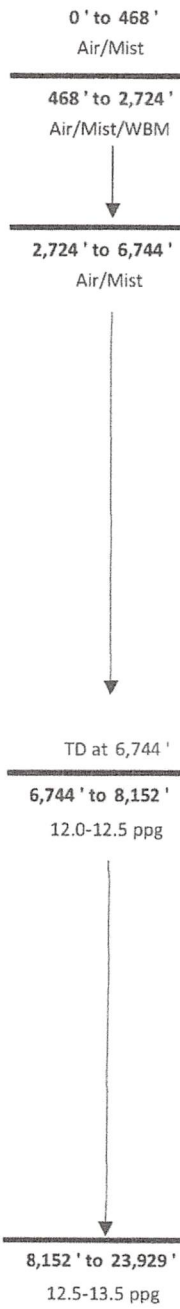
PROD TOC Tail @ 5,100' MD

TUBULAR DETAIL

Casing String	Casing Size (in)	Weight (Min)	Grade (Min)	Planned Interval	
				From	To
Conductor	20	94.0 #	J-55	0'	100'
Surface	13.375	48.0 #	H-40	0'	440'
Intermediate Air	9.625	36.0 #	J-55	0'	2,714'
Production	5.5	20.0 #	P-110 HP	0'	23,929'

CEMENT DETAIL

	Sacks	Class	Density
Conductor:	151	A	19.3
Surface:	427	A	15.6
Intermediate:	1158	A	15.6
Production:	4684	A	15.6



KOP at 6,744' MD

Freshwater Depth - 326' TVD
 Coal Depth - 1,119' TVD
 Saltwater Depth - 1,121' TVD
 TVD - 7,320'
 TMD - 23,929'

7,134' Target Center

TD at 23,929' MD
 7,320' TVD

EOB at 7,134' MD

SHL Onondaga 7,152' TVD

Onondaga 7,338' TVD

8,152' to 23,929'
 12.5-13.5 ppg

JM 3/23/2020

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS
VOLUNTARY STATEMENT OF NO OBJECTION

Instructions to Persons Named on Page WW-6A

The well operator named on page WW-6A is applying for a permit from the State of West Virginia to conduct oil or gas well work. Well work permits are valid for twenty-four (24) months. Please contact the listed well operator and the Office of Oil and Gas if you do not own any interest in the listed surface tract.

Comment and Waiver Provisions

Pursuant to West Virginia Code § 22-6A-11(a), all persons described in subsection (b), section ten of this article may file written comments with the secretary as to the location or construction of the applicant's proposed well work within thirty days after the application is filed with the secretary.

Pursuant to West Virginia Code § 22-6A-8(b) No permit may be issued less than thirty days after the filing date of the application for any well work except plugging or replugging; and no permit for plugging or replugging may be issued less than five days after the filing date of the application except a permit for plugging or replugging a dry hole: *Provided*, That if the applicant certifies that all persons entitled to notice of the application under the provisions of subsection (b), section ten of this article have been served in person or by certified mail, return receipt requested, with a copy of the well work application, including the erosion and sediment control plan, if required, and the well plat, and further files written statements of no objection by all such persons, the secretary may issue the well work permit at any time.

VOLUNTARY STATEMENT OF NO OBJECTION

I, Mason Smith, hereby state that I have read the Instructions to Persons Named on Page WW-6A and the associated provisions listed above, and that I have received copies of a Notice of Application, an Application for a Well Work Permit on Form WW-6A and attachments consisting of pages one (1) through _____, including the erosion and sediment control plan, if required, and the well plat, all for proposed well work on the tract of land as follows:

State:	<u>West Virginia</u>	UTM NAD 83	Easting:	<u>39.791876</u>
County:	<u>Marshall</u>		Northing:	<u>-80.607555</u>
District:	<u>Liberty</u>	Public Road Access:	<u>Grapevine Ridge Drive</u>	
Quadrangle:	<u>Cameron</u>	Generally used farm name:	<u>Charles Jamison MSH</u>	
Watershed:	<u>Maggoty Run</u>			

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.

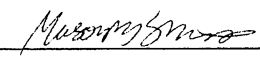
- *Please check the box that applies
- SURFACE OWNER
 - SURFACE OWNER (Road and/or Other Disturbance)
 - SURFACE OWNER (Impoundments/Pits)
 - COAL OWNER OR LESSEE
 - COAL OPERATOR
 - WATER PURVEYOR
 - OPERATOR OF ANY NATURAL GAS STORAGE FIELD

FOR EXECUTION BY A NATURAL PERSON

Signature: _____
Print Name: _____
Date: _____

FOR EXECUTION BY A CORPORATION, ETC.

Company: Consolidation Coal Company
By: Mason Smith
Its: Coal, Oil and Gas Relations Manager

Signature: 
Date: 03/24/2020

Oil and Gas Privacy Notice:

The Office of Oil and Gas processes your personal information, such as name, address and telephone number, as 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 or your personal information, please contact DEP's Chief Privacy Officer at depprivacyofficer@wv.gov.