

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

Thursday, November 8, 2018 PERMIT MODIFICATION APPROVAL Horizontal 6A / New Drill

SWN PRODUCTION COMPANY, LLC POST OFFICE BOX 12359

SPRING, TX 773914954

Permit Modification Approval for DALLAS HALL OHI 3H Re:

47-069-00271-00-00

Lateral Extension

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: DALLAS HALL OHI 3H

Farm Name: HALL AGNES L

U.S. WELL NUMBER: 47-069-00271-00-00

Horizontal 6A New Drill

Date Modification Issued: November 08, 2018

Promoting a healthy environment.

OPERATOR WELL NO. 100 OPERATOR WELL NO. 100

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

1) Well Operator: SWN Pro	duction Co., LLC	494512924	069-Ohio	3-Liberty 247-Bethany
		Operator ID	County	District Quadrangle
2) Operator's Well Number: [Dallas Hall OHI 3H	H Well P	ad Name: Dall	as Hall OHI Pad
3) Farm Name/Surface Owner	Agnes L. Hall	Public R	oad Access: G	C & P Road
4) Elevation, current ground:	1275' E	levation, propose	d post-construc	tion: 1275'
5) Well Type (a) Gas X Other	Oil	Ur	derground Stor	age
(b)If Gas S	hallow X	Deep	,	
H 6) Existing Pad: Yes or No Y	Iorizontal X 'es			- 8 6.4.18
7) Proposed Target Formation Target Formation- Marcellus Up-Dip We			The state of the s	Pressure(s): ad Thickness- 46', Associated Pressure- 4003
8) Proposed Total Vertical De	pth: 6134' at the	heel (LP deepe	est TVD)	
9) Formation at Total Vertical				
10) Proposed Total Measured	Depth: 16,272'			
11) Proposed Horizontal Leg	Length: 9784.87'			RECEIVED Office of Oil and Gas
12) Approximate Fresh Water	Strata Depths:	410'		JUN 1 8 2018
13) Method to Determine Fres 14) Approximate Saltwater De		nearby water we y profile	ell	WV Department of Environmental Protection
15) Approximate Coal Seam I	Depths: 446'			
16) Approximate Depth to Po	ssible Void (coal m	nine, karst, other)	Possible Voi	d 446'.
17) Does Proposed well locati directly overlying or adjacent		Yes	N	Io X
(a) If Yes, provide Mine Info	o: Name:			
	Depth:			
	Seam:			
	Owner:			

API NO. 47- 069 -

0071/09/2018

OPERATOR WELL NO. Dallas Hall OHI 3H

Well Pad Name: Dallas Hall OHI Pad

18)

CASING AND TUBING PROGRAM

ТҮРЕ	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#	520'	520'	497 sx/CTS
Coal							
Intermediate	9 5/8"	New	J-55	36#	1920'	1920'	739 sx/CTS
Production	5 1/2"	New	HCP-110	20#	16,272'	16,272'	lead 767 sx Tell 2486 sx inside intermedia
Tubing							
Liners							

C-1560 6.4.18

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	1.19/50% Excess
Fresh Water	13 3/8"	17.5"	0.380	2740	633	Class A	1.19/50% Excess
Coal	9 5/8"	12 1/4"	0.395	3950	1768	Class A	1.19/50% Excess
Intermediate	7"	8 3/4"	0.317	4360	3250	Class A	1.20/50% 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:			

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API NO. 47- 069	<u>00</u>	2111	<u>/09/20</u> 3	8
OPERATOR WELL	NO.	Dallas	Hall OHI 3H	

Well Pad Name: Dallas Hall OHI Pad

19) Describe	proposed	well work.	including	g the drilling	g and p	lugging	back o	f any i	oilot hole:
	,	P P	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	,	,	P			, ,	

Drill and stimulate any potential zones between and including the Benson to Marcellus. **If we should encounter a void place basket above and below void area- balance cement to bottom of void and grout from basket to surface or run external casing packer/cementing stage tool above void interval and perform 2 stage cementing operation dependent upon depth of void. Run casing not less than 20' below void nor more than 75' below void. (*If freshwater is encountered deeper than anticipated it must be protected, set casing 50' below and cts.)

20) Describe fracturing/stimulating methods in detail, including anticipated max pressure and max rate:

Well will be perforated within the target formation and stimulated with a slurry of water, sand, and chemical additives at a high rate. This will be performed in stages with the plug and perf method along the wellbore until the entire lateral has been stimulated within the target formation. All stage plugs are then drilled out and the well is flowed back to surface. The well is produced through surface facilities consisting of high pressure production unites, vertical separation units, water and oil storage tanks. Max press and anticipated max rate- 9000 lbs @ 100 barrels a minute.

21) Total Area to be disturbed, including roads, stockpile area, pits,	etc., (acres): 22.60
22) Area to be disturbed for well pad only, less access road (acres):	8.54
23) Describe centralizer placement for each casing string:	
All casing strings will be ran with a centralizer at a minimum of	1 per every 3 joints of casing.
24) Describe all cement additives associated with each cement type:	
See Attachment ***	

25) Proposed borehole conditioning procedures:

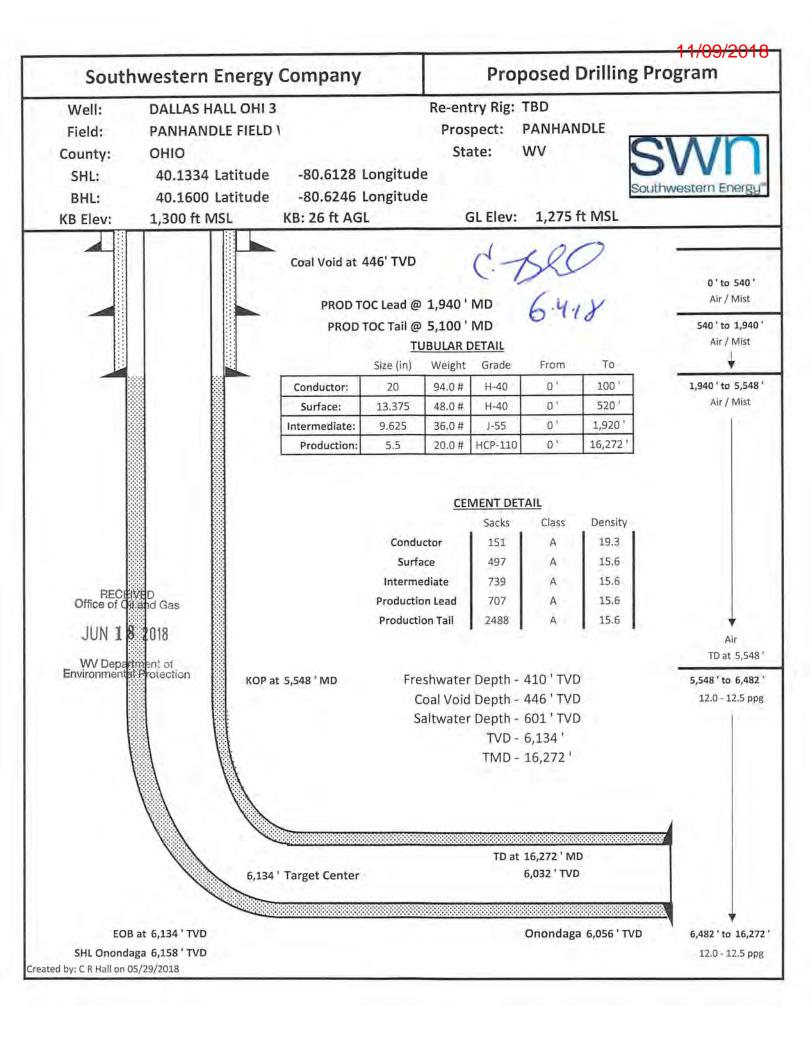
All boreholes will be conditioned with circulation and rotation for a minimum of one bottoms up and continuing until operator is satisfied with borehole conditions.

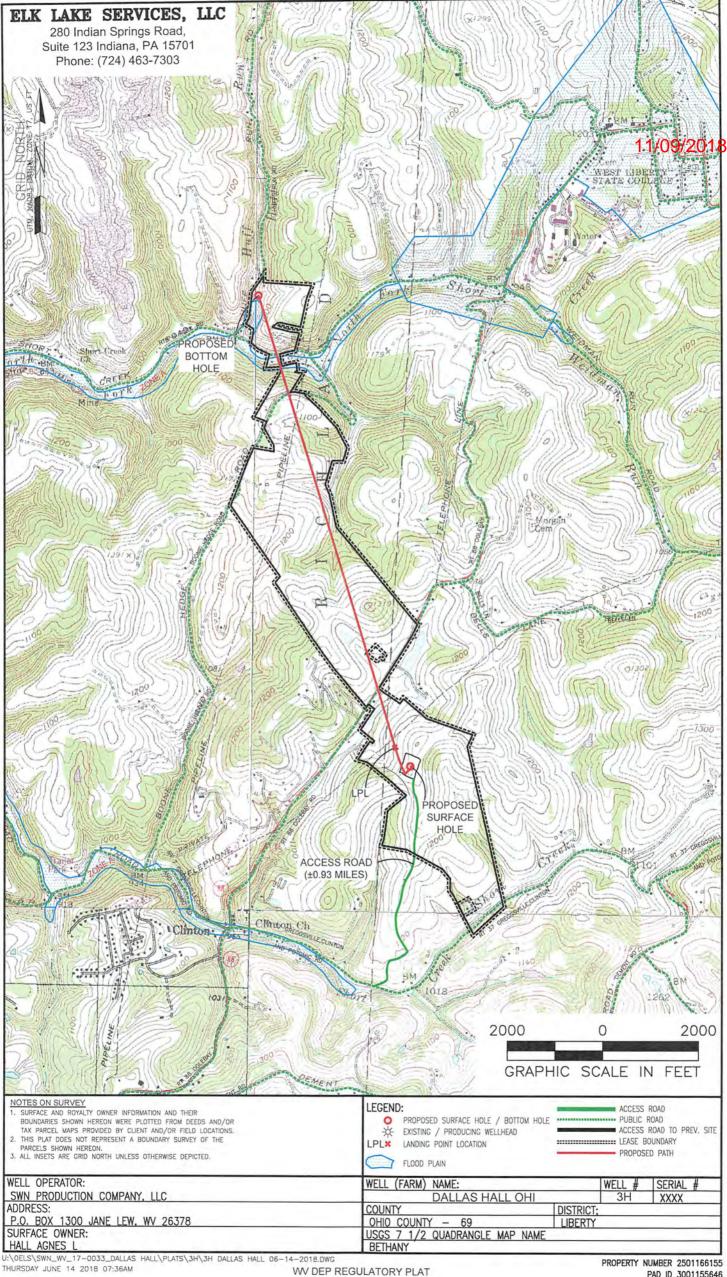
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W Department of Environmental Protection

*Note: Attach additional sheets as needed.







69-06 271 MOD 11/09/2018

SWN Production Company, LLC P O Box 12359 Spring, Texas 77391-2359 www.swn.com

June 14, 2018

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

RE: SWN's proposed New Well: Dallas Hall OHI 3H in Ohio County, West Virginia, Drilling under RT9 N Fork Road, Boone Hedge Road, and RT 88 Oglebay Road.

Dear Ms. Adkins:

SWN Production Company, LLC ("SWN") is applying for a drilling permit for the above referenced well. The State of West Virginia has raised some concern as to SWN's right to drill under RT9 N Fork Road, Boone Hedge Road, and RT 88 Oglebay Road. Please be advised that SWN has leased all mineral owners under said route as it relates to the above-referenced well and unit.

Thank you.

Sincerely,

Bradley Wilson

Landman

SWN Production Company, LLC

PO Box 12359

Spring, TX 77391-2359

10000 Energy Drive Spring, TX 77389-4954 R- NV+

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

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JUN 18 2018

WV Department of Environmental Protection WW-6A1 (5/13) Operator's Well No. Dallas Hall OHI 3H

INFORMATION SUPPLIED UNDER WEST VIRGINIA CODE Chapter 22, Article 6A, Section 5(a)(5) 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 -

- 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:

Number	Grantor, Lessor, etc.	Grantee, Lessee, etc.	Royalty	Book/Page
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See Exhibit

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 hereby acknowledges 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 acquired from the appropriate authority before the affected activity is initiated.

Well Operator:	SWN Production Company, LLC.	
By:	KOSI	
Its:	Landman	

Page 1 of ____

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WW Department of Environmental Protection

3102 8 I NUL

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EXHIBIT "A"

Attached to and made a part of the State of West Virginia Oil and Gas Permit Form, WW-6A1, by SWN Production Company, L.L.C., Operator Dallas Hall OHI 3H

Ohio County, West Virginia

#	TMP	LESSOR	LESSEE	ROYALTY	BK/PG
1)	3-L7-19	Dallas J. Hall and Agnes L. Hall, husband and wife	Chesapeake Appalachia, L.L.C.	18.5%	811/34
			SWN Production Company, LLC		884/61
2)	4-R12B-1	Matthew Harry Gossett, a married man dealing in his sole and	Chesapeake Appalachia, L.L.C.	18.0%	811/261
		separate property	SWN Production Company, LLC		884/169
3)	3-L4-24	Anna Mae Miller, a widow	Chesapeake Appalachia, L.L.C.	18.0%	818/568
			SWN Production Company, LLC		885/632
4)	3-L4-24-1	Anna Mae Miller, a widow	Chesapeake Appalachia, L.L.C.	18.0%	818/568
			SWN Production Company, LLC		885/632
5)	3-L4-24-2	Anna Mae Miller, a widow	Chesapeake Appalachia, L.L.C.	18.0%	818/568
			SWN Production Company, LLC		885/632
6)	3-L4-22	David Glenn Ruthers and Linda F. Ruthers, husband and wife	Chesapeake Appalachia, L.L.C.	18.0%	815/718
			SWN Production Company, LLC		883/587
7)	3-L4-1-1	Rome H. Brown and Lillian W. Brown, his wife	Great Lakes Energy Partners, LLC	15.5%	768/508
			Chesapeake Appalachia, L.L.C.		808/434
			SWN Production Company, LLC		883/527
		Robert O. Rogers, married man dealing in his sole and separate property	SWN Production Company, LLC	18.0%	902/502
		Wheeling Young Men's Christian Association	SWN Production Company, LLC	18.0%	926/299
		Ohio Valley Medical Center, Inc.; The Parks System Trust Fund of	SWN Production Company, LLC	18.0%	908/708
		Wheeling; Children's Home of Wheeling, Inc.; Elmhurst, the House			
		of Friendship, Inc., Vance Memorial Presbyterian Church; Young			
		Women's Christian Association of Wheeling, W. Va., Inc.			

EXHIBIT "A"

Attached to and made a part of the State of West Virginia Oil and Gas Permit Form, WW-6A1, by SWN Production Company, L.L.C., Operator Dallas Hall OHI 3H

Ohio County, West Virginia

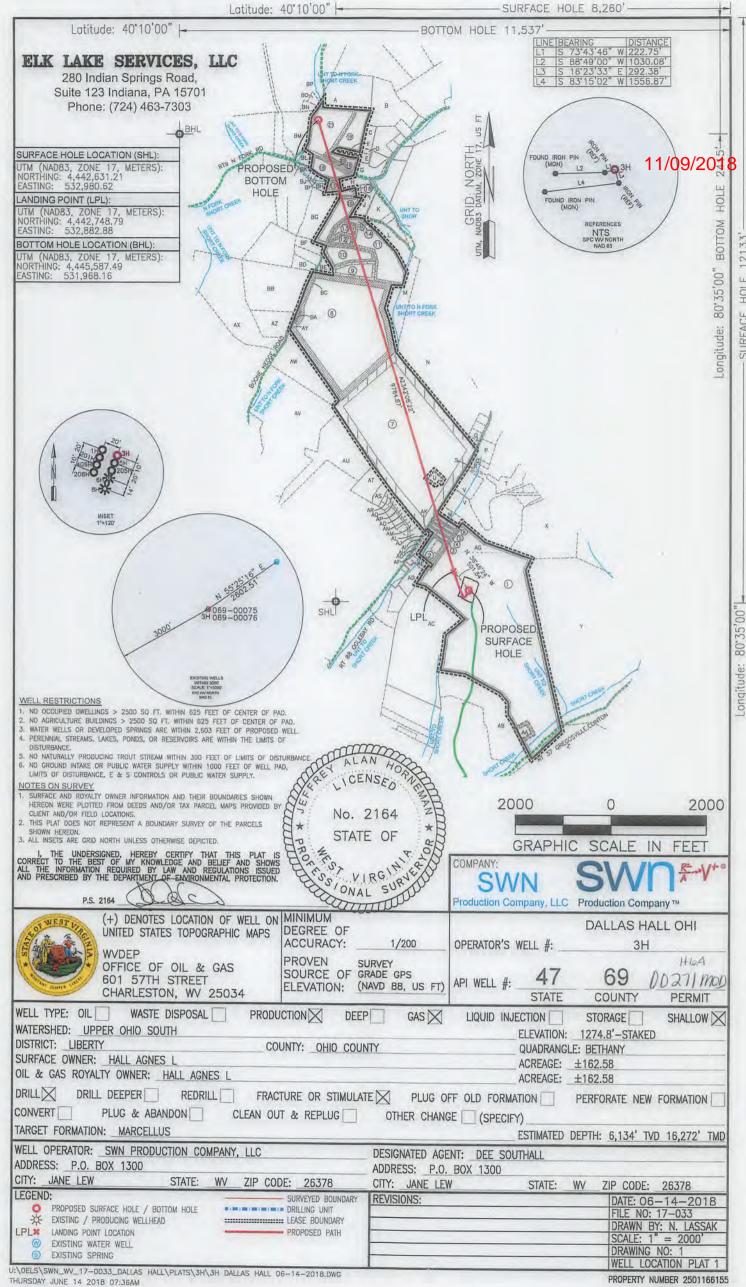
		Onio County, West Virg	•		
8)	4-R9-3	Claire M. Caveney, married woman dealing in her sole and separate property	Chesapeake Appaiachia, L.L.C.	18.0%	826/773
			SWN Production Company, LLC		884/717
		Robert O. Rogers, married man dealing in his sole and separate property	SWN Production Company, LLC	18.0%	902/502
		Ohio Valley Medical Center, Inc.; The Parks System Trust Fund of Wheeling; Children's Home of Wheeling, Inc.; Elmhurst, the House of Friendship, Inc., Vance Memorial Presbyterian Church; Young Women's Christian Association of Wheeling, W. Va., Inc.	SWN Production Company, LLC	18.0%	908/708
		Wheeling Young Men's Christian Association	SWN Production Company, LLC	18.0%	926/299
9)	4-R9-22-15	Mark J. Swiger and Dawn S. Swiger, husband and wife	Chesapeake Appalachia, L.L.C.	18.0%	817/395
			SWN Production Company, LLC		884/529
10)	4-R9-22-16	Howard A. Walls III and Terry L. Walls, husband and wife	Chesapeake Appalachia, L.L.C.	18.0%	828/338
			SWN Production Company, LLC		884/717
11)	4-R9-22-20	John C. Ratcliffe and Kathy J. Ratcliffe, husband and wife	Chesapeake Appalachia, L.L.C.	18.0%	814/650
			SWN Production Company, LLC		884/205
12)	4-R9-22-17	John C. Ratcliffe and Kathy J. Ratcliffe, husband and wife	Chesapeake Appalachia, L.L.C.	18.0%	814/662
			SWN Production Company, LLC		884/205
13)	4-R9-22-18	Jeffrey C. Taylor and Ginger K. Taylor, husband and wife	Chesapeake Appalachia, L.L.C.	18.0%	815/124
			SWN Production Company, LLC		884/373

EXHIBIT "A"

Attached to and made a part of the State of West Virginia Oil and Gas Permit Form, WW-6A1, by SWN Production Company, L.L.C., Operator Dallas Hall OHI 3H

Ohio County, West Virginia

14)	4-R9-20	Jeffrey C. Taylor and Ginger K. Taylor, husband and wife	Chesapeake Appalachia, L.L.C.	18.0%	815/158
			SWN Production Company, LLC		884/373
15)	4-R9-22-8	Rodney W. Haley and Rhonda L. Haley, husband and wife	Chesapeake Appalachia, L.L.C.	18.0%	812/254
			SWN Production Company, LLC		884/181
16)	4-R9-19	Kenneth R. Barnes a/k/a Kenneth Robert Barnes and Judith D. Barnes a/k/a Judith Darlene Barnes, husband and wife	Chesapeake Appalachia, L.L.C.	15.0%	827/671
			SWN Production Company, LLC		844/717
17)	4-R6-39-1	Daniel J. Strnad and Amanda A. Strnad, husband and wife	Chesapeake Appalachia, L.L.C.	18.0%	829/140
			SWN Production Company, LLC		884/717
18)	4-R6-29	Leslie A. Hunt, a widower	Chesapeake Appalachia, L.L.C.	12.5%	829/759
			SWN Production Company, LLC		884/729
19)	4-R6-28-6	Nicole L. Carenbauer, a single woman	SWN Production Company, LLC	18.0%	929/79
20)	4-R6-28-7	Douglas A. Hudson and Jacqueline R. Hudson, husband and wife	SWN Production Company, LLC	16.0%	927/655
21)	4-R6-24-3	Windell Goff and Gladys Goff, husband and wife	Chesapeake Appalachia, L.L.C.	18.0%	813/682
			SWN Production Company, LLC		884/421



PAD ID 3001155646

ELK LAKE SERVICES, LLC

280 Indian Springs Road, Suite 123 Indiana, PA 15701 Phone: (724) 463-7303

	WELL BORE TABLE FOR SURFACE / ROYALTY	
TRACT	SURFACE OWNER / ROYALTY OWNER	TAX PARCEL
1	AGNES L HALL	3-L7-0019
TRACT	SURFACE OWNER	TAX PARCEL
2	MATTHEW H GOSSETT	4-R12B-1
3	GEORGE STROMATOS	3-L4-24
4	GEORGE STROMATOS	3-L4-24-1
5	GEORGE STROMATOS	4-L4-24-2
6	DAVID & LINDA RUTHERS	3-L4-22
7	TRUST FOR LILLIAN W BROWN	3-L4-1-1
8	CLAIRE M CAVENEY	4-R9-3
9	MARK & DAWN SWIGER	4-R9-22-1
10	GEORGE & CAROL WOOD	4-R9-22-1
11	JOHN C & KATHY J RATCLIFFE	4-R9-22-2
12	JOHN C & KATHY J RATCLIFFE	4-R9-22-1
13	JEFFREY C & GINGER K TAYLOR	4-R9-22-1
14	JEFFREY C & GINGER K TAYLOR	4-R9-20
15	RODNEY & RHONDA HALEY	4-R9-22-8
16	JOSHUA M KLAPKA	4-R9-19
17	BRANDON C & CYNTHIA A GALLOWAY	4-R6-39-1
18	LESLIE A HUNT	4-R6-29
19	NICOLE L CARENBAUER	4-R6-28-6
20	DOUGLAS A & JACQUELINE R HUDSON	4-R6-28-7
21	WINDELL H II & GLADYS GOFF	4-R6-24-3

	ADJOINING OWNERS TABLE	11/09/2
TRACT	SURFACE OWNER	TAX PARCEL
A	WINDELL H II & GLADYS GOFF	4-R6-27.1
В	CRABTREE, RANDALL L & KOVALSKI CYNTHIA S	4-R6-27.3
C	CRABTREE, RANDALL	4-R6-28.8
D	CRABTREE, RANDALL	4-R6-28.9
E	RALPH & GRACE ROBINSON	4-R6-28.2
F	HUDSON DOUGLAS & JACQUELINE	4-R6-28.3
G	RALPH & GRACE ROBINSON	4-R6-27
Н		4-R6-40
	ROBERT & JENNIFER JEWELL	4-R9-18
	VELMA L TAGGART	
J	LARRY & TERRY BOYNES	4-R9-22-9
K	CARLA DIETRICH	4-R9-21-1
L	JOHN C RATCLIFFE	4-R9-22-21
M	PAUL & DEBORAH MCKAY	4-R9-51
N	PAUL & DEBORAH MCKAY	3-L4-1
0	REBECCA L BLAKE	3-L4-1-7
Р	PAUL & DEBORAH MCKAY	3-L4-10-1
Q	PAUL & DEBORAH MCKAY	3-L4-10
R	JAMES & ANN ROSE	3-L4-12
	JAMES & ANN ROSE	3-L4-14
S		
T	DAVID & BETH WEAVER	3-L4-13
U	ROBERT E BROWN	3-L4-1-3
V	DAVID & BETH WEAVER	3-L4-15
W	YE M HLA (AKA DANIEL HLA) & EI E MYINT	3-L4-20
X	DAVID & CATHERINE EVANS	3-L4-13-1
Y	MARY HELEN CLISER	3-L7-2
Z	LINDA WHITAKER, TRUSTEE FOR THE WHITAKER FAMILY TRUST	3-L7-27
AA	AGNES L HALL	3-L7-1
AB	AGNES L HALL	3-L7-20
AC	AGNES L HALL	3-L7-21-1
AD	JOHN & T A PYLE	4-R12B-1-1
AE	STEVE KELLAS	4-R12B-1-5
AF	MARK A KOZUSNIK	4-R12B-1-8
AG	DAVID & ESTELLA TAYLOR	4-R12B-4
AH	DAVID & ESTELLA TAYLOR	4-R12B-1-7
Al	PATRICIA MERCER	4-R12B-3
AJ		The state of the s
AK	LARRY & JANE BECK	4-R12B-7
AL	ERIC BLEND	4-R12B-2
0.10	JAMES & KAREN FRIO	4-R9-47
AM	STEPHANIE A WARREN & WILLIAM S LITMAN	4-R9-46
AN	DAVID & TERRI SONNEFELD	4-R9-45
AO	DAVID & TERRI SONNEFELD	4-R9-44
AP	TYLER P BECK	4-R9-43
AQ	MARK E & JL PISSOS	4-R9-42
AR	GARY & CM LATOS	4-R9-41
AS	CLARK & SHARON PAJAK	4-R9-32-1
AT	CLARK & SHARON PAJAK	4-R9-28
AU	RCK 2 GROUP LLC KAYLEEN FITZSIMMONS	4-R9-27
	STACEY D EVANS	
AV	WESBANCO TRUST & INVESTMENT SERVICE, TRUSTEE OF THE MARY JACQUELINE CARENBAUER TRUST	4-R9-3-5 4-R9-16-1
AX	JORDAN & GAYLE WEBER	
		4-R9-9
AY	CLAIRE M CAVENEY	4-R9-10-2
AZ	DAVID & LM MAIN	4-R9-10
BA	DAVID B & LISA M MAIN	4-R9-3-6
BB	DAVID & LM MAIN	4-R9-10-1
BC	CLAIRE CAVENEY	4-R9-10-3
BD	CHARLES & PHYLLIS KELLAM	4-R9-22-1
BE	MARK & DAWN SWIGER	4-R9-22-14
BF	CHARLES & PHYLISS KELLAM	4-R9-22-1
BG		THE RESERVE AND A SECOND SECON
BH	JAMES & KATHY WEST	4-R9-22-7
	BRANDON & CYNTHIA GALLOWAY	4-R6-39-2
BI	EDWARD SMITH	4-R6-39-4
BJ	ROBERT OCHSENBEIN	4-R6-39-3
BK	JUSTINE D CRUPE	4-R6-38
BL	RANDALL LEE CRABTREE	4-R6-24
ВМ	WOOD, RICHARD A JR	4-R6-24.6
	WINDSOR COAL COMPANY	4-R6-25
BN		
BO	BRYAN, STELLA M, KATHLEEN J	4-R6-17.1

47-069-00271MOD

REVISIONS:	COMPANY:	SWN Production Company, LLC	SVN A V+° Production Company™	
	OPERATOR'S WELL #:	DALLAS HALL 3H		DATE: 06-14-2018 FILE NO: 17-033 DRAWN BY: N. LASSAK
	DISTRICT: LIBERTY	COUNTY: OHIO COUNTY	STATE: WV	SCALE: N/A DRAWING NO: 1



SWN Produ4t//09/20118: 179 Innovation Drive Jane Lew, WV 26378 Tel: 304 884 1610 Fax: 304 471 2497 www.swn.com

June 15, 2018

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

RE: Modification: Dallas Hall OHI 3H

Dear Ms. Adkins

Enclosed please find the new 6B, WBD, plat, and 6A1 for the above captioned well. We are extending the lateral. These wells are situated on the Hall's property, in Ohio County, West Virginia.

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

Thank you.

Sincerely,

Brittany Woody

Regulatory Analyst

Southwestern Energy Production Company, LLC

RECEIVED Office of Oil and Gas

JUN 18 2018

WV Department of Environmental Protection

R2 wV+