



west virginia department of environmental protection

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

Austin Caperton, Cabinet Secretary  
[www.dep.wv.gov](http://www.dep.wv.gov)

Thursday, October 25, 2018  
PERMIT MODIFICATION APPROVAL  
Horizontal 6A / New Drill

SWN PRODUCTION COMPANY, LLC  
POST OFFICE BOX 12359

SPRING, TX 773914954

Re: Permit Modification Approval for MICHAEL RATCLIFFE OHI 10H  
47-069-00276-00-00

Modified lateral for a horizontal length of 16,598.98' and a TMD of 26,749'.

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 written over a blue circular stamp.

James A. Martin  
Chief

Operator's Well Number: MICHAEL RATCLIFFE OHI 10H  
Farm Name: MICHAEL T. RATCLIFFE  
U.S. WELL NUMBER: 47-069-00276-00-00  
Horizontal 6A New Drill  
Date Modification Issued: October 25, 2018

Promoting a healthy environment.

A

WW-6B  
(04/15)

API NO. 47-069 - 00276 MOH  
OPERATOR WELL NO. Michael Ratcliffe OHI 10H  
Well Pad Name: Michael Ratcliffe OHI Pad

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 069-Ohio Liberty Bethany  
Operator ID County District Quadrangle

2) Operator's Well Number: Michael Ratcliffe OHI 10H Well Pad Name: Michael Ratcliffe OHI Pad

3) Farm Name/Surface Owner: Michael T. Ratcliffe Public Road Access: Long Run Road

4) Elevation, current ground: 1281' Elevation, proposed post-construction: 1281'

5) Well Type (a) Gas X Oil Underground Storage  
Other  
(b) If Gas Shallow X Deep  
Horizontal X

6) Existing Pad: Yes or No Yes *C. BLO 8.27.18*

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- 6531', Target Base TVD- 6572', Anticipated Thickness- 41', Associated Pressure- 4274

8) Proposed Total Vertical Depth: 6546' ✓

9) Formation at Total Vertical Depth: Marcellus

10) Proposed Total Measured Depth: 23,749' ✓

11) Proposed Horizontal Leg Length: 16,598.98' ✓

12) Approximate Fresh Water Strata Depths: 401' ✓

13) Method to Determine Fresh Water Depths: Nearby Water Well

14) Approximate Saltwater Depths: 754' salinity profile

15) Approximate Coal Seam Depths: 610'

16) Approximate Depth to Possible Void (coal mine, karst, other): Possible void 610'

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

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

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WW-6B  
(04/15)

API NO. 47-069 - 00276 New  
 OPERATOR WELL NO. Michael Ratcliffe OH 10H  
 Well Pad Name: Michael Ratcliffe OH-1 Pad

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#	665'	665'	623 sx/CTS
Coal	See	Surface	Casing				
Intermediate	9 5/8"	New	J-55	36#	1995'	1995'	757 sx/CTS
Production	5 1/2"	New	HCP-110	20#	23,749'	23,749'	1045 sx/CTS
Tubing							
Liners							

C. J. 8.27.18

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	See	Surface	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:				

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19) Describe proposed well work, including the drilling and plugging back of any pilot hole:

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, horizontal 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): 13.48

22) Area to be disturbed for well pad only, less access road (acres): 8.60

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.

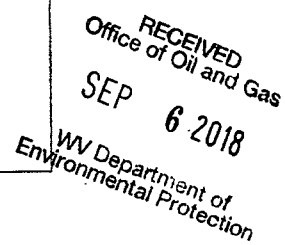
24) Describe all cement additives associated with each cement type:

See Attachment \*\*\*

25) Proposed borehole conditioning procedures:

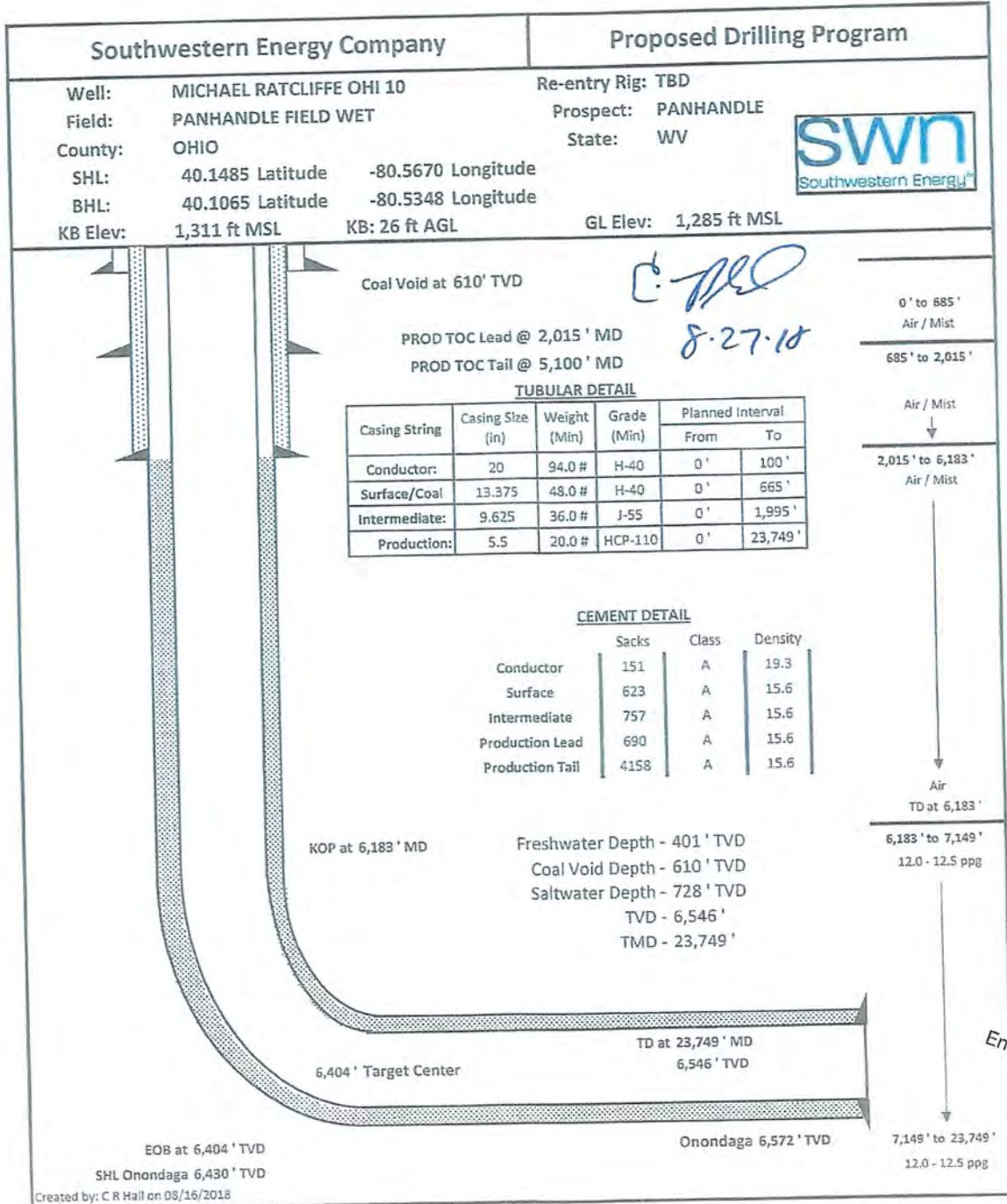
All boreholes will be conditioned with circulation and rotation for a minimum of one bottoms up and continuing until operator is satisfied with borehole conditions.

\*Note: Attach additional sheets as needed.

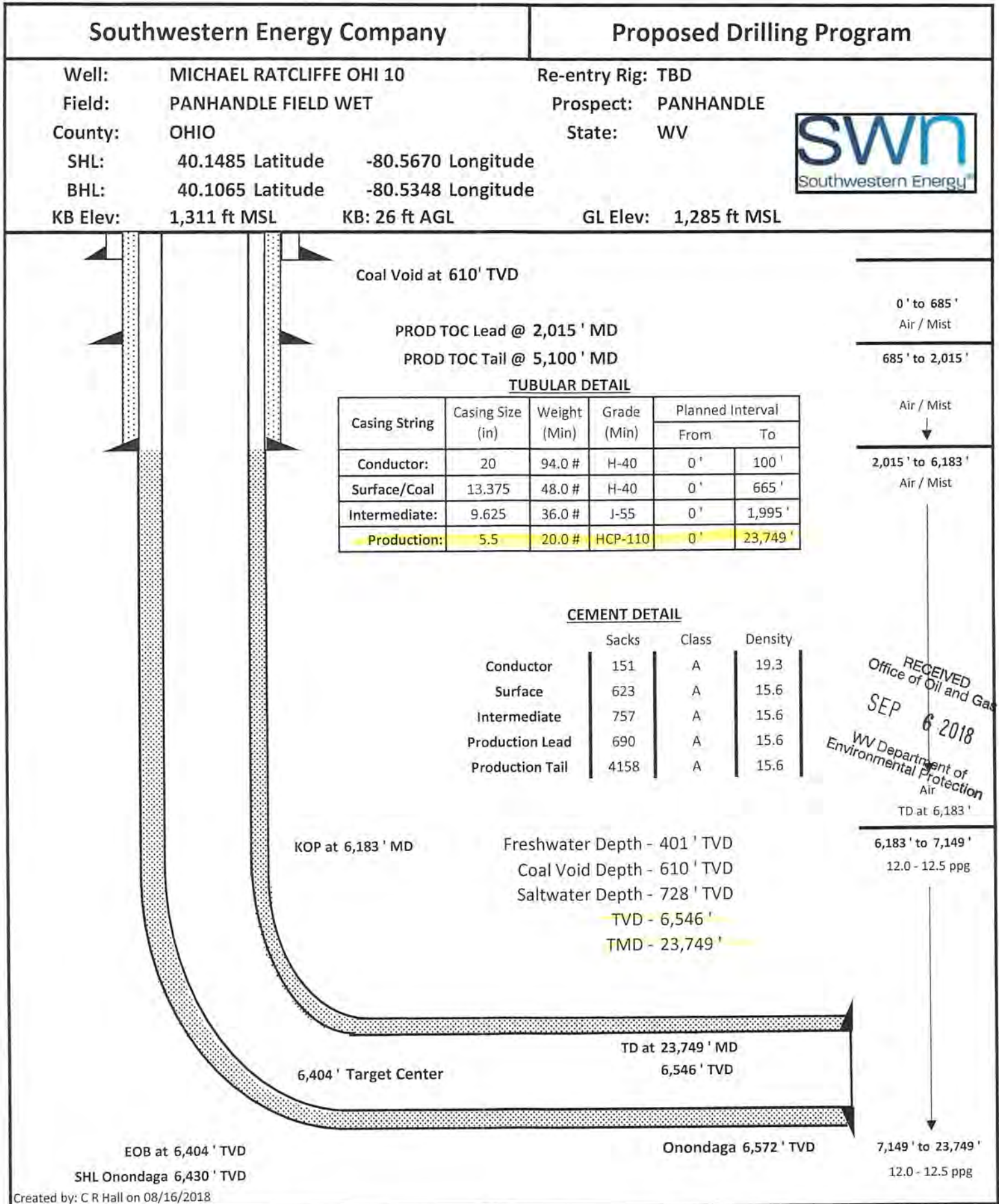




69-00276 MWV



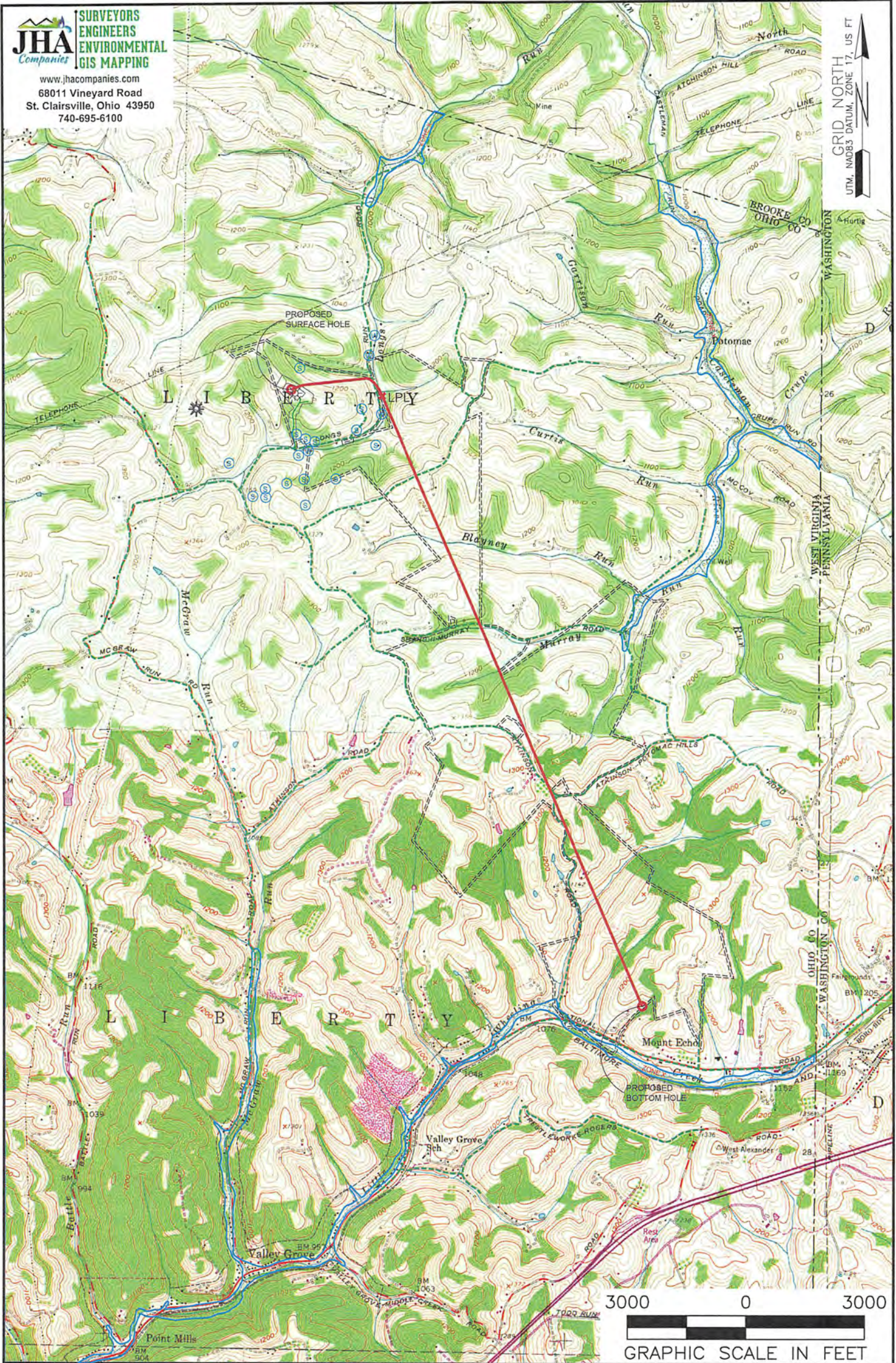
69-00276 MOD





**JHA Companies**  
**SURVEYORS ENGINEERS ENVIRONMENTAL GIS MAPPING**  
 www.jhacompanies.com  
 68011 Vineyard Road  
 St. Clairsville, Ohio 43950  
 740-695-6100

GRID NORTH  
 UTM, NAD83 DATUM, ZONE 17, US FT



**NOTES ON SURVEY**

1. SURFACE AND ROYALTY OWNER INFORMATION AND THEIR BOUNDARIES SHOWN HEREON WERE PLOTTED FROM DEEDS AND/OR TAX PARCEL MAPS PROVIDED BY CLIENT AND/OR FIELD LOCATIONS.
2. THIS PLAT DOES NOT REPRESENT A BOUNDARY SURVEY OF THE PARCELS SHOWN HEREON.
3. ALL INSETS ARE GRID NORTH UNLESS OTHERWISE DEPICTED.

**LEGEND:**

- PROPOSED SURFACE HOLE / BOTTOM HOLE
- EXISTING / PRODUCING WELLHEAD
- LANDING POINT LOCATION
- FLOOD PLAIN
- ACCESS ROAD
- PUBLIC ROAD
- ACCESS ROAD TO PREV. SITE
- LEASE BOUNDARY
- PROPOSED PATH

WELL OPERATOR: SWN PRODUCTION COMPANY, LLC	WELL (FARM) NAME: MICHAEL RATCLIFFE OHI	WELL # 10H	SERIAL # XXXX
ADDRESS: P.O. BOX 1300 JANE LEW, WV 26378	COUNTY - CODE OHIO - 069	DISTRICT: LIBERTY	
SURFACE OWNER: MICHAEL T. RATCLIFFE	USGS 7 1/2 QUADRANGLE MAP NAME BETHANY & VALLEY GROVE, WV		



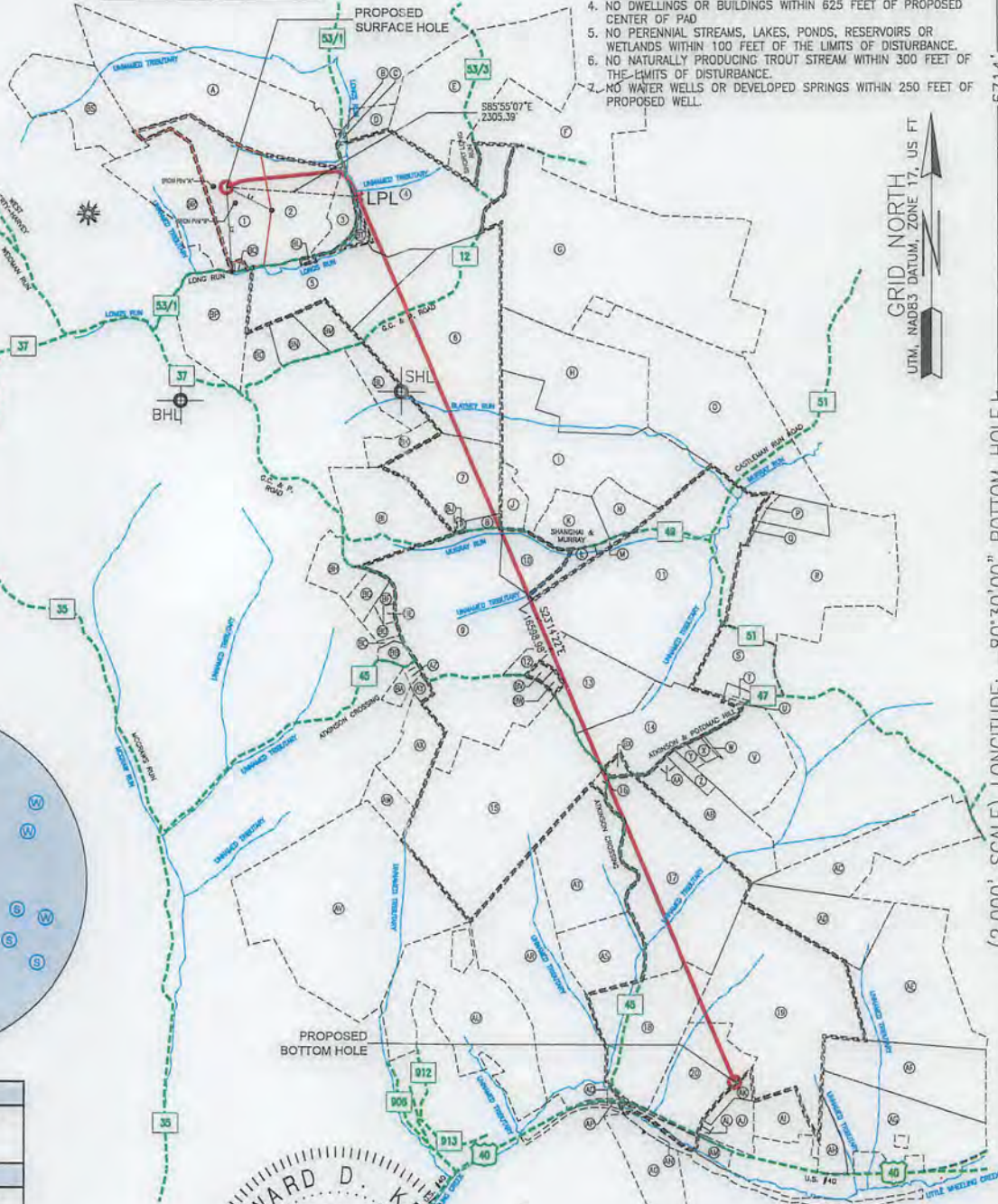
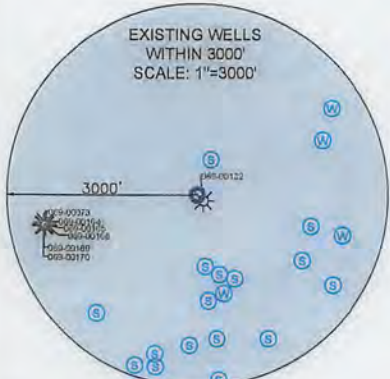
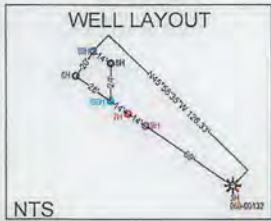


www.jhacompanies.com  
68011 Vineyard Road  
St. Clairsville, Ohio 43950  
740-695-6100

LINE	BEARING	DISTANCE
L1	N62°47'08"W	882.53'
L2	N03°18'33"W	1467.41'

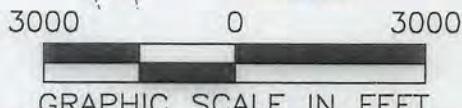
NOTES ON SURVEY

1. COORDINATE SYSTEM IS UTM NAD 83 DATUM, ZONE 17, U.S. FOOT AND WELL COORDINATES ESTABLISHED USING SURVEY GRADE GPS.
2. SURFACE AND ROYALTY OWNER INFORMATION AND THEIR BOUNDARIES SHOWN HEREON WERE PLOTTED FROM DEEDS AND/OR TAX PARCEL MAPS PROVIDED BY CLIENT AND/OR FIELD LOCATIONS.
3. THIS PLAT DOES NOT REPRESENT A BOUNDARY SURVEY OF THE PARCELS SHOWN HEREON.
4. NO DWELLINGS OR BUILDINGS WITHIN 625 FEET OF PROPOSED CENTER OF PAD
5. NO PERENNIAL STREAMS, LAKES, PONDS, RESERVOIRS OR WETLANDS WITHIN 100 FEET OF THE LIMITS OF DISTURBANCE.
6. NO NATURALLY PRODUCING TROUT STREAM WITHIN 300 FEET OF THE LIMITS OF DISTURBANCE.
7. NO WATER WELLS OR DEVELOPED SPRINGS WITHIN 250 FEET OF PROPOSED WELL.



GRID NORTH  
UTM, NAD83 DATUM, ZONE 17, US FT

<b>SURFACE HOLE LOCATION (SHL):</b> UTM (NAD83, ZONE 17, METERS): NORTHING: 4444331.01 EASTING: 536876.93
<b>LANDING POINT (LPL):</b> UTM (NAD83, ZONE 17, METERS): NORTHING: 4444292.76 EASTING: 537578.31
<b>BOTTOM HOLE LOCATION (BHL):</b> UTM (NAD83, ZONE 17, METERS): NORTHING: 4439679.63 EASTING: 539651.44



I, THE UNDERSIGNED, HEREBY CERTIFY THAT THIS PLAT IS CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF AND SHOWS ALL THE INFORMATION REQUIRED BY LAW AND REGULATIONS ISSUED AND PRESCRIBED BY THE DEPARTMENT OF ENVIRONMENTAL PROTECTION.

P.S. 2041

COMPANY: **SWN** Production Company, LLC **SWN** Production Company™

	(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS	MINIMUM DEGREE OF ACCURACY: 1/200	OPERATOR'S WELL #: MICHAEL RATCLIFFE OHI 10H
	WVDEP OFFICE OF OIL & GAS 601 57TH STREET CHARLESTON, WV 25034	PROVEN SURVEY SOURCE OF GRADE GPS ELEVATION: (NAVD 88, US FT)	API WELL #: 47 STATE 069 COUNTY PERMIT DD276 MOD
WELL TYPE: OIL <input type="checkbox"/> WASTE DISPOSAL <input type="checkbox"/> PRODUCTION <input checked="" type="checkbox"/> DEEP <input type="checkbox"/> GAS <input checked="" type="checkbox"/> LIQUID INJECTION <input type="checkbox"/> STORAGE <input type="checkbox"/> SHALLOW <input checked="" type="checkbox"/>		ELEVATION: 1,281.3'	
WATERSHED: OHIO UPPER SOUTH		QUADRANGLE: BETHANY & VALLEY GROVE, WV	
DISTRICT: LIBERTY COUNTY: OHIO		ACREAGE: ±55.835	
SURFACE OWNER: MICHAEL T. RATCLIFFE		ACREAGE: ±55.835	
OIL & GAS ROYALTY OWNER: MICHAEL T. RATCLIFFE		DRILL <input checked="" type="checkbox"/> DRILL DEEPER <input type="checkbox"/> REDRILL <input type="checkbox"/> FRACTURE OR STIMULATE <input checked="" type="checkbox"/> PLUG OFF OLD FORMATION <input type="checkbox"/> PERFORATE NEW FORMATION <input type="checkbox"/>	
CONVERT <input type="checkbox"/> PLUG & ABANDON <input type="checkbox"/> CLEAN OUT & REPLUG <input type="checkbox"/> OTHER CHANGE <input type="checkbox"/> (SPECIFY)		ESTIMATED DEPTH: 6,546' TVD 23,748.7' TMD	
TARGET FORMATION: MARCELLUS		WELL OPERATOR: SWN PRODUCTION COMPANY, LLC	
DESIGNATED AGENT: BRITTANY WOODY		ADDRESS: P.O. BOX 1300	
CITY: JANE LEW STATE: WV ZIP CODE: 26378		CITY: JANE LEW STATE: WV ZIP CODE: 26378	

LEGEND:

	PROPOSED SURFACE HOLE / BOTTOM HOLE		SURVEYED BOUNDARY
	EXISTING / PRODUCING WELLHEAD		LEASE BOUNDARY
	LANDING POINT LOCATION		PROPOSED PATH
	EXISTING WATER WELL		
	EXISTING SPRING		



REVISIONS:	DATE: 08-23-2018
	DRAWN BY: D. REED
	SCALE: 1" = 3000'
	DRAWING NO: 2017-637
	WELL LOCATION PLAT



WELL BORE TABLE FOR SURFACE / ROYALTY OWNERS		
TRACT	SURFACE OWNER (S) / ROYALTY OWNER (R)	TAX PARCEL
1	MICHAEL T. RATCLIFFE (S/R)	03-L5-12.4
2	TRAVIS C. RATCLIFFE	03-L5-12
3	TRAVIS CHRISTOPHER RATCLIFFE (LE)	03-L5-12.1
4	DONALD F. & J.L. DOLENCE	03-L5-11
5	DONALD D. PRINCE	03-L5-24
6	SUSAN LOUISE SMITH	03-L5-27
7	DONALD L. & DEBORAH JO WADDELL	03-L5-23
8	STEVEN DILLE	03-L8-8
9	ROBERT C. JONES	03-L8-11
10	SCOTT A. & JILL L. DILLE	03-L8-9.3
11	HOLLY HOLLOWAY & JOSHUA REASS	03-L9-1
12	RANDY J. CREIGHTON	03-L8-11.2
13	JODY LEE KLUG	03-L8-10
14	LARRY G. BALL	03-L8-42
15	DAVID E. DAVIS, JR.	03-L8-35
16	BERNARD T. & PATRICIA ADAMS	03-L8-37.1
17	TIMMY B. & AMY LYNN MINCH	03-L9-12
18	MARTHA E. CREIGHTON	03-L11-29
19	WILLIAM I. & DOUGLAS W. RODGERS	03-L12-1
20	MILDRED J. MAZGAJ	03-L11-62

ADJOINING OWNERS TABLE		
TRACT	SURFACE OWNER	TAX PARCEL
A	JOSEPH P. & SHIRLEY J. TAGGART	03-L5-3
B	E.L. & S.J. MONROE (C/O: DORIS SMITH)	03-L5-7
C	GENE & SHIRLEY MONROE	03-L5-7.3
D	GEORGE W., JR. & LAURIE GROVE	03-L5-7.1
E	TIMOTHY R. & THELMA C. HAYS	03-L5-29
F	JOSEPH E. & MARJORIE G. ENNIS	03-L5-8
G	HELEN L. & JOHN L., JR. TOMINACK	03-L5-10
H	LYNN MCELVANY	03-L5-26
I	GLENN A. DILLE	03-L8-9.7
J	NEAL P. BROWN	03-L8-9.6
K	FRED E. & JANET K. FOSTER	03-L8-9
L	GEORGE E., III & M.A. PORTER	03-L8-9.5
M	MARGARET ANN PORTER & GEORGE E. PORTER, III	03-L8-9.2
N	JARRETT K. & LESLIE K. REDDY	03-L8-9.4
O	DELMER K. & V.G. LOEW	03-L6-19
P	RODNEY G. & JESSICA J. PLANTS	03-L9-2.2
Q	RODNEY G. & JESSICA J. PLANTS	03-L9-2.3
R	RODNEY G. & JESSICA J. PLANTS	03-L9-2
S	MICHAEL H. FISHER & SUSAN K. FISHER	03-L9-6.6
T	DOROTHY M. BALL	03-L9-6.3
U	DOROTHY BALL	03-L9-8
V	WILLIAM E. NOBLE & DAWN BALTICH	03-L9-14
W	CHARLES P. & D.E. SMITH	03-L9-14.1
X	CHARLES P. & D.E. SMITH	03-L9-10
Y	PATRICK E. & P.A. LEONARD	03-L9-9
Z	PATRICK & PAMELA LEONARD	03-L8-38
AA	WILLIAM H. & E.P. BALL	03-L8-40
AB	WILLIAM H. & LARRY G. BALL	03-L9-11
AC	CARL E. MILLER, JR. (LIFE ESTATE: THELMA A. MILLER)	03-L9-15
AD	JEFFREY S. & DANA R. OCH	03-L12-2.1
AE	RAYMOND M. & H.E. MILLER (C/O: HILDA MILLER)	03-L12-2
AF	TUNNEL RIDGE, LLC	03-L12-4.6
AG	JOSEPH & ANITA M. TANKOVITS	03-L12-4
AH	JACK M. & J. DILLIE	03-L12-4.1
AI	WILLIAM I. RODGERS & DOUGLAS WAYNE RODGERS	03-L12-5.1
AJ	TODD M. MAXWELL	03-L12-27
AK	CATHY J. & JERRY W. CALDWELL	03-L16-6
AL	LARRY MICHAEL PATRICK	03-L11-68
AM	MARION S. & MILDRED J. MAZGAJ	03-L11-67
AN	TUNNEL RIDGE, LLC	03-L12-32
AO	SHARON & WARREN GRIFFITH	03-L11-60.1
AP	JOHN A. NOLAN, JR.	03-L11-66
AQ	JOHN A. NOLAN, JR.	03-L11-63
AR	WINTERS FAMILY FARM, LLC	03-L11-28
AS	HOWARD WINTERS	03-L11-28.1
AT	HOWARD WINTERS	03-L8-36
AU	EDWARD G. GROUX, JR. & JEFFREY L. GROUX	03-L11-27
AV	EDWARD G. GROUX, JR. (L/E: EDWARD G. & LYDIA C. GROUX)	03-L11-26
AW	EDWARD G. GROUX, JR. (L/E: EDWARD G. & LYDIA C. GROUX)	03-L11-26.6
AX	ROBERT C. JONES	03-L8-11.1
AY	ROBERT S. SHILLING, SR.	03-L8-33.9
AZ	JOSEPH T. KLUG	03-L8-34.1
BA	ROBERT A. SHILLING, SR.	03-L8-33
BB	THOMAS P. & TERESA HUDRIJK	03-L8-12.12
BC	BILL RAILING	03-L8-12.8
BD	VICKI L. & DANIEL P. TUSTIN	03-L8-12.6
BE	DANIEL P. TUSTIN, JR.	03-L8-12.9
BF	DANIEL PAUL TUSTIN, JR.	03-L8-12.11
BG	RICHARD R. & L.L. BLOOMFIELD	03-L8-12.10
BH	BARNETT E. & LAURIE L. BECK	03-L8-12.5
BI	BERNARD T. & MARJORIE A. RAAB	03-L8-7
BJ	DONALD L. & D.J. WADDELL	03-L8-39
BK	DONALD L. & DEBORAH JO WADDELL	03-L5-23.6
BL	DALE R. & JACKIE A. RITCHEA	03-L5-23.2
BM	SUSAN NORTHWOOD SMITH & RICHARD ALAN SMITH	03-L5-23.1
BN	JASON & RACHEL MILLER	03-L5-23.3
BO	EDWARD & ELIZABETH LINK	03-L5-23.7
BP	EDWARD R. & ELIZABETH A. LINK	03-L5-22
BQ	MICHAEL T. RATCLIFFE	03-L5-12.3
BR	CASEY P. & DEVAN M. YOUNG	03-L5-13
BS	MARK & ANNELESE KAUFMAN	03-L5-1.1
BT	JOSEPH G. PRINCE & DONALD D. PRINCE	03-L5-11.2
BU	JOSEPH G. PRINCE	03-L5-25
BV	PAUL A. MAIN	03-L8-10.1
BW	RICHARD C. & K.J. WHEAT	03-L8-10.2
BX	SUSAN J.H. HARDMAN	03-L8-37

47-069-00276MOD

REVISIONS:	COMPANY:	 	
	OPERATOR'S	MICHAEL RATCLIFFE	DATE: 08-23-2018
	WELL #:	OHI 10H	DRAWN BY: D. REED
	DISTRICT:	COUNTY:	SCALE: N/A
	LIBERTY	OHIO	DRAWING NO: 2017-637
		STATE:	WV
			WELL LOCATION PLAT



**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 –

- (1) 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:

Lease Name or Number	Grantor, Lessor, etc.	Grantee, Lessee, etc.	Royalty	Book/Page
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: *[Signature]*  
 Its: Landman

RECEIVED  
Office of Oil and Gas  
SEP 6 2018  
WV Department of  
Environmental Protection



69-00276

RECEIVED  
Office of Oil and Gas  
SEP 6 2018  
WV Department of  
Environmental Protection

**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, LLC, Operator  
**Michael Ratcliffe OHI 10H**  
Ohio County, West Virginia

#	TAX ID	LESSOR	LESSEE	ROYALTY	BK/PG
1	03-L5-12.4	Michael T. Ratcliffe	Chesapeake Appalachia, L.L.C. SWN Production Company, LLC	15%	795/622 885/272
2	03-L5-12	Travis C. Ratcliffe, a single man	Chesapeake Appalachia, L.L.C. SWN Production Company, LLC	15%	795/661 885/272
3	03-L5-12.1	Travis C. Ratcliffe, a single man	Chesapeake Appalachia, L.L.C. SWN Production Company, LLC	15%	795/661 885/272
4	03-L5-11	Donald F. Dolence and Joan L. Dolence, husband and wife	Chesapeake Appalachia, L.L.C. SWN Production Company, LLC	18%	818/44 883/599
5	03-L5-24	Beth D. McCammon	Chesapeake Appalachia, L.L.C. SWN Production Company, LLC	18%	826/758 885/656
5	03-L5-24	Linda Ann Porter and Thomas E. Porter	Chesapeake Appalachia, L.L.C. SWN Production Company, LLC	18%	826/391 885/656
5	03-L5-24	Robert Eugene Main and Loretta Jean Main	Chesapeake Appalachia, L.L.C. SWN Production Company, LLC	18%	826/753 885/656
5	03-L5-24	Martha Elizabeth Strohecker	Chesapeake Appalachia, L.L.C. SWN Production Company, LLC	18%	826/763 885/656
5	03-L5-24	D. Pauline Archer	Chesapeake Appalachia, L.L.C. SWN Production Company, LLC	18%	827/643 885/656
5	03-L5-24	Wilda M. Moore	Chesapeake Appalachia, L.L.C. SWN Production Company, LLC	18%	827/638 885/656
5	03-L5-24	William R. Krumme	Chesapeake Appalachia, L.L.C. SWN Production Company, LLC	18%	831/479 885/656
5	03-L5-24	Ethel Lynn Denges a/k/a Ethel Lynn Krumme and Robert A. Denges	Chesapeake Appalachia, L.L.C. SWN Production Company, LLC	18%	831/501 885/656



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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, LLC, Operator  
**Michael Ratcliffe OHI 10H**  
**Ohio County, West Virginia**

#	TAX ID	LESSOR	LESSEE	ROYALTY	BK/PG
5	03-L5-24	C. Lucille Obermann	Chesapeake Appalachia, L.L.C. SWN Production Company, LLC	18%	827/633 885/656
5	03-L5-24	Jennifer Pogue	Chesapeake Appalachia, L.L.C. SWN Production Company, LLC	18%	828/315 885/668
5	03-L5-24	Dena Pogue	Chesapeake Appalachia, L.L.C. SWN Production Company, LLC	18%	832/51 885/668
5	03-L5-24	Marlene Lambert and Edward Lambert	Chesapeake Appalachia, L.L.C. SWN Production Company, LLC	18%	832/46 885/668
5	03-L5-24	Joann Chegan	Chesapeake Appalachia, L.L.C. SWN Production Company, LLC	18%	832/74 885/668
5	03-L5-24	William B. Pogue and Mary L. Pogue	Chesapeake Appalachia, L.L.C. SWN Production Company, LLC	18%	832/27 885/668
5	03-L5-24	Sharon Grace Porter	Chesapeake Appalachia, L.L.C. SWN Production Company, LLC	18%	833/304 885/668
5	03-L5-24	Sandra W. Weckesser a/k/a Sandra K. Weaver and Timothy C. Weckesser	Chesapeake Appalachia, L.L.C. SWN Production Company, LLC	18%	833/605 885/668
5	03-L5-24	Linda McLendon and Larry McLendon	Chesapeake Appalachia, L.L.C. SWN Production Company, LLC	18%	835/45 885/668
5	03-L5-24	Gwen Leistner and Michael Leistner	Chesapeake Appalachia, L.L.C. SWN Production Company, LLC	18%	828/269 885/668
5	03-L5-24	Gail Spence and Ronald Spence	Chesapeake Appalachia, L.L.C. SWN Production Company, LLC	18%	828/301 885/668
5	03-L5-24	Gene Masteller	Chesapeake Appalachia, L.L.C. SWN Production Company, LLC	18%	826/768 885/668



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**Michael Ratcliffe OHI 10H**  
Ohio County, West Virginia

#	TAX ID	LESSOR	LESSEE	ROYALTY	BK/PG
5	03-L5-24	James I. Masteller	Chesapeake Appalachia, L.L.C. SWN Production Company, LLC	18%	835/160 885/668
5	03-L5-24	John E. Masteller	Chesapeake Appalachia, L.L.C. SWN Production Company, LLC	18%	835/154 885/668
5	03-L5-24	Gary Farrar and Rebecca Farrar	Chesapeake Appalachia, L.L.C. SWN Production Company, LLC	18%	828/320 885/668
5	03-L5-24	Beverly D. Hertig	Chesapeake Appalachia, L.L.C. SWN Production Company, LLC	18%	837/190 885/668
5	03-L5-24	Patricia Kirkbride	Chesapeake Appalachia, L.L.C. SWN Production Company, LLC	18%	838/720 885/668
5	03-L5-24	The Estate of Charles Montgomery Eberhardt by and through Monica J. Franklin, Executrix	Chesapeake Appalachia, L.L.C. SWN Production Company, LLC	20%	840/578 885/668
5	03-L5-24	William Reed	Chesapeake Appalachia, L.L.C. SWN Production Company, LLC	18%	840/645 885/668
5	03-L5-24	Tamara R. Kerr	Chesapeake Appalachia, L.L.C. SWN Production Company, LLC	18%	841/715 885/668
5	03-L5-24	Billie Sprowls	Chesapeake Appalachia, L.L.C. SWN Production Company, LLC	18%	846/105 885/668
5	03-L5-24	Jason E. Martin	Chesapeake Appalachia, L.L.C. SWN Production Company, LLC	18%	869/117 883/778
5	03-L5-24	Jessica L. Grabenhorst f/k/a Jessica L. Byrd	Chesapeake Appalachia, L.L.C. SWN Production Company, LLC	18%	869/439 883/778
5	03-L5-24	Jeremy Owen Byrd	Chesapeake Appalachia, L.L.C. SWN Production Company, LLC	18%	869/445 883/778

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**Michael Ratcliffe OHI 10H**  
Ohio County, West Virginia

#	TAX ID	LESSOR	LESSEE	ROYALTY	BK/PG
5	03-L5-24	Susan D. DiGiandomenico a/k/a Susan DiGiandomen	Chesapeake Appalachia, L.L.C. SWN Production Company, LLC	18%	873/144 883/766
5	03-L5-24	James Robert Johnson	Chesapeake Appalachia, L.L.C. SWN Production Company, LLC	18%	874/257 885/548
5	03-L5-24	Ian L. Montgomery	Chesapeake Appalachia, L.L.C. SWN Production Company, LLC	18%	873/175 885/536
5	03-L5-24	Eleanor B. Riggs	Chesapeake Appalachia, L.L.C. SWN Production Company, LLC	18%	860/149 883/766
5	03-L5-24	Robert W. Wardle	Chesapeake Appalachia, L.L.C. SWN Production Company, LLC	18%	860/144 883/766
5	03-L5-24	Nadine Montgomery McDowell	Chesapeake Appalachia, L.L.C. SWN Production Company, LLC	18%	862/107 883/766
5	03-L5-24	Heather H. Montgomery	Chesapeake Appalachia, L.L.C. SWN Production Company, LLC	18%	877/594 895/498
6	03-L5-27	George Flaccus Smith	Chesapeake Appalachia, L.L.C. SWN Production Company, LLC	18%	813/288 883/563
7	03-L5-23	Donald L. Waddell and Deborah Jo Waddell, his wife	Great Lakes Energy Partners, L.L.C. Chesapeake Appalachia, L.L.C. SWN Production Company, LLC	12.5%	778/272 808/507 883/515
8	03-L8-8	Steven F. Dille, a single man	SWN Production Company, LLC	18%	947/667
9	03-L8-11	CNX Gas Company, LLC	SWN Production Company, LLC	18%	48/118
10	03-L8-9.3	Lloyd Allen Temple, a single man	Chesapeake Appalachia, L.L.C. SWN Production Company, LLC	18%	859/517 883/754



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**Michael Ratcliffe OHI 10H**  
Ohio County, West Virginia

#	TAX ID	LESSOR	LESSEE	ROYALTY	BK/PG
11	03-L9-1	Nancy C. Reass, widow	Chesapeake Appalachia, L.L.C. SWN Production Company, LLC	12.5%	792/763 885/260
12	03-L8-11.2	Randy J. Creighton, a married man dealing in his sole and separate property	Chesapeake Appalachia, L.L.C. SWN Production Company, LLC	15%	843/121 885/752
13	03-L8-10	Jody Lee Klug f/k/a Jody Lee Shilling, a married woman dealing in her sole and separate property	Chesapeake Appalachia, L.L.C. SWN Production Company, LLC	18%	813/639 883/587
14	03-L8-42	Larry Gene Ball, a single man	Chesapeake Appalachia, L.L.C. SWN Production Company, LLC	12.5%	795/641 885/260
15	03-L8-35	David Elwood Davis, Jr., a single man	Chesapeake Appalachia, L.L.C. SWN Production Company, LLC	18%	829/791 885/656
16	03-L8-37.1	Bernard T. Adams and Patricia Adams, husband and wife	SWN Production Company, LLC	18%	896/521
17	03-L9-12	Timmy B. Minch and Amy L. Minch, husband and wife	Chesapeake Appalachia, L.L.C. SWN Production Company, LLC	18%	816/723 883/563
18	03-L11-29	JoAnn A. Parsons, a widow	Chesapeake Appalachia, L.L.C. SWN Production Company, LLC	18%	863/758 883/778
18	03-L11-29	Patty Jean Ebbert, a widow	Chesapeake Appalachia, L.L.C. SWN Production Company, LLC	16%	845/440 885/752
18	03-L11-29	William Asher Childers, a married man dealing in his sole and separate property	Chesapeake Appalachia, L.L.C. SWN Production Company, LLC	16%	845/435 885/752
18	03-L11-29	Robert Joseph Childers, a married man dealing in his sole and separate property	Chesapeake Appalachia, L.L.C. SWN Production Company, LLC	16%	845/445 885/752
18	03-L11-29	Mildred I. Maxwell f/k/a Mildred Imogene Amend, a widow	Chesapeake Appalachia, L.L.C. SWN Production Company, LLC	18%	867/29 883/778

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**Michael Ratcliffe OHI 10H**  
**Ohio County, West Virginia**

#	TAX ID	LESSOR	LESSEE	ROYALTY	BK/PG
19	03-L12-1	William I. Rodgers a Married man dealing in his sole and separate property, and Douglas W. Rodgers, a single man	TriEnergy Holdings, LLC Chesapeake Appalachia, L.L.C. SWN Production Company, LLC	18%	810/374 825/708 883/611
20	03-L11-62	Marion S. Mazgaj and Mildred J. Mazgaj, husband and wife	Chesapeake Appalachia, L.L.C. SWN Production Company, LLC	18%	821/654 885/608



August 30, 2018

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

**RE:** SWN's proposed New Well: Michael Ratcliffe OHI 10H in Ohio County, West Virginia, Drilling under Long Run Road, G. C. & P. Road, Shanghi Murray Road, Atkinson Crossing, & Atkinson & Patomac 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 Long Run Road, G. C. & P. Road, Shanghi Murray Road, Atkinson Crossing & Atkinson & Patomac 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

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wisely investing the cash flow from our  
underlying Assets, will create Value+®

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69-00276 Mex

SWN Production Company, LLC  
179 Innovation Drive  
Jane Lew, WV 26378  
Tel: 304 884 1610  
Fax: 304 471 2497  
www.swn.com

September 4, 2018

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

RE: Modification: Michael Ratcliffe OHI 10H & Michael Ratcliffe OHI 8H

Dear Ms. Adkins 69-00276 69-00275

Enclosed please find the updated 6B, WBD, Mylar, Leases, & Road Letter for the above captioned wells. We are extending the laterals. These wells are situated on the Ratcliffe'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

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wisely investing the cash flow from our  
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