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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

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

Monday, March 26, 2018  
WELL WORK PERMIT  
Horizontal 6A / New Drill

SWN PRODUCTION COMPANY, LLC  
POST OFFICE BOX 12359

SPRING, TX 773914954

Re: Permit approval for RINE WTZ 1H  
47-103-03220-00-00

This well work permit is evidence of permission granted to perform the specified well work at the location described on the attached pages and located on the attached plat, subject to the provisions of Chapter 22 of the West Virginia Code of 1931, as amended, and all rules and regulations promulgated thereunder, and to any additional specific conditions and provisions outlined in the pages attached hereto. Notification shall be given by the operator to the Oil and Gas Inspector at least 24 hours prior to the construction of roads, locations, and/or pits for any permitted work. In addition, the well operator shall notify the same inspector 24 hours before any actual well work is commenced and prior to running and cementing casing. Spills or emergency discharges must be promptly reported by the operator to 1-800-642-3074 and to the Oil and Gas Inspector.

Please be advised that form WR-35, Well Operators Report of Well Work is to be submitted to this office within 90 days of completion of permitted well work, as should form WR-34 Discharge Monitoring Report within 30 days of discharge of pits, if applicable. Failure to abide by all statutory and regulatory provisions governing all duties and operations hereunder may result in suspension or revocation of this permit and, in addition, may result in civil and/or criminal penalties being imposed upon the operators.

Per 35 CSR 4-5.2.g this permit will expire in two (2) years from the issue date unless 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: RINE WTZ 1H  
Farm Name: LARRY G. RINE & JANA L. RI  
U.S. WELL NUMBER: 47-103-03220-00-00  
Horizontal 6A New Drill  
Date Issued: 3/26/2018

**PERMIT CONDITIONS 47 10 30 3220**

West Virginia Code § 22-6A-8(d) allows the Office of Oil and Gas to place specific conditions upon this permit. Permit conditions have the same effect as law. Failure to adhere to the specified permit conditions may result in enforcement action.

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**CONDITIONS**

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1. This proposed activity may require permit coverage from the United States Army Corps of Engineers (USACE). Through this permit, you are hereby being advised to consult with USACE regarding this proposed activity.
2. If the operator encounters an unanticipated void, or an anticipated void at an unanticipated depth, the operator shall notify the inspector within 24 hours. Modifications to the casing program may be necessary to comply with W. Va. Code § 22-6A-5a (12), which requires drilling to a minimum depth of thirty feet below the bottom of the void, and installing a minimum of twenty (20) feet of casing. Under no circumstance should the operator drill more than one hundred (100) feet below the bottom of the void or install less than twenty (20) feet of casing below the bottom of the void.
3. When compacting fills, each lift before compaction shall not be more than 12 inches in height, and the moisture content of the fill material shall be within limits as determined by the Standard Proctor Density test of the actual soils used in specific engineered fill, ASTM D698, Standard Test Method for Laboratory Compaction Characteristics of Soil Using Standard Effort, to achieve 95 % compaction of the optimum density. Each lift shall be tested for compaction, with a minimum of two tests per lift per acre of fill. All test results shall be maintained on site and available for review.
4. Operator shall install signage per § 22-6A-8g (6) (B) at all source water locations included in their approved water management plan within 24 hours of water management plan activation.
5. Oil and gas water supply wells will be registered with the Office of Oil and Gas and all such wells will be constructed and plugged in accordance with the standards of the Bureau for Public Health set forth in its Legislative rule entitled *Water Well Regulations*, 64 C.S.R. 19. Operator is to contact the Bureau of Public Health regarding permit requirements. In lieu of plugging, the operator may transfer the well to the surface owner upon agreement of the parties. All drinking water wells within fifteen hundred feet of the water supply well shall be flow tested by the operator upon request of the drinking well owner prior to operating the water supply well.
6. Pursuant to the requirements pertaining to the sampling of domestic water supply wells/springs the operator shall, no later than thirty (30) days after receipt of analytical data provide a written copy to the Chief and any of the users who may have requested such analyses.
7. 24 hours prior to the initiation of the completion process the operator shall notify the Chief or his designee.
8. During the completion process the operator shall monitor annular pressures and report any anomaly noticed to the chief or his designee immediately.
9. If any explosion or other accident causing loss of life or serious personal injury occurs in or about a well or well work on a well, the well operator or its contractor shall give notice, stating the particulars of the explosion or accident, to the oil and gas inspector and the Chief, within 24 hours of said accident.
10. During the casing and cementing process, in the event cement does not return to the surface, the oil and gas inspector shall be notified within 24 hours.

# PERMIT CONDITIONS 47 10 3032205

11. The operator shall provide to the Office of Oil and Gas the dates of each of the following within 30 days of their occurrence: completion of construction of the well pad, commencement of drilling, cessation of drilling, completion of any other permitted well work, and completion of the well. Such notice shall be provided by sending an email to [DEPOOGNotify@wv.gov](mailto:DEPOOGNotify@wv.gov).

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 1-Center 438-Littleton  
Operator ID County District Quadrangle

2) Operator's Well Number: Rine WTZ 1H Well Pad Name: Rine WTZ Pad

3) Farm Name/Surface Owner: Larry G. & Jana L. Rine Public Road Access: Miller Ridge

4) Elevation, current ground: 1328' Elevation, proposed post-construction: 1328'

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, Target Top TVD- 7284', Target Base TVD- 7322', Anticipated Thickness- 38', Associated Pressure- 4745

8) Proposed Total Vertical Depth: 7303'

9) Formation at Total Vertical Depth: Marcellus

10) Proposed Total Measured Depth: 15,343'

11) Proposed Horizontal Leg Length: 4472.73'

12) Approximate Fresh Water Strata Depths: 314'

13) Method to Determine Fresh Water Depths: Salinity Profile for the Daniel Durig pad at 1040' subsea

14) Approximate Saltwater Depths: 783' Top of potential high salinity sandstone noted on Shawn Harlan 3H logs and correlated to Rine Pad.

15) Approximate Coal Seam Depths: 1177'

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: \_\_\_\_\_

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MAR 16 2018


WV Department of  
Environmental Protection

47 10 303220

WW-6B  
(04/15)

API NO. 47- 103 -  
OPERATOR WELL NO. Rine WTZ 1H  
Well Pad Name: Rine WTZ 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#	414'	414'	404 sx/CTS
Coal							
Intermediate	9 5/8"	New	J-55	36#	2800'	2800'	1089 sx/CTS
Production	5 1/2"	New	HCP-110	20#	15,343'	15,343'	Lead 625 sz tall 1975 sz/107 made in 
Tubing							
Liners							

*DmH  
3-14-18*

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							

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PACKERS

Kind:				
Sizes:				
Depths Set:				

WW-6B  
(10/14)

API NO. 47- 103 - \_\_\_\_\_  
OPERATOR WELL NO. Rine WTZ 1H  
Well Pad Name: Rine WTZ Pad

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.)

*Don't  
3-14-18*

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): 7.4

22) Area to be disturbed for well pad only, less access road (acres): 6.6

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 \*\*\*

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25) Proposed borehole conditioning procedures:

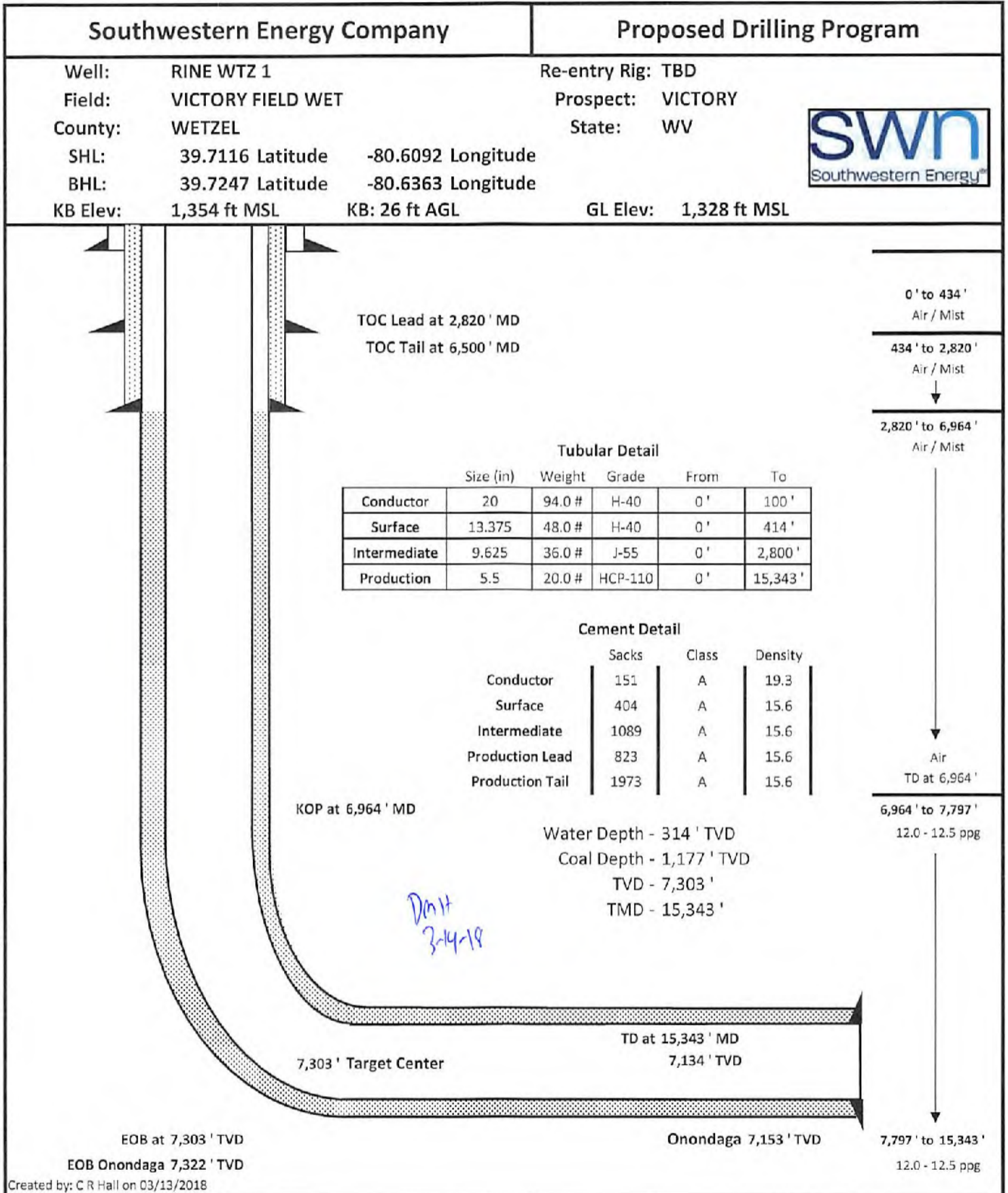
All boreholes will be conditioned with circulation and rotation for a minimum of one bottoms up and continuing until operator is satisfied with borehole conditions.

\*Note: Attach additional sheets as needed.

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03/30/2018

## Schlumberger Cement Additives

	Product Name	Product Use	Chemical Name	CAS Number
Surface	S001	accelerator	calcium chloride	10043-52-4
Intermediate	S001	accelerator	calcium chloride	10043-52-4
Kick Off Plug	D080	dispersant	sodium polynaphthalene sulfonate	9008-63-3
	D801	retarder	aromatic polymer derivative	proprietary
	D047	antifoam	polypropylene glycol	25322-69-4
Production-Lead	D167	fluid loss	aliphatic amide polymer	proprietary
	D154	extender	non-crystalline silica	7631-86-9
	D400	gas migration	boric acid	10043-35-3
	D046	antifoam	polypropylene glycol	25322-69-4
			fullers earth (attapulgate)	8031-18-3
	D201	retarder	chrystalline silica	14808-60-7
			metal oxide	proprietary
	D202	dispersant	sulphonated synthetic polymer	proprietary
formaldehyde (impurity)			proprietary	
Production-Tail	D046	antifoam	polypropylene glycol	25322-69-4
			fullers earth (attapulgate)	8031-18-3
	D167	fluid loss	aliphatic amide polymer	proprietary
			sodium polynaphthalene sulfonate	9008-63-3
	D065	dispersant	sodium sulfate	7757-82-6
			chrystalline silica	14808-60-7
D201	retarder	metal oxide	proprietary	
		chrystalline silica	14808-60-7	
D153	anti-settling	chrystalline silica	14808-60-7	

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03/30/2018





WW-9  
(4/16)

API Number 47 - 103 - \_\_\_\_\_  
Operator's Well No. Rine WTZ 1H \_\_\_\_\_

STATE OF WEST VIRGINIA  
DEPARTMENT OF ENVIRONMENTAL PROTECTION  
OFFICE OF OIL AND GAS

FLUIDS/ CUTTINGS DISPOSAL & RECLAMATION PLAN

Operator Name SWN Production Co., LLC OP Code 494512924

Watershed (HUC 10) Little Laural Run of Fish Creek Quadrangle Littleton

Do you anticipate using more than 5,000 bbls of water to complete the proposed well work? Yes  No

Will a pit be used? Yes  No

If so, please describe anticipated pit waste: \_\_\_\_\_

Will a synthetic liner be used in the pit? Yes  No  If so, what ml.? \_\_\_\_\_

Proposed Disposal Method For Treated Pit Wastes:

- Land Application
- Underground Injection ( UIC Permit Number 34-155-22403, 34-059-24057, 34-119-23776, 34-167-23862, 34-155-23795, 34-121-23605, 34-155-21893) DMH  
11-16-17
- Reuse (at API Number \_\_\_\_\_ at next anticipated well, API# will be included with the WR-34/DDMR &/or permit addendum.)
- Off Site Disposal (Supply form WW-9 for disposal location)
- Other (Explain flow back fluids will be put in steel tanks and reused or taken to a permitted disposal facility)

Will closed loop system be used? If so, describe: Yes

Drilling medium anticipated for this well (vertical and horizontal)? Air, freshwater, oil based, etc. Air drill to KOP, fluid drill with SOBM from KOP to TD

-If oil based, what type? Synthetic, petroleum, etc. Synthetic Oil Base

Additives to be used in drilling medium? See Attachment 3A

Drill cuttings disposal method? Leave in pit, landfill, removed offsite, etc. landfill

-If left in pit and plan to solidify what medium will be used? (cement, lime, sawdust) \_\_\_\_\_

-Landfill or offsite name/permit number? Meadowfill SWF- 1032, Short Creek SWF-1034, Carbon Limestone MSWL018781, Wetzel County 1021

Arden Landfill 10072, Apex Sanitary Landfill 06-08438, Brooke Co SWF-1013, Valley 100280

Permittee shall provide written notice to the Office of Oil and Gas of any load of drill cuttings or associated waste rejected at any West Virginia solid waste facility. The notice shall be provided within 24 hours of rejection and the permittee shall also disclose where it was properly disposed.

I certify that I understand and agree to the terms and conditions of the GENERAL WATER POLLUTION PERMIT issued on August 1, 2005, by the Office of Oil and Gas of the West Virginia Department of Environmental Protection. I understand that the provisions of the permit are enforceable by law. Violations of any term or condition of the general permit and/or other applicable law or regulation can lead to enforcement action.

I certify under penalty of law that I have personally examined and am familiar with the information submitted on this application form and all attachments thereto and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine or imprisonment.

Company Official Signature [Signature]

Company Official (Typed Name) Dee Southall

Company Official Title Senior Regulatory Analyst

Subscribed and sworn before me this 14th day of November, 2017

Brittany R Woody  
11/21/17



My commission expires \_\_\_\_\_

SWN Production Co., LLC

Proposed Revegetation Treatment: Acres Disturbed 7.4 Prevegetation pH \_\_\_\_\_

Lime as determined Tons/acre or to correct to pH 6.6

Fertilizer type 10-20-20

Fertilizer amount 600 lbs/acre

Mulch Hay/Straw 2.5 Tons/acre

Seed Mixtures

**Temporary**

**Permanent**

Seed Type                      lbs/acre

Seed Type                      lbs/acre

See Attachment 3B

Attach:

Maps(s) of road, location, pit and proposed area for land application (unless engineered plans including this info have been provided). If water from the pit will be land applied, include dimensions (L x W x D) of the pit, and dimensions (L x W), and area in acreage, of the land application area.

Photocopied section of involved 7.5' topographic sheet.

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Plan Approved by: [Signature]

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Comments: \_\_\_\_\_

WV Department of  
Environmental Protection

Title: Oil & Gas Inspector Date: 1/16/17

Field Reviewed?  Yes  No

**Attachment 3A**  
**Drilling Mediums**

Synthetic Oil

Brine

Barite

Calcium Chloride

Lime

Organophilic Bentonite

Primary and Secondary Emulsifiers

Gilsonite

Calcium Carbonate

Friction Reducers

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4710303220



# WVD Seeding Specification

To Order: Seed contact Lyndsi Eddy Filippo office 570-996-4271 cell 501-269-5451 lyndsi\_eddy@swn.com (please allow 7 to 10 days for delivery)

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Attachment 3B  
WV Department of Environmental Protection

R-V

03/30/2018

## NON-ORGANIC PROPERTIES

Seed Mixture: ROW Mix	SWN Supplied
Orchardgrass	40%
Timothy	15%
Annual Ryegrass	15%
Brown Top Millet	5%
Red Top	5%
Medium Red Clover	5%
White Clover	5%
Birdsfoot Trefoil	5%
Rough Bluegrass	5%

All legumes are  
Inoculated at 5x normal  
rate

Apply @ 100lbs per acre  
April 16th- Oct. 14th

Apply @ 200lbs per acre  
Oct. 15th- April 15th PLUS  
50lbs per acre of Winter Wheat

## SOIL AMENDMENTS

10-20-20 Fertilizer	*Apply @ 500lbs per Acre
Pelletized Lime	Apply @ 2 Tons per Acre

\*unless otherwise dictated by soil test results

Seeding Calculation Information:

1452' of 30' ROW/LOD is One Acre  
871' of 50' ROW/LOD is One Acre  
622' of 70' ROW/LOD is One Acre

**Synopsis:**  
Every 622 linear feet in a 70' ROW/LOD, you should be using (2) 50lb bags of seed, (4) 50lb bags of fertilizer and (80) 50lb bags of Lime (2x seed in winter months + 50lb Winter Wheat/ac).

## Special Considerations:

Landowner Special Considerations including CREP program participants require additional guidance that is not given here. Discuss these requirements with SWN supervision at the beginning of the project to allow time for special seed delivery.

## ORGANIC PROPERTIES

Seed Mixture: SWN Production Organic Mix	SWN Supplied
Organic Timothy	50%
Organic Red or White Clover	50%
OR	
Organic Perennial Ryegrass	50%
Organic Red or White Clover	50%

Apply @ 100lbs per acre  
April 16th- Oct. 14th

Apply @ 200lbs per acre  
Oct. 15th- April 15th

Organic Fertilizer @ 200lbs per Acre

Pelletized Lime @ 2 Tons per Acre

## WETLANDS (delineated as jurisdictional wetlands)

Seed Mixture: Wetland Mix	SWN Supplied
VA Wild Ryegrass	20%
Annual Ryegrass	20%
Fowl Bluegrass	20%
Cosmos 'Sensation'	10%
Redtop	5%
Golden Tickseed	5%
Maryland Senna	5%
Showy Tickseed	5%
Fox Sedge	2.5%
Soft Rush	2.5%
Woolgrass	2.5%
Swamp Verbena	2.5%

Apply @ 25lbs per acre  
April 16th- Oct. 14th

Apply @ 50lbs per acre  
Oct. 15th- April 15th

NO FERTILIZER OR LIME INSIDE WETLAND LIMITS

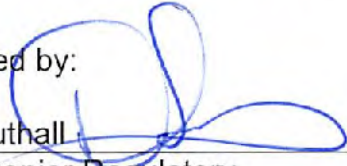
# MARCELLUS WELL DRILLING PROCEDURES AND WELL SITE SAFETY PLAN



SWN Production Company, LLC  
179 Innovation Drive  
Jane Lew, West Virginia 26378

**API NO. 47-XXX-XXXXX**  
**WELL NAME: Rine WTZ 1H**  
**Littleton QUAD**  
**Center DISTRICT**  
**Wetzel COUNTY, WEST VIRGINIA**

Submitted by:

  
Dee Southall

Senior Regulatory

Title: Analyst

Date: 11/3/2017

SWN Production Co., LLC

Approved by:



Date: 11-16-17

Title: Oil & Gas Inspector

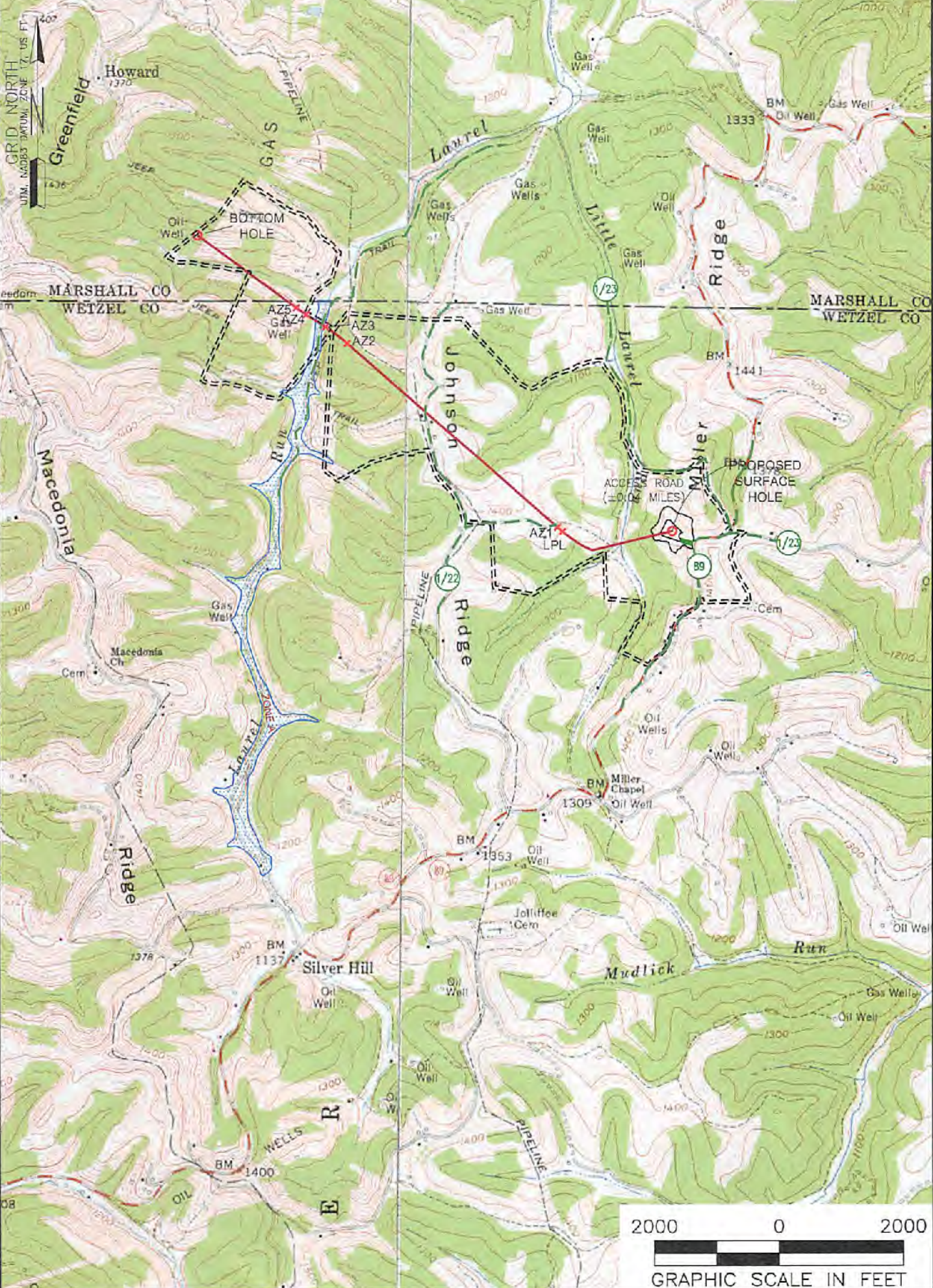
Approved by:

Date: \_\_\_\_\_

Title: \_\_\_\_\_

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**JACKSON SURVEYING  
INC.**  
P.O. Box 1460  
677 W. Main St.  
Clarksburg, WV 26302  
304-623-5851



**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. THIS PLAT DOES NOT REPRESENT A BOUNDARY SURVEY OF THE PARCELS SHOWN HEREON.  
2. ALL INSETS ARE GRID NORTH UNLESS OTHERWISE DEPICTED.

**LEGEND:**

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

03/30/2018

<b>WELL OPERATOR:</b> SWN PRODUCTION COMPANY, LLC	<b>WELL (FARM) NAME:</b> RINE WTZ	<b>WELL #</b> 1H	<b>SERIAL #</b>
<b>ADDRESS:</b> P.O. BOX 1300 JANE LEW, WV 26378	<b>COUNTY - CODE</b> WETZEL - 103	<b>DISTRICT; CENTER</b>	
<b>SURFACE OWNER:</b> LARRY G. RINE & JANA L. RINE	<b>USGS 7 1/2 QUADRANGLE MAP NAME</b> LITTLETON, WV		

Latitude: 39°45'00"

SURFACE HOLE 7284'

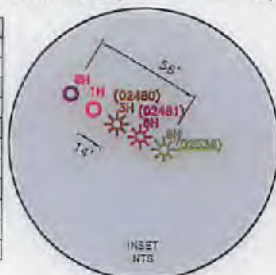
Latitude: 39°45'00" BOTTOM HOLE

3,165'

**JACKSON SURVEYING INC.**

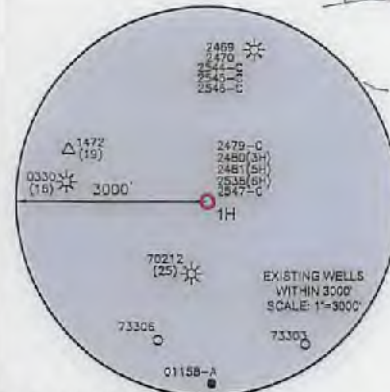
P.O. Box 1460  
677 W. Main St.  
Clarksburg, WV 26302  
304-623-5851

LINE	BEARING	DISTANCE	DESCRIPTION	MONUMENT	
L1	S 51°18'04" W	334.68'	SHL TO LANDMARK	20" BLACK CHERRY	
L2	N 86°20'42" W	396.30'	SHL TO LANDMARK	STONE FOUND	
LINE	BEARING	DISTANCE	CURVE LENGTH	DESCRIPTION	
L3	S 69°43'15" W	1758.42'	1879.82'	SHL TO LP	
LINE	BEARING	DISTANCE	DESCRIPTION	MONUMENT	
L4	N 57°28'25" W	368.21'	AZ3 TO AZ4	N/A	
L5	N 53°51'48" W	1,961.24'	AZ5 TO BH	N/A	
CURVE	CHORD DIRECTION	RADIUS	ARC LENGTH	CHORD LENGTH	DESCRIPTION
C1	N 49°59'50" W	2,911.76'	107.89'	107.88'	LPL TO AZ1
C2	N 53°12'04" W	2,934.17'	437.56'	437.15'	AZ2 TO AZ3
C3	N 55°40'01" W	3,073.03'	193.03'	193.00'	AZ4 TO AZ5



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

- SURFACE HOLE LOCATION (SHL):**  
UTM (NAD83, ZONE 17, METERS):  
NORTHING: 4,395,822.852  
EASTING: 533,495.180
- LANDING POINT (LPL):**  
UTM (NAD83, ZONE 17, METERS):  
NORTHING: 4,395,820.240  
EASTING: 532,959.219
- AZIMUTH 1 (AZ1):**  
UTM (NAD83, ZONE 17, METERS):  
NORTHING: 4,395,841.378  
EASTING: 532,934.030
- AZIMUTH 2 (AZ2):**  
UTM (NAD83, ZONE 17, METERS):  
NORTHING: 4,396,737.068  
EASTING: 531,906.267
- AZIMUTH 3 (AZ3):**  
UTM (NAD83, ZONE 17, METERS):  
NORTHING: 4,396,815.883  
EASTING: 531,799.571
- AZIMUTH 4 (AZ4):**  
UTM (NAD83, ZONE 17, METERS):  
NORTHING: 4,396,877.227  
EASTING: 531,704.946
- AZIMUTH 5 (AZ5):**  
UTM (NAD83, ZONE 17, METERS):  
NORTHING: 4,396,910.405  
EASTING: 531,656.370
- BOTTOM HOLE LOCATION (BHL):**  
UTM (NAD83, ZONE 17, METERS):  
NORTHING: 4,397,262.928  
EASTING: 531,173.590



BOTTOM HOLE 9,225'

Latitude: 80°37'30"

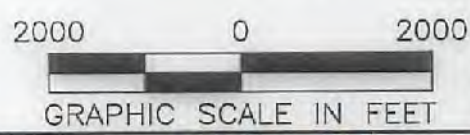
SURFACE HOLE 13983'

Longitude: 80°35'00"

- WELL RESTRICTIONS**
- NO OCCUPIED DWELLINGS > 2500 SQ. FT. WITHIN 625 FEET OF CENTER OF PAD.
  - NO AGRICULTURE BUILDINGS > 2500 SQ. FT. WITHIN 625 FEET OF CENTER OF PAD.
  - WATER WELLS OR DEVELOPED SPRINGS ARE WITHIN 250 FEET OF PROPOSED WELL.
  - PERENNIAL STREAMS, LAKES, PONDS, OR RESERVOIRS WITHIN 100 FEET OF THE LIMITS OF DISTURBANCE.
  - NO NATURALLY PRODUCING TROUT STREAM WITHIN 300 FEET OF LIMITS OF DISTURBANCE.
  - NO GROUND INTAKE OR PUBLIC WATER SUPPLY WITHIN 1000 FEET OF WELL PAD, LIMITS OF DISTURBANCE, E & S CONTROLS OR PUBLIC WATER SUPPLY.

- NOTES ON SURVEY**
- 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.
  - THIS PLAN DOES NOT REPRESENT A BOUNDARY SURVEY OF THE PARCELS SHOWN HEREON.
  - ALL 'INSETS' ARE GRID NORTH UNLESS OTHERWISE DEPICTED.

I, THE UNDERSIGNED, HEREBY CERTIFY THAT THIS PLAN 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.



COMPANY: **SWN** Production Company, LLC

P.S. 708 *David L Jackson*

(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS

WVDEP  
OFFICE OF OIL & GAS  
601 57TH STREET  
CHARLESTON, WV 25034

MINIMUM DEGREE OF ACCURACY: 1/200

PROVEN SOURCE OF ELEVATION: SURVEY GRADE GPS (NAVD 88, US FT)

OPERATOR'S WELL #: RINE WTZ 1H

API WELL #: 47 103 03220

STATE COUNTY PERMIT

WELL TYPE: OIL  WASTE DISPOSAL  PRODUCTION  DEEP  GAS  LIQUID INJECTION  STORAGE  SHALLOW

WATERSHED: LITTLE LAURAL RUN OF FISH CREEK (HUC-10) ELEVATION: 1327.8'

DISTRICT: CENTER COUNTY: WETZEL QUADRANGLE: LITTLETON, WV

SURFACE OWNER: LARRY G. RINE & JANA L. RINE ACREAGE: ±60.80

OIL & GAS ROYALTY OWNER: VERN STANSBURY & BESSIE L. STANSBERRY, (SHIRLEY A. PARKER; HOWARD G. STANSBERRY) ACREAGE: ±60.80

DRILL  DRILL DEEPER  REDRILL  FRACTURE OR STIMULATE  PLUG OFF OLD FORMATION  PERFORATE NEW FORMATION

CONVERT  PLUG & ABANDON  CLEAN OUT & REPLUG  OTHER CHANGE  (SPECIFY) \_\_\_\_\_

TARGET FORMATION: MARCELLUS ESTIMATED DEPTH: 7,303 15,343 TMD

WELL OPERATOR: SWN PRODUCTION COMPANY, LLC DESIGNATED AGENT: DEE SOUTHALL

ADDRESS: P.O. BOX 1300 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
- EXISTING / PRODUCING WELLHEAD
- LPL: LANDING POINT LOCATION
- EXISTING WATER WELL
- EXISTING SPRING
- SURVEYED BOUNDARY
- DRILLING UNIT
- LEASE BOUNDARY
- PROPOSED PATH

**REVISIONS:**

- REVISED DHP 03-07-2018
- REVISED TVD, TMD, & OWNERSHIP OF PARCEL 01-04-12 03-13-2018

DATE: 12-07-2017

DRAWN BY: N. MANO

SCALE: 1" = 2000'

DRAWING NO:

WELL LOCATION PLAT

03/30/2018





**JACKSON SURVEYING  
INC.**

P.O. Box 1460  
677 W. Main St.  
Clarksburg, WV 26302  
304-623-5851

WELL BORE TABLE FOR SURFACE / ROYALTY OWNERS		
TRACT	SURFACE OWNER (S) / ROYALTY OWNER (R)	TAX PARCEL
1	LARRY G. RINE & JANA L. RINE (S)/ VERN STANSBURY & BESSIE L. STANSBERRY, (SHIRLEY A. PARKER; HOWARD G. STANSBERRY) (R)	01-05-01
TRACT	SURFACE OWNER	TAX PARCEL
2	VENCIN HARLAN (S)	01-04-13
3	VENCIN HARLAN (S)	01-04-10
4	SHAWN D. HARLAN & VENCIN HARLAN (S)	01-01-08
5	MARTIN R. WHITEMAN & LISA KAY WHITEMAN (S)	01-04-06
6	THOMAS J. BILINOVICH (S)	01-01-04
7	ROBERT R. REYNOLDS & DONNA D. REYNOLDS (S)	01-01-03
8	FRED S. WILKERSON (S)	01-01-01
9	MASON DIXON FARMS, LLC (S)	07-29-16
ADJOINING OWNERS TABLE		
TRACT	SURFACE OWNER	TAX PARCEL
A	LARRY G. RINE & JANA L. RINE	01-05-3.1
B	SUSAN L. THOMAS & JOHN F. THOMAS JR. L/E VENCIN HARLAN	01-04-12
C	VENCIN HARLAN	01-04-11
D	VENCIN HARLAN	01-04-09
E	RONALD CLARK GEHO & SANDRA SUE GEHO	01-04-08
F	MARTIN R. WHITEMAN & LISA K. WHITEMAN	01-04-07
G	MARTIN R. WHITEMAN & LISA K. WHITEMAN	01-04-04
H	RONALD CLARK GEHO & SANDRA S. GEHO	01-04-03
I	ARTHUR DURIG, LIFE ESTATE; DANIEL DURIG REMAINDERMAN	12-05-06
J	MASON DIXON FARMS, LLC	07-29-14
K	ALAN W. STERN	07-28-12
L	MASON DIXON FARMS, LLC	07-28-10
M	MASON DIXON FARMS, LLC	07-28-15
N	UNKNOWN HEIRS OR ASSIGNS OF J.J JOHNSON & ROSA MILLER	01-01-5
O	THOMAS S. WYKERT & VERNA LOUISE WYKERT	01-01-7
P	MARY E. PYLES	01-02-7

03/30/2018

<b>REVISIONS:</b> A REVISED DHP 03-07-2018 A REVISED TVD, TMD, & OWNERSHIP OF PARCEL 01-04-12 03-13-2018	<b>COMPANY:</b>  	<b>DATE:</b> 12-07-2017
<b>OPERATOR'S</b> RINE WTZ	<b>WELL #:</b> 1H	<b>DRAWN BY:</b> N. MANO
<b>DISTRICT:</b> CENTER	<b>COUNTY:</b> WETZEL	<b>SCALE:</b> N/A
<b>STATE:</b> WV	<b>DRAWING NO:</b>	<b>WELL LOCATION PLAT 2</b>

WW-6A1  
(5/13)

Operator's Well No. RINE WTZ 1H

**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
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**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:   
 Its: Staff Landman

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**EXHIBIT "A"**

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Rine WTZ 1H

#	TMP	LEASE #	LESSOR	LESSEE	ROYALTY	BK/PG
1	1-5-1	724407-000	Vern Stansberry and Bessie L. Stansberry, his wife (Shirley A. Parker; Howard G. Stansberry) Manufacturers Light and Heat Company Columbia Gas Transmission Corporation Columbia Natural Resources, LLC Chesapeake Appalachia, L.L.C.	The Manufacturers Light and Heat Company  Columbia Gas Transmission Corporation Columbia Natural Resources, LLC Chesapeake Appalachia, L.L.C. SWN Production Company, LLC	12.50%	45A/173  263/164 84A/129 402/446 157A/540
2	1-4-13	722919-001	Chesapeake Appalachia, L.L.C. (Stone Hill Mineral Holdings, LLC)	SWN Production Company, LLC	12.50%	157A/616
2	1-4-13	723836-000	Denise M. Ramsey, a single woman Chesapeake Appalachia, L.L.C.	Chesapeake Appalachia, L.L.C. SWN Production Company, LLC	12.50%	110A/219 157A/540
2	1-4-13	723837-001	Dean A. Blake, a married man dealing in his sole and separate property Chesapeake Appalachia, L.L.C.	Chesapeake Appalachia, L.L.C. SWN Production Company, LLC	12.50%	89A/713 157A/540
2	1-4-13	723837-002	Robert K. Miller, a/k/a Robert Miller and Susan Miller, his wife (Susan Miller) Chesapeake Appalachia, L.L.C.	Chesapeake Appalachia, L.L.C. SWN Production Company, LLC	12.50%	90A/7 157A/540
2	1-4-13	723837-003	Rosemary Miller, f/k/a Rosemary Heslop, a single woman (Rosemary Miller, life estate; Susan Miller, Remainderman) Chesapeake Appalachia, L.L.C.	Chesapeake Appalachia, L.L.C. SWN Production Company, LLC	12.50%	89A/716 157A/540
2	1-4-13	723837-004	Evelyn Faye Spencer, a/k/a Faye Spencer, a married woman (Susan Miller)	Chesapeake Appalachia, L.L.C.	12.50%	90A/4

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Rine WZT 1H

			Chesapeake Appalachia, L.L.C.	Wetzel and Marsha	SWN Production Company, LLC		157A/540
2	1-4-13	723837-005	Shiben Estates, Inc., a West Virginia corporation		Chesapeake Appalachia, L.L.C.	12.50%	102A/86
			Chesapeake Appalachia, L.L.C.		SWN Production Company, LLC		157A/540
2	1-4-13	723837-006	Carl R. Miller, a/k/a Richard Miller (Mickie I. Byrd)		Chesapeake Appalachia, L.L.C.	12.50%	103A/571
			Chesapeake Appalachia, L.L.C.		SWN Production Company, LLC		157A/540
2	1-4-13	723837-007	Donna R. Miller, a/k/a Donna Miller Comisso, a/k/a Donna R. Diserio and John Kevan Diserio, her husband		Chesapeake Appalachia, L.L.C.	12.50%	104A/251
			Chesapeake Appalachia, L.L.C.		SWN Production Company, LLC		157A/540
2	1-4-13	723837-008	Margaret E. Miller-Rea, a/k/a Margaret E. Miller, and Michael D. Rea, her husband		Chesapeake Appalachia, L.L.C.	12.50%	104A/982
			Chesapeake Appalachia, L.L.C.		SWN Production Company, LLC		157A/540
2	1-4-13	723837-009	Josephine K. Crane (Loretta J. Mitchell)		Chesapeake Appalachia, L.L.C.	12.50%	104A/248
			Chesapeake Appalachia, L.L.C.		SWN Production Company, LLC		157A/540
2	1-4-13	723837-010	Nila L. Snider, a single woman (Julie Dawn Snider; Scott Eric Snider; Brent Alan Snider; Bryan Glen Snider; Kimela Ann Matthews)		Chesapeake Appalachia, L.L.C.	12.50%	106A/745
			Chesapeake Appalachia, L.L.C.		SWN Production Company, LLC		157A/540
2	1-4-13	723837-011	Shirley Terek, a/k/a Shirley Fitzsimmons Terek, a widow		Chesapeake Appalachia, L.L.C.	12.50%	106A/748
			Chesapeake Appalachia, L.L.C.		SWN Production Company, LLC		157A/540
2	1-4-13	723837-012	Laverne Rogerson, a married woman dealing in her sole and separate property		Chesapeake Appalachia, L.L.C.	12.50%	107A/450
			Chesapeake Appalachia, L.L.C.		SWN Production Company, LLC		157A/540

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Rine WTZ 1H

2	1-4-13	723837-013	Nellie Ramsey Wise, a widow (Hester Wise) Chesapeake Appalachia, L.L.C.	Wetzel and Marsha Chesapeake Appalachia, L.L.C. SWN Production Company, LLC	12.50%	107A/640 157A/540
2	1-4-13	723837-014	Hilda V. Davies, a widow Chesapeake Appalachia, L.L.C.	Chesapeake Appalachia, L.L.C. SWN Production Company, LLC	12.50%	107A/462 157A/540
2	1-4-13	723837-015	Sherry Jean Ramsey, a single woman Chesapeake Appalachia, L.L.C.	Chesapeake Appalachia, L.L.C. SWN Production Company, LLC	12.50%	107A/459 157A/540
2	1-4-13	723837-016	Quentin A. Yocum, a married man dealing in his sole and spearate property Chesapeake Appalachia, L.L.C.	Chesapeake Appalachia, L.L.C. SWN Production Company, LLC	12.50%	107A/456 157A/540
2	1-4-13	723837-017	Nora Romanoski, a widow (Unknown Heirs or Assigns of Nora Romanoski) Chesapeake Appalachia, L.L.C.	Chesapeake Appalachia, L.L.C. SWN Production Company, LLC	12.50%	107A/453 157A/540
2	1-4-13	723837-018	Stanley D. Jackson, a married man dealing in his sole and spearate property Chesapeake Appalachia, L.L.C.	Chesapeake Appalachia, L.L.C. SWN Production Company, LLC	12.50%	107A/567 157A/540
2	1-4-13	723837-019	Ethel Faye Miller, a widow (Janet Reid; Norma Shelton) Chesapeake Appalachia, L.L.C.	Chesapeake Appalachia, L.L.C. SWN Production Company, LLC	12.50%	107A/570 157A/540
2	1-4-13	723837-020	Terrell N. Ramsey, a married man dealing in his sole and spearate property Chesapeake Appalachia, L.L.C.	Chesapeake Appalachia, L.L.C. SWN Production Company, LLC	12.50%	107A/588 157A/540
2	1-4-13	723837-021	Elden W. Jackson, a married man dealing in his sole and spearate property Chesapeake Appalachia, L.L.C.	Chesapeake Appalachia, L.L.C. SWN Production Company, LLC	12.50%	107A/923 157A/540

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2	1-4-13	723837-022	Eva Lee Ramsey, a widow (Veneta Loy Cunningham; Edward Everett Loy; Ernest Eugene Loy; Daisy L. McIvain) Chesapeake Appalachia, L.L.C.	Wetzel and Marsha Chesapeake Appalachia, L.L.C.	SWN Production Company, LLC	12.50%	107A/619 157A/540
2	1-4-13	723837-025	Brett Berisford, a single man Chesapeake Appalachia, L.L.C.	Chesapeake Appalachia, L.L.C.	SWN Production Company, LLC	12.50%	107A/836 157A/540
2	1-4-13	723837-026	Chris Berisford, a/k/a Lt. Chris Berisford, a single man Chesapeake Appalachia, L.L.C.	Chesapeake Appalachia, L.L.C.	SWN Production Company, LLC	12.50%	108A/289 157A/540
2	1-4-13	723837-035	Grace Yoho, a widow (Black Gold Group; Tanya Mullen) Chesapeake Appalachia, L.L.C.	Chesapeake Appalachia, L.L.C.	SWN Production Company, LLC	12.50%	109A/697 157A/540
2	1-4-13	723837-039	Robert D. Ramsey, Jr., a married man dealing in his sole and separate property Chesapeake Appalachia, L.L.C.	Chesapeake Appalachia, L.L.C.	SWN Production Company, LLC	12.50%	107A/827 157A/540
2	1-4-13	723837-040	Dean P. Ramsey, a married man dealing in his sole and separate property Chesapeake Appalachia, L.L.C.	Chesapeake Appalachia, L.L.C.	SWN Production Company, LLC	12.50%	107A/830 157A/540
2	1-4-13	723837-041	Kathy Skaggs, a single woman Chesapeake Appalachia, L.L.C.	Chesapeake Appalachia, L.L.C.	SWN Production Company, LLC	12.50%	108A/550 157A/540
2	1-4-13	723837-042	Dean D. Ramsey, JR., a single man (Patricia J. Ramsey) Chesapeake Appalachia, L.L.C.	Chesapeake Appalachia, L.L.C.	SWN Production Company, LLC	12.50%	108A/547 157A/540
2	1-4-13	723837-043	Darrell Ramsey, SR., a married man dealing in his sole and separate property Chesapeake Appalachia, L.L.C.	Chesapeake Appalachia, L.L.C.	SWN Production Company, LLC	12.50%	108A/544 157A/540
2	1-4-13	723837-044	Bradley Long, a single man	Chesapeake Appalachia, L.L.C.	SWN Production Company, LLC	12.50%	108A/556

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			Chesapeake Appalachia, L.L.C.	Wetzel and Marsha	SWN Production Company, LLC		157A/540
2	1-4-13	723837-045	Grace Long, a widow (Grace Long (Dower); Bradley Long and Nicole Black (Remaindermen))		Chesapeake Appalachia, L.L.C.	12.50%	108A/559
			Chesapeake Appalachia, L.L.C.		SWN Production Company, LLC		157A/540
2	1-4-13	723837-046	Nicole Black, a married woman dealing in her sole and separate property		Chesapeake Appalachia, L.L.C.	12.50%	108A/553
			Chesapeake Appalachia, L.L.C.		SWN Production Company, LLC		157A/540
2	1-4-13	723837-047	Mark Vincent, a single man		Chesapeake Appalachia, L.L.C.	12.50%	108A/586
			Chesapeake Appalachia, L.L.C.		SWN Production Company, LLC		157A/540
2	1-4-13	723837-048	Dorothy Degenova, a married woman dealing in her sole and separate property (Louis Degenova)		Chesapeake Appalachia, L.L.C.	12.50%	109A/842
			Chesapeake Appalachia, L.L.C.		SWN Production Company, LLC		157A/540
2	1-4-13	723837-049	Randy Ramsey, JR., a single man		Chesapeake Appalachia, L.L.C.	12.50%	109A/860
			Chesapeake Appalachia, L.L.C.		SWN Production Company, LLC		157A/540
2	1-4-13	723837-050	Tamara Warner, a married woman dealing in her sole and separate property (Three Gold Resources)		Chesapeake Appalachia, L.L.C.	12.50%	114A/285
			Chesapeake Appalachia, L.L.C.		SWN Production Company, LLC		157A/540
2	1-4-13	723837-051	Reba Joan Carpenter, f/k/a Reba Joann Matthews, a/k/a Reba Joan Matthews, a single woman (Verna Jo Jones)		Chesapeake Appalachia, L.L.C.	12.50%	109A/863
			Chesapeake Appalachia, L.L.C.		SWN Production Company, LLC		157A/540
2	1-4-13	723837-052	Sharon L. Morris, a married woman dealing in her sole and separate property		Chesapeake Appalachia, L.L.C.	12.50%	115A/150
			Chesapeake Appalachia, L.L.C.		SWN Production Company, LLC		157A/540

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2	1-4-13	723837-053	Donita M. Wells, a married woman dealing in her sole and separate property Chesapeake Appalachia, L.L.C.	Wetland Marsh Chesapeake Appalachia, L.L.C.	Chesapeake Appalachia, L.L.C.	12.50%	115A/153
					SWN Production Company, LLC		157A/540
2	1-4-13	723837-054	Reba J. Boso, a single woman Chesapeake Appalachia, L.L.C.		Chesapeake Appalachia, L.L.C.	12.50%	110A/35
					SWN Production Company, LLC		157A/540
2	1-4-13	723837-055	Kristan P. Jones, a single woman Chesapeake Appalachia, L.L.C.		Chesapeake Appalachia, L.L.C.	12.50%	109A/20
					SWN Production Company, LLC		157A/540
2	1-4-13	723837-056	Kevin N. Jones, a single man Chesapeake Appalachia, L.L.C.		Chesapeake Appalachia, L.L.C.	12.50%	108A/990
					SWN Production Company, LLC		157A/540
2	1-4-13	723837-057	James L. Haynes, a single man Chesapeake Appalachia, L.L.C.		Chesapeake Appalachia, L.L.C.	12.50%	110A/290
					SWN Production Company, LLC		157A/540
2	1-4-13	723837-058	Julianna E. Hiss, a single woman Chesapeake Appalachia, L.L.C.		Chesapeake Appalachia, L.L.C.	12.50%	110A/275
					SWN Production Company, LLC		157A/540
2	1-4-13	723837-059	William Long, a married man dealing in his sole and separate property Chesapeake Appalachia, L.L.C.		Chesapeake Appalachia, L.L.C.	12.50%	110A/284
					SWN Production Company, LLC		157A/540
2	1-4-13	723837-060	Lisa J. Mountz, a single woman Chesapeake Appalachia, L.L.C.		Chesapeake Appalachia, L.L.C.	12.50%	115A/147
					SWN Production Company, LLC		157A/540
2	1-4-13	723837-061	Herbert Long, JR., a single man Chesapeake Appalachia, L.L.C.		Chesapeake Appalachia, L.L.C.	12.50%	110A/281
					SWN Production Company, LLC		157A/540
2	1-4-13	723837-062	Virginia Brown, a married woman dealing in her sole and separate property Chesapeake Appalachia, L.L.C.		Chesapeake Appalachia, L.L.C.	12.50%	110A/287
					SWN Production Company, LLC		157A/540
2	1-4-13	723837-063	Charles Thomas Long, SR., a single man Chesapeake Appalachia, L.L.C.		Chesapeake Appalachia, L.L.C.	12.50%	110A/278
					SWN Production Company, LLC		157A/540
2	1-4-13	723837-064	Katherine Smith, a married woman dealing in her sole and separate property		Chesapeake Appalachia, L.L.C.	12.50%	110A/231

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			Chesapeake Appalachia, L.L.C.	Wetzel and Marsha	SWN Production Company, LLC		157A/540
2	1-4-13	723837-065	Rebecca L. Blair, a married woman dealing in her sole and separate property		Chesapeake Appalachia, L.L.C.	12.50%	110A/213
			Chesapeake Appalachia, L.L.C.		SWN Production Company, LLC		157A/540
2	1-4-13	723837-066	Keith Haynes, a single man		Chesapeake Appalachia, L.L.C.	12.50%	110A/216
			Chesapeake Appalachia, L.L.C.		SWN Production Company, LLC		157A/540
2	1-4-13	723837-067	Wilbert R. Haynes, a single man		Chesapeake Appalachia, L.L.C.	12.50%	110A/738
			Chesapeake Appalachia, L.L.C.		SWN Production Company, LLC		157A/540
2	1-4-13	723837-068	Brian Haynes, a single man		Chesapeake Appalachia, L.L.C.	12.50%	111A/142
			Chesapeake Appalachia, L.L.C.		SWN Production Company, LLC		157A/540
2	1-4-13	723837-069	Ralph E. Haynes, a single man dealing in his sole and separate property		Chesapeake Appalachia, L.L.C.	12.50%	110A/410
			Chesapeake Appalachia, L.L.C.		SWN Production Company, LLC		157A/540
2	1-4-13	726606-001	BRC Appalachian Minerals I LLC (Collingwood Appalachian Minerals I, LLC; Collingwood Appalachian Minerals III, LLC; OXY USA)		BRC Working Interest Company, LLC	16.00%	103A/320
			BRC Working Interest Company, LLC		Chesapeake Appalachia, L.L.C.		103A/470
			Chesapeake Appalachia, L.L.C.		SWN Production Company, LLC		157A/540
2	1-4-13	744383-000	Chesapeake Appalachia, L.L.C. (Stone Hill Mineral Holdings, LLC)		SWN Production Company, LLC	12.50%	166A/931
2	1-4-13	723837-073	Garnet Gas Corporation		SWN Production Company, LLC	20.00%	193A/683
3	1-4-10	722919-001	Chesapeake Appalachia, L.L.C. (Stone Hill Mineral Holdings, LLC)		SWN Production Company, LLC	12.50%	157A/616
3	1-4-10	723836-000	Denise M. Ramsey, a single woman		Chesapeake Appalachia, L.L.C.	12.50%	110A/219
			Chesapeake Appalachia, L.L.C.		SWN Production Company, LLC		157A/540

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3	1-4-10	723837-001	Dean A. Blake, a married man dealing with separate property Chesapeake Appalachia, L.L.C.	Water and Marsh Chesapeake Appalachia, L.L.C.	12.50%	89A/713
				SWN Production Company, LLC		157A/540
3	1-4-10	723837-002	Robert K. Miller, a/k/a Robert Miller and Susan Miller, his wife (Susan Miller) Chesapeake Appalachia, L.L.C.	Chesapeake Appalachia, L.L.C.	12.50%	90A/7
				SWN Production Company, LLC		157A/540
3	1-4-10	723837-003	Rosemary Miller, f/k/a Rosemary Heslop, a single woman (Rosemary Miller, life estate; Susan Miller, Remainderman) Chesapeake Appalachia, L.L.C.	Chesapeake Appalachia, L.L.C.	12.50%	89A/716
				SWN Production Company, LLC		157A/540
3	1-4-10	723837-004	Evelyn Faye Spencer, a/k/a Faye Spencer, a married woman (Susan Miller) Chesapeake Appalachia, L.L.C.	Chesapeake Appalachia, L.L.C.	12.50%	90A/4
				SWN Production Company, LLC		157A/540
3	1-4-10	723837-006	Carl R. Miller, a/k/a Richard Miller (Mickie I. Byrd) Chesapeake Appalachia, L.L.C.	Chesapeake Appalachia, L.L.C.	12.50%	103A/571
				SWN Production Company, LLC		157A/540
3	1-4-10	723837-007	Donna R. Miller, a/k/a Donna Miller Comisso, a/k/a Donna R. Diserio and John Kevan Diserio, her husband Chesapeake Appalachia, L.L.C.	Chesapeake Appalachia, L.L.C.	12.50%	104A/251
				SWN Production Company, LLC		157A/540
3	1-4-10	723837-008	Margaret E. Miller-Rea, a/k/a Margaret E. Miller, and Michael D. Rea, her husband Chesapeake Appalachia, L.L.C.	Chesapeake Appalachia, L.L.C.	12.50%	104A/982
				SWN Production Company, LLC		157A/540
3	1-4-10	723837-009	Josephine K. Crane (Loretta J. Mitchell)	Chesapeake Appalachia, L.L.C.	12.50%	104A/248

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			Chesapeake Appalachia, L.L.C.	Wetzel and Marsha	SWN Production Company, LLC		157A/540
3	1-4-10	723837-010	Nifa L. Snider, a single woman (Julie Dawn Snider; Scott Eric Snider; Brent Alan Snider; Bryan Glen Snider; Kimela Ann Matthews)		Chesapeake Appalachia, L.L.C.	12.50%	106A/745
			Chesapeake Appalachia, L.L.C.		SWN Production Company, LLC		157A/540
3	1-4-10	723837-011	Shirley Terek, a/k/a Shirley Fitzsimmons Terek, a widow		Chesapeake Appalachia, L.L.C.	12.50%	106A/748
			Chesapeake Appalachia, L.L.C.		SWN Production Company, LLC		157A/540
3	1-4-10	723837-012	Laverne Rogerson, a married woman dealing in her sole and separate property		Chesapeake Appalachia, L.L.C.	12.50%	107A/450
			Chesapeake Appalachia, L.L.C.		SWN Production Company, LLC		157A/540
3	1-4-10	723837-013	Nellie Ramsey Wise, a widow (Hester Wise)		Chesapeake Appalachia, L.L.C.	12.50%	107A/640
			Chesapeake Appalachia, L.L.C.		SWN Production Company, LLC		157A/540
3	1-4-10	723837-014	Hilda V. Davies, a widow		Chesapeake Appalachia, L.L.C.	12.50%	107A/462
			Chesapeake Appalachia, L.L.C.		SWN Production Company, LLC		157A/540
3	1-4-10	723837-015	Sherry Jean Ramsey, a single woman		Chesapeake Appalachia, L.L.C.	12.50%	107A/459
			Chesapeake Appalachia, L.L.C.		SWN Production Company, LLC		157A/540
3	1-4-10	723837-016	Quentin A. Yocum, a married man dealing in his sole and separate property		Chesapeake Appalachia, L.L.C.	12.50%	107A/456
			Chesapeake Appalachia, L.L.C.		SWN Production Company, LLC		157A/540
3	1-4-10	723837-017	Nora Romanoski, a widow (Unknown Heirs or Assigns of Nora Romanoski)		Chesapeake Appalachia, L.L.C.	12.50%	107A/453
			Chesapeake Appalachia, L.L.C.		SWN Production Company, LLC		157A/540
3	1-4-10	723837-018	Stanley D. Jackson, a married man dealing in his sole and separate property		Chesapeake Appalachia, L.L.C.	12.50%	107A/567
			Chesapeake Appalachia, L.L.C.		SWN Production Company, LLC		157A/540

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3	1-4-10	723837-019	Ethel Faye Miller, a widow (Janet Reid; Norma Shelton) Chesapeake Appalachia, L.L.C.	Wetzel and Marsha Chesapeake Appalachia, L.L.C.	12.50%	107A/570
				SWN Production Company, LLC		157A/540
3	1-4-10	723837-020	Terrell N. Ramsey, a married man dealing in his sole and separate property Chesapeake Appalachia, L.L.C.	Chesapeake Appalachia, L.L.C.	12.50%	107A/588
				SWN Production Company, LLC		157A/540
3	1-4-10	723837-021	Elden W. Jackson, a married man dealing in his sole and separate property Chesapeake Appalachia, L.L.C.	Chesapeake Appalachia, L.L.C.	12.50%	107A/923
				SWN Production Company, LLC		157A/540
3	1-4-10	723837-022	Eva Lee Ramsey, a widow (Veneta Loy Cunningham; Edward Everett Loy; Ernest Eugene Loy; Daisy L. McIlvain) Chesapeake Appalachia, L.L.C.	Chesapeake Appalachia, L.L.C.	12.50%	107A/619
				SWN Production Company, LLC		157A/540
3	1-4-10	723837-023	Roberta Thelma Schramm, a widow Chesapeake Appalachia, L.L.C.	Chesapeake Appalachia, L.L.C.	12.50%	107A/884
				SWN Production Company, LLC		157A/540
3	1-4-10	723837-024	Phyllis Lavelle, a widow Chesapeake Appalachia, L.L.C.	Chesapeake Appalachia, L.L.C.	12.50%	107A/887
				SWN Production Company, LLC		157A/540
3	1-4-10	723837-025	Brett Berisford, a single man Chesapeake Appalachia, L.L.C.	Chesapeake Appalachia, L.L.C.	12.50%	107A/836
				SWN Production Company, LLC		157A/540
3	1-4-10	723837-026	Chris Berisford, a/k/a Lt. Chris Berisford, a single man  Chesapeake Appalachia, L.L.C.	Chesapeake Appalachia, L.L.C.	12.50%	108A/289
				SWN Production Company, LLC		157A/540
3	1-4-10	723837-027	Frank Vernon Fisher, a single man (Brenda L. Griffin) Chesapeake Appalachia, L.L.C.	Chesapeake Appalachia, L.L.C.	12.50%	108A/327
				SWN Production Company, LLC		157A/540
3	1-4-10	723837-028	Janet Faye Richman, a married woman dealing in her sole and separate property	Chesapeake Appalachia, L.L.C.	12.50%	107A/935

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			Chesapeake Appalachia, L.L.C.	Wetzel and Marshall County, West Virginia	SWN Production Company, LLC		157A/540
3	1-4-10	723837-029	Mary Marguerite Zabinski, a widow (Vickie L. Mullen, Jeffery Zabinski)		Chesapeake Appalachia, L.L.C.	12.50%	107A/527
			Chesapeake Appalachia, L.L.C.		SWN Production Company, LLC		157A/540
3	1-4-10	723837-030	Helen Leota November, a married woman dealing in her sole and separate property		Chesapeake Appalachia, L.L.C.	12.50%	107A/468
			Chesapeake Appalachia, L.L.C.		SWN Production Company, LLC		157A/540
3	1-4-10	723837-031	Donald Neil Crane, a single man		Chesapeake Appalachia, L.L.C.	12.50%	107A/465
			Chesapeake Appalachia, L.L.C.		SWN Production Company, LLC		157A/540
3	1-4-10	723837-032	Carol Sue Becker, a single woman (Terry A. Mascoll; Tracey S. Batchelder; Douglas A. Umpleby)		Chesapeake Appalachia, L.L.C.	12.50%	107A/471
			Chesapeake Appalachia, L.L.C.		SWN Production Company, LLC		157A/540
3	1-4-10	723837-033	Maxine Louise Beckner, a single woman (Dan S. Beckner)		Chesapeake Appalachia, L.L.C.	12.50%	107A/474
			Chesapeake Appalachia, L.L.C.		SWN Production Company, LLC		157A/540
3	1-4-10	723837-034	Debra Elaine Myers, a married woman dealing in her sole and separate property		Chesapeake Appalachia, L.L.C.	12.50%	107A/477
			Chesapeake Appalachia, L.L.C.		SWN Production Company, LLC		157A/540
3	1-4-10	723837-035	Grace Yoho, a widow (Black Gold Group; Tanya Mullen)		Chesapeake Appalachia, L.L.C.	12.50%	109A/697
			Chesapeake Appalachia, L.L.C.		SWN Production Company, LLC		157A/540
3	1-4-10	723837-036	Joyce M. Everitt, f/k/a Joyce M. Simpson, a married woman dealing in her sole and separate property		Chesapeake Appalachia, L.L.C.	12.50%	107A/622
			Chesapeake Appalachia, L.L.C.		SWN Production Company, LLC		157A/540

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3	1-4-10	723837-037	Patti Morrow, f/k/a Patti Simpson, a married woman dealing in her sole and separate property Chesapeake Appalachia, L.L.C.	Wetzel and Marshall County, West Virginia Chesapeake Appalachia, L.L.C.	12.50%	107A/824
				SWN Production Company, LLC		157A/540
3	1-4-10	723837-038	Larry R. Simpson, a married man dealing in his sole and separate property Chesapeake Appalachia, L.L.C.	Chesapeake Appalachia, L.L.C.	12.50%	107A/833
				SWN Production Company, LLC		157A/540
3	1-4-10	723837-039	Robert D. Ramsey, Jr., a married man dealing in his sole and separate property Chesapeake Appalachia, L.L.C.	Chesapeake Appalachia, L.L.C.	12.50%	107A/827
				SWN Production Company, LLC		157A/540
3	1-4-10	723837-040	Dean P. Ramsey, a married man dealing in his sole and separate property Chesapeake Appalachia, L.L.C.	Chesapeake Appalachia, L.L.C.	12.50%	107A/830
				SWN Production Company, LLC		157A/540
3	1-4-10	723837-041	Kathy Skaggs, a single woman Chesapeake Appalachia, L.L.C.	Chesapeake Appalachia, L.L.C.	12.50%	108A/550
				SWN Production Company, LLC		157A/540
3	1-4-10	723837-042	Dean D. Ramsey, JR., a single man (Patricia J. Ramsey) Chesapeake Appalachia, L.L.C.	Chesapeake Appalachia, L.L.C.	12.50%	108A/547
				SWN Production Company, LLC		157A/540
3	1-4-10	723837-043	Darrell Ramsey, SR., a married man dealing in his sole and separate property Chesapeake Appalachia, L.L.C.	Chesapeake Appalachia, L.L.C.	12.50%	108A/544
				SWN Production Company, LLC		157A/540
3	1-4-10	723837-044	Bradley Long, a single man Chesapeake Appalachia, L.L.C.	Chesapeake Appalachia, L.L.C.	12.50%	108A/556
				SWN Production Company, LLC		157A/540
3	1-4-10	723837-045	Grace Long, a widow (Grace Long (Dower); Bradley Long and Nicole Black (Remaindermen)) Chesapeake Appalachia, L.L.C.	Chesapeake Appalachia, L.L.C.	12.50%	108A/559
				SWN Production Company, LLC		157A/540

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3	1-4-10	723837-046	Nicole Black, a married woman dealing in her sole and separate property Chesapeake Appalachia, L.L.C.	Westland Marsha Chesapeake Appalachia, L.L.C. SWN Production Company, LLC	12.50%	108A/553 157A/540
3	1-4-10	723837-047	Mark Vincent, a single man Chesapeake Appalachia, L.L.C.	Chesapeake Appalachia, L.L.C. SWN Production Company, LLC	12.50%	108A/586 157A/540
3	1-4-10	723837-048	Dorothy Degenova, a married woman dealing in her sole and separate property (Louis Degenova) Chesapeake Appalachia, L.L.C.	Chesapeake Appalachia, L.L.C. SWN Production Company, LLC	12.50%	109A/842 157A/540
3	1-4-10	723837-049	Randy Ramsey, JR., a single man Chesapeake Appalachia, L.L.C.	Chesapeake Appalachia, L.L.C. SWN Production Company, LLC	12.50%	109A/860 157A/540
3	1-4-10	723837-050	Tamara Warner, a married woman dealing in her sole and separate property (Three Gold Resources) Chesapeake Appalachia, L.L.C.	Chesapeake Appalachia, L.L.C. SWN Production Company, LLC	12.50%	114A/285 157A/540
3	1-4-10	723837-051	Reba Joan Carpenter, f/k/a Reba Joann Matthews, a/k/a Reba Joan Matthews, a single woman (Verna Jo Jones) Chesapeake Appalachia, L.L.C.	Chesapeake Appalachia, L.L.C. SWN Production Company, LLC	12.50%	109A/863 157A/540
3	1-4-10	723837-052	Sharon L. Morris, a married woman dealing in her sole and separate property Chesapeake Appalachia, L.L.C.	Chesapeake Appalachia, L.L.C. SWN Production Company, LLC	12.50%	115A/150 157A/540
3	1-4-10	723837-053	Donita M. Wells, a married woman dealing in her sole and separate property Chesapeake Appalachia, L.L.C.	Chesapeake Appalachia, L.L.C. SWN Production Company, LLC	12.50%	115A/153 157A/540
3	1-4-10	723837-054	Reba J. Boso, a single woman Chesapeake Appalachia, L.L.C.	Chesapeake Appalachia, L.L.C. SWN Production Company, LLC	12.50%	110A/35 157A/540

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3	1-4-10	723837-055	Kristan P. Jones, a single woman Chesapeake Appalachia, L.L.C.	Wetzel and Marsha Chesapeake Appalachia, L.L.C.	Chesapeake Appalachia, L.L.C. SWN Production Company, LLC	12.50%	109A/20 157A/540
3	1-4-10	723837-056	Kevin N. Jones, a single man Chesapeake Appalachia, L.L.C.		Chesapeake Appalachia, L.L.C. SWN Production Company, LLC	12.50%	108A/990 157A/540
3	1-4-10	723837-057	James L. Haynes, a single man Chesapeake Appalachia, L.L.C.		Chesapeake Appalachia, L.L.C. SWN Production Company, LLC	12.50%	110A/290 157A/540
3	1-4-10	723837-058	Julianna E. Hiss, a single woman Chesapeake Appalachia, L.L.C.		Chesapeake Appalachia, L.L.C. SWN Production Company, LLC	12.50%	110A/275 157A/540
3	1-4-10	723837-059	William Long, a married man dealing in his sole and separate property Chesapeake Appalachia, L.L.C.		Chesapeake Appalachia, L.L.C. SWN Production Company, LLC	12.50%	110A/284 157A/540
3	1-4-10	723837-060	Lisa J. Mountz, a single woman Chesapeake Appalachia, L.L.C.		Chesapeake Appalachia, L.L.C. SWN Production Company, LLC	12.50%	115A/147 157A/540
3	1-4-10	723837-061	Herbert Long, JR., a single man Chesapeake Appalachia, L.L.C.		Chesapeake Appalachia, L.L.C. SWN Production Company, LLC	12.50%	110A/281 157A/540
3	1-4-10	723837-062	Virginia Brown, a married woman dealing in her sole and separate property Chesapeake Appalachia, L.L.C.		Chesapeake Appalachia, L.L.C. SWN Production Company, LLC	12.50%	110A/287 157A/540
3	1-4-10	723837-063	Charles Thomas Long, SR., a single man Chesapeake Appalachia, L.L.C.		Chesapeake Appalachia, L.L.C. SWN Production Company, LLC	12.50%	110A/278 157A/540
3	1-4-10	723837-064	Katherine Smith, a married woman dealing in her sole and separate property Chesapeake Appalachia, L.L.C.		Chesapeake Appalachia, L.L.C. SWN Production Company, LLC	12.50%	110A/231 157A/540
3	1-4-10	723837-065	Rebecca L. Blair, a married woman dealing in her sole and separate property Chesapeake Appalachia, L.L.C.		Chesapeake Appalachia, L.L.C. SWN Production Company, LLC	12.50%	110A/213 157A/540
3	1-4-10	723837-066	Keith Haynes, a single man		Chesapeake Appalachia, L.L.C.	12.50%	110A/216

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			Chesapeake Appalachia, L.L.C.	Wetzel and Marsha	SWN Production Company, LLC		157A/540
3	1-4-10	723837-067	Wilbert R. Haynes, a single man		Chesapeake Appalachia, L.L.C.	12.50%	110A/738
			Chesapeake Appalachia, L.L.C.		SWN Production Company, LLC		157A/540
3	1-4-10	723837-068	Brian Haynes, a single man		Chesapeake Appalachia, L.L.C.	12.50%	111A/142
			Chesapeake Appalachia, L.L.C.		SWN Production Company, LLC		157A/540
3	1-4-10	723837-069	Ralph E. Haynes, a single man dealing in his sole and separate property		Chesapeake Appalachia, L.L.C.	12.50%	110A/410
			Chesapeake Appalachia, L.L.C.		SWN Production Company, LLC		157A/540
3	1-4-10	726606-001	BRC Appalachian Minerals I LLC (Collingwood Appalachian Minerals I, LLC; Collingwood Appalachian Minerals III, LLC; OXY USA)		BRC Working Interest Company, LLC	16.00%	103A/320
			BRC Working Interest Company, LLC		Chesapeake Appalachia, L.L.C.		103A/470
			Chesapeake Appalachia, L.L.C.		SWN Production Company, LLC		157A/540
3	1-4-10	744383-000	Chesapeake Appalachia, L.L.C. (Stone Hill Mineral Holdings, LLC)		SWN Production Company, LLC	12.50%	166A/931
3	1-4-10	723837-070	Shiben Estates, Inc., a West Virginia corporation		SWN Production Company, LLC	20.00%	188A/95
3	1-4-10	723837-073	Garnet Gas Corporation		SWN Production Company, LLC	20.00%	193A/683
4	1-1-8	724409-000	O. W. Yeater and Ethel Yeater, his wife; Woodrow M. Yeater and Barbara L. Yeater, his wife (Rex Eugene Bungard; Nancy Truex; Linda Kay Morris Wilson; Hubert Morris; Hester Loretta Dugan; Donna Sue Richmond; Terry Wilson Yeater; Sharon Yeater; Rickey Yeater and Carol Yeater, husband and wife; Janet Hilpert)		The Manufacturers Light and Heat Company	12.50%	47A/161
			Manufacturers Light and Heat Company		Columbia Gas Transmission Corporation		263/164
			Columbia Gas Transmission Corporation		Columbia Natural Resources, LLC		84A/129

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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  
Rine WTZ 1H

			Columbia Natural Resources, LLC	Wetzel and Marsha	Chesapeake Appalachia, L.L.C.		402/446
			Chesapeake Appalachia, L.L.C.		SWN Production Company, LLC		157A/540
5	1-4-6	724767-001	Nancy S. Warmuth, a widow (Brian L. Warmuth)		Chesapeake Appalachia, L.L.C.	12.50%	94A/777
			Chesapeake Appalachia, L.L.C.		SWN Production Company, LLC		157A/540
5	1-4-6	724767-002	Julia A. Cain, a widow		Chesapeake Appalachia, L.L.C.	12.50%	94A/774
			Chesapeake Appalachia, L.L.C.		SWN Production Company, LLC		157A/540
5	1-4-6	724767-003	John C. Richards and Sonia M. Richards, his wife		Chesapeake Appalachia, L.L.C.	12.50%	94A/907
			Chesapeake Appalachia, L.L.C.		SWN Production Company, LLC		157A/540
6	1-1-4	724410-000	J. N. Pyles and Iva B. Pyles, his wife (George H. Pyles)		The Manufacturers Light and Heat Company	12.50%	45A/157
			Manufacturers Light and Heat Company		Columbia Gas Transmission Corporation		263/164
			Columbia Gas Transmission Corporation		Columbia Natural Resources, LLC		84A/129
			Columbia Natural Resources, LLC		Chesapeake Appalachia, L.L.C.		402/446
			Chesapeake Appalachia, L.L.C.		SWN Production Company, LLC		157A/540
7	1-1-3	724410-000	J. N. Pyles and Iva B. Pyles, his wife (George H. Pyles)		The Manufacturers Light and Heat Company	12.50%	45A/157
			Manufacturers Light and Heat Company		Columbia Gas Transmission Corporation		263/164
			Columbia Gas Transmission Corporation		Columbia Natural Resources, LLC		84A/129
			Columbia Natural Resources, LLC		Chesapeake Appalachia, L.L.C.		402/446
			Chesapeake Appalachia, L.L.C.		SWN Production Company, LLC		157A/540
8	1-1-1	724702-001	Wayne Karnhaus, a single man		Chesapeake Appalachia, L.L.C.	12.50%	93A/940

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			Chesapeake Appalachia, L.L.C.	Wetzel and Marsha	SWN Production Company, LLC		157A/540
8	1-1-1	724702-002	Donald Karnhaus, a single man		Chesapeake Appalachia, L.L.C.	12.50%	93A/937
			Chesapeake Appalachia, L.L.C.		SWN Production Company, LLC		157A/540
8	1-1-1	724702-003	Terry Brooks, a married man dealing in his sole and separate property		Chesapeake Appalachia, L.L.C.	12.50%	94A/204
			Chesapeake Appalachia, L.L.C.		SWN Production Company, LLC		157A/540
8	1-1-1	724702-004	Eula L. Church, a single woman		Chesapeake Appalachia, L.L.C.	12.50%	94A/201
			Chesapeake Appalachia, L.L.C.		SWN Production Company, LLC		157A/540
8	1-1-1	724702-005	Fred S. Wilkerson, a married man dealing in his sole and separate property		Chesapeake Appalachia, L.L.C.	12.50%	94A/547
			Chesapeake Appalachia, L.L.C.		SWN Production Company, LLC		157A/540
9	7-29-16	746399-000	Mason Dixon Farms, L.L.C.		SWN Production Company, LLC	18.00%	883/465

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

November 14, 2017

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: Rine WTZ 1H in Wetzel County, West Virginia, Drilling under Johnson Ridge Road & Laurel Run 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 Johnson Ridge Road & Laurel Run 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,

Gary Nuckolls  
Staff Landman  
SWN Production Company, LLC

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

09/30/2018

**STATE OF WEST VIRGINIA  
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS  
NOTICE CERTIFICATION**

Date of Notice Certification: 12/13/17

API No. 47- 103 -  
Operator's Well No. Rine WTZ 1H  
Well Pad Name: Rine WTZ Pad

**Notice has been given:**

Pursuant to the provisions in West Virginia Code § 22-6A, the Operator has provided the required parties with the Notice Forms listed below for the tract of land as follows:

State: <u>West Virginia</u>	UTM NAD 83 Easting: <u>533495.180</u>
County: <u>103-Wetzel</u>	Northing: <u>4395822.852</u>
District: <u>Center</u>	Public Road Access: <u>Miller Ridge</u>
Quadrangle: <u>Littleton</u>	Generally used farm name: <u>Rine</u>
Watershed: <u>Little Laurel Run of Fish Creek</u>	

Pursuant to West Virginia Code § 22-6A-7(b), every permit application filed under this section shall be on a form as may be prescribed by the secretary, shall be verified and shall contain the following information: (14) A certification from the operator that (i) it has provided the owners of the surface described in subdivisions (1), (2) and (4), subsection (b), section ten of this article, the information required by subsections (b) and (c), section sixteen of this article; (ii) that the requirement was deemed satisfied as a result of giving the surface owner notice of entry to survey pursuant to subsection (a), section ten of this article six-a; or (iii) the notice requirements of subsection (b), section sixteen of this article were waived in writing by the surface owner; and Pursuant to West Virginia Code § 22-6A-11(b), the applicant shall tender proof of and certify to the secretary that the notice requirements of section ten of this article have been completed by the applicant.

Pursuant to West Virginia Code § 22-6A, the Operator has attached proof to this Notice Certification that the Operator has properly served the required parties with the following:  *PLEASE CHECK ALL THAT APPLY  <input type="checkbox"/> 1. NOTICE OF SEISMIC ACTIVITY or <input checked="" type="checkbox"/> NOTICE NOT REQUIRED BECAUSE NO SEISMIC ACTIVITY WAS CONDUCTED  <input checked="" type="checkbox"/> 2. NOTICE OF ENTRY FOR PLAT SURVEY or <input type="checkbox"/> NO PLAT SURVEY WAS CONDUCTED  <input checked="" type="checkbox"/> 3. NOTICE OF INTENT TO DRILL or <input type="checkbox"/> NOTICE NOT REQUIRED BECAUSE NOTICE OF ENTRY FOR PLAT SURVEY WAS CONDUCTED or  <input type="checkbox"/> WRITTEN WAIVER BY SURFACE OWNER (PLEASE ATTACH)  <input checked="" type="checkbox"/> 4. NOTICE OF PLANNED OPERATION  <input checked="" type="checkbox"/> 5. PUBLIC NOTICE  <input checked="" type="checkbox"/> 6. NOTICE OF APPLICATION		<p align="center"><b>OOG OFFICE USE ONLY</b></p> <input type="checkbox"/> RECEIVED/ NOT REQUIRED  <input checked="" type="checkbox"/> RECEIVED  <input checked="" type="checkbox"/> RECEIVED/ NOT REQUIRED  <input checked="" type="checkbox"/> RECEIVED  <input checked="" type="checkbox"/> RECEIVED  <input checked="" type="checkbox"/> RECEIVED
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**Required Attachments:**

The Operator shall attach to this Notice Certification Form all Notice Forms and Certifications of Notice that have been provided to the required parties and/or any associated written waivers. For the Public Notice, the operator shall attach a copy of the Class II Legal Advertisement with publication date verification or the associated Affidavit of Publication. The attached Notice Forms and Certifications of Notice shall serve as proof that the required parties have been noticed as required under West Virginia Code § 22-6A. Pursuant to West Virginia Code § 22-6A-11(b), the Certification of Notice to the person may be made by affidavit of personal service, the return receipt card or other postal receipt for certified mailing.

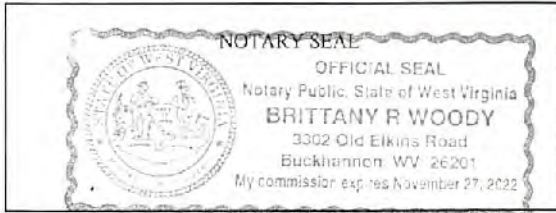
WW-6AC  
(1/12)

**Certification of Notice is hereby given:**

THEREFORE, I Dee Southall, have read and understand the notice requirements within West Virginia Code § 22-6A. I certify that as required under West Virginia Code § 22-6A, I have served the attached copies of the Notice Forms, identified above, to the required parties through personal service, by registered mail or by any method of delivery that requires a receipt or signature confirmation. I certify under penalty of law that I have personally examined and am familiar with the information submitted in this Notice Certification and all attachments, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

Well Operator: SWN Production Co., LLC  
By: Dee Southall  
Its: Senior Regulatory Analyst  
Telephone: 304-884-1610

Address: P.O. Box 1300  
Jane Lew, WV 26378  
Facsimile: 304-884-1690  
Email: Dee\_Southall@swn.com



Subscribed and sworn before me this 3rd day of November 2017  
Brittany R Woody Notary Public  
My Commission Expires 11/27/22

**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](mailto:depprivacyofficer@wv.gov).

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STATE OF WEST VIRGINIA  
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS  
NOTICE OF APPLICATION

Notice Time Requirement: notice shall be provided no later than the filing date of permit application.

Date of Notice: 12/13/17 Date Permit Application Filed: 12/13/17

Notice of:

- PERMIT FOR ANY WELL WORK
- CERTIFICATE OF APPROVAL FOR THE CONSTRUCTION OF AN IMPOUNDMENT OR PIT

Delivery method pursuant to West Virginia Code § 22-6A-10(b)

- PERSONAL SERVICE
- REGISTERED MAIL
- METHOD OF DELIVERY THAT REQUIRES A RECEIPT OR SIGNATURE CONFIRMATION

Pursuant to W. Va. Code § 22-6A-10(b) no later than the filing date of the application, the applicant for a permit for any well work or for a certificate of approval for the construction of an impoundment or pit as required by this article shall deliver, by personal service or by registered mail or by any method of delivery that requires a receipt or signature confirmation, copies of the application, the erosion and sediment control plan required by section seven of this article, and the well plat to each of the following persons: (1) The owners of record of the surface of the tract on which the well is or is proposed to be located; (2) The owners of record of the surface tract or tracts overlying the oil and gas leasehold being developed by the proposed well work, if the surface tract is to be used for roads or other land disturbance as described in the erosion and sediment control plan submitted pursuant to subsection (c), section seven of this article; (3) The coal owner, operator or lessee, in the event the tract of land on which the well proposed to be drilled is located [sic] is known to be underlain by one or more coal seams; (4) The owners of record of the surface tract or tracts overlying the oil and gas leasehold being developed by the proposed well work, if the surface tract is to be used for the placement, construction, enlargement, alteration, repair, removal or abandonment of any impoundment or pit as described in section nine of this article; (5) Any surface owner or water purveyor who is known to the applicant to have a water well, spring or water supply source located within one thousand five hundred feet of the center of the well pad which is used to provide water for consumption by humans or domestic animals; and (6) The operator of any natural gas storage field within which the proposed well work activity is to take place. (c)(1) If more than three tenants in common or other co-owners of interests described in subsection (b) of this section hold interests in the lands, the applicant may serve the documents required upon the person described in the records of the sheriff required to be maintained pursuant to section eight, article one, chapter eleven-a of this code. (2) Notwithstanding any provision of this article to the contrary, notice to a lien holder is not notice to a landowner, unless the lien holder is the landowner. W. Va. Code R. § 35-8-5.7.a requires, in part, that the operator shall also provide the Well Site Safety Plan ("WSSP") to the surface owner and any water purveyor or surface owner subject to notice and water testing as provided in section 15 of this rule.

Application Notice  WSSP Notice  E&S Plan Notice  Well Plat Notice is hereby provided to:

SURFACE OWNER(s)  
 Name: Larry G. Rine & Jana L. Rine  
 Address: 118 Virginia Oaks  
 Moundsville, WV 26041  
 Name: \_\_\_\_\_  
 Address: \_\_\_\_\_

COAL OWNER OR LESSEE  
 Name: Consolidation Coal Company  
 Address: 1000 Consol Energy Drive  
 Canonsburg, PA 15317-6506  
 COAL OPERATOR  
 Name: \_\_\_\_\_  
 Address: \_\_\_\_\_

SURFACE OWNER(s) (Road and/or Other Disturbance)  
 Name: \_\_\_\_\_  
 Address: \_\_\_\_\_  
 Name: \_\_\_\_\_  
 Address: \_\_\_\_\_

SURFACE OWNER OF WATER WELL AND/OR WATER PURVEYOR(s)  
 Name: None  
 Address: \_\_\_\_\_

SURFACE OWNER(s) (Impoundments or Pits)  
 Name: \_\_\_\_\_  
 Address: \_\_\_\_\_

OPERATOR OF ANY NATURAL GAS STORAGE FIELD  
 Name: \_\_\_\_\_  
 Address: \_\_\_\_\_

\*Please attach additional forms if necessary

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WW-6A  
(8-13)

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API NO. 47- -  
OPERATOR WELL NO. Rine WTZ 1H  
Well Pad Name: Rine WTZ Pad

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**Notice is hereby given:**

Pursuant to West Virginia Code § 22-6A-10(b), notice is hereby given that the undersigned well operator has applied for a permit for well work or for a certificate of approval for the construction of an impoundment or pit.

**This Notice Shall Include:**

Pursuant to W. Va. Code § 22-6A-10(b), this notice shall include: (1) copies of the application; (2) the erosion and sediment control plan required by section seven of this article; and (3) the well plat.

Pursuant to W. Va. Code § 22-6A-10(f), this notice shall include: (1) a statement of the time limits for filing written comments; (2) who may file written comments; (3) the name and address of the secretary for the purpose of filing the comments and obtaining additional information; and (4) a statement that the persons may request, at the time of submitting written comments, notice of the permit decision and a list of persons qualified to test water.

Pursuant to W. Va. Code R. § 35-8-5.7.a, the operator shall provide the Well Site Safety Plan to the surface owner and any water purveyor or surface owner subject to notice and water testing as provided in section 15 of this rule.

Pursuant to W. Va. Code R. § 35-8-15.2.c, this notice shall: (1) contain a statement of the surface owner's and water purveyor's right to request sampling and analysis; (2) advise the surface owner and water purveyor of the rebuttable presumption for contamination or deprivation of a fresh water source or supply; advise the surface owner and water purveyor that refusal to allow the operator to conduct a pre-drilling water well test constitutes a method to rebut the presumption of liability; (3) advise the surface owner and water purveyor of his or her independent right to sample and analyze any water supply at his or her own expense; advise the surface owner and water purveyor whether or not the operator will utilize an independent laboratory to analyze any sample; and (4) advise the surface owner and or water purveyor that he or she can obtain from the Chief a list of water testing laboratories in the subject area capable of and qualified to test water supplies in accordance with standard acceptable methods.

Additional information related to horizontal drilling may be obtained from the Secretary, at the WV Department of Environmental Protection headquarters, located at 601 57<sup>th</sup> Street, SE, Charleston, WV 25304 (304-926-0450) or by visiting [www.dep.wv.gov/oil-and-gas/pages/default.aspx](http://www.dep.wv.gov/oil-and-gas/pages/default.aspx).

**Well Location Restrictions**

Pursuant to W. Va. Code § 22-6A-12, Wells may not be drilled within two hundred fifty feet measured horizontally from any existing water well or developed spring used for human or domestic animal consumption. The center of well pads may not be located within six hundred twenty-five feet of an occupied dwelling structure, or a building two thousand five hundred square feet or larger used to house or shelter dairy cattle or poultry husbandry. This limitation is applicable to those wells, developed springs, dwellings or agricultural buildings that existed on the date a notice to the surface owner of planned entry for surveying or staking as provided in section ten of this article or a notice of intent to drill a horizontal well as provided in subsection (b), section sixteen of this article was provided, whichever occurs first, and to any dwelling under construction prior to that date. This limitation may be waived by written consent of the surface owner transmitted to the department and recorded in the real property records maintained by the clerk of the county commission for the county in which such property is located. Furthermore, the well operator may be granted a variance by the secretary from these distance restrictions upon submission of a plan which identifies the sufficient measures, facilities or practices to be employed during well site construction, drilling and operations. The variance, if granted, shall include terms and conditions the department requires to ensure the safety and protection of affected persons and property. The terms and conditions may include insurance, bonding and indemnification, as well as technical requirements. (b) No well pad may be prepared or well drilled within one hundred feet measured horizontally from any perennial stream, natural or artificial lake, pond or reservoir, or a wetland, or within three hundred feet of a naturally reproducing trout stream. No well pad may be located within one thousand feet of a surface or ground water intake of a public water supply. The distance from the public water supply as identified by the department shall be measured as follows: (1) For a surface water intake on a lake or reservoir, the distance shall be measured from the boundary of the lake or reservoir. (2) For a surface water intake on a flowing stream, the distance shall be measured from a semicircular radius extending upstream of the surface water intake. (3) For a groundwater source, the distance shall be measured from the wellhead or spring. The department may, in its discretion, waive these distance restrictions upon submission of a plan identifying sufficient measures, facilities or practices to be employed during well site construction, drilling and operations to protect the waters of the state. A waiver, if granted, shall impose any permit conditions as the secretary considers necessary. (c) Notwithstanding the foregoing provisions of this section, nothing contained in this section prevents an operator from conducting the activities permitted or authorized by a Clean Water Act Section 404 permit or other approval from the United States Army Corps of Engineers within any waters of the state or within the restricted areas referenced in this section. (d) The well location restrictions set forth in this section shall not apply to any well on a multiple well pad if at least one of the wells was permitted prior to the effective date of this article. (e) The secretary shall, by December 31, 2012, report to the Legislature on the noise, light, dust and volatile organic compounds generated by the drilling of horizontal wells as they relate to the well location restrictions regarding occupied dwelling structures pursuant to this section. Upon a finding, if any, by the secretary that the well location restrictions regarding occupied dwelling structures are inadequate or otherwise require alteration to address the items



WW-6A  
(8-13)

API NO. 47- \_\_\_\_\_  
OPERATOR WELL NO. Rine WTZ 1H  
Well Pad Name: Rine WTZ Pad

examined in the study required by this subsection, the secretary shall have the authority to propose for promulgation legislative rules establishing guidelines and procedures regarding reasonable levels of noise, light, dust and volatile organic compounds relating to drilling horizontal wells, including reasonable means of mitigating such factors, if necessary.

#### Water Well Testing:

Pursuant to West Virginia Code § 22-6A-10(d), notification shall be made, with respect to surface landowners identified in subsection (b) or water purveyors identified in subdivision (5), subsection (b) of this section, of the opportunity for testing their water well. The operator shall provide an analysis to such surface landowner or water purveyor at their request.

#### Water Testing Laboratories:

Pursuant to West Virginia Code § 22-6A-10(i), persons entitled to notice pursuant to subsection (b) of this section may contact the department to ascertain the names and locations of water testing laboratories in the subject area capable and qualified to test water supplies in accordance with standard accepted methods. In compiling that list of names the department shall consult with the state Bureau for Public Health and local health departments. A surface owner and water purveyor has an independent right to sample and analyze any water supply at his or her own expense. The laboratory utilized by the operator shall be approved by the agency and be certified and capable of performing sample analyses in accordance with this section.

#### Rebuttable Presumption for Contamination or Deprivation of a Fresh Water Source or Supply:

W. Va. Code § 22-6A-18 requires that (b) unless rebutted by one of the defenses established in subsection (c) of this section, any action for contamination or deprivation of a fresh water source or supply within one thousand five hundred feet of the center of the well pad for horizontal well, there is a rebuttable presumption that the drilling and the oil or gas well or either was the proximate cause of the contamination or deprivation of the fresh water source or supply. (c) In order to rebut the presumption of liability established in subsection (b) of this section, the operator must prove by a preponderance of the evidence one of the following defenses: (1) The pollution existed prior to the drilling or alteration activity as determined by a predrilling or prealteration water well test. (2) The landowner or water purveyor refused to allow the operator access to the property to conduct a predrilling or prealteration water well test. (3) The water supply is not within one thousand five hundred feet of the well. (4) The pollution occurred more than six months after completion of drilling or alteration activities. (5) The pollution occurred as the result of some cause other than the drilling or alteration activity. (d) Any operator electing to preserve its defenses under subdivision (1), subsection (c) of this section shall retain the services of an independent certified laboratory to conduct the predrilling or prealteration water well test. A copy of the results of the test shall be submitted to the department and the surface owner or water purveyor in a manner prescribed by the secretary. (e) Any operator shall replace the water supply of an owner of interest in real property who obtains all or part of that owner's supply of water for domestic, agricultural, industrial or other legitimate use from an underground or surface source with a comparable water supply where the secretary determines that the water supply has been affected by contamination, diminution or interruption proximately caused by the oil or gas operation, unless waived in writing by that owner. (f) The secretary may order the operator conducting the oil or gas operation to: (1) Provide an emergency drinking water supply within twenty-four hours; (2) Provide temporary water supply within seventy-two hours; (3) Within thirty days begin activities to establish a permanent water supply or submit a proposal to the secretary outlining the measures and timetables to be used in establishing a permanent supply. The total time in providing a permanent water supply may not exceed two years. If the operator demonstrates that providing a permanent replacement water supply cannot be completed within two years, the secretary may extend the time frame on case-by-case basis; and (4) Pay all reasonable costs incurred by the real property owner in securing a water supply. (g) A person as described in subsection (b) of this section aggrieved under the provisions of subsections (b), (e) or (f) of this section may seek relief in court... (i) Notwithstanding the denial of the operator of responsibility for the damage to the real property owner's water supply or the status of any appeal on determination of liability for the damage to the real property owner's water supply, the operator may not discontinue providing the required water service until authorized to do so by the secretary or a court of competent jurisdiction.

#### Written Comment:

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. All persons described in West Virginia Code § 22-6A-10(b) may file written comments as to the location or construction of the applicant's proposed well work to the Secretary at:

Chief, Office of Oil and Gas  
Department of Environmental Protection  
601 57<sup>th</sup> St. SE  
Charleston, WV 25304  
(304) 926-0450

Such persons may request, at the time of submitting written comments, notice of the permit decision and a list of persons qualified to test water. **NOTE: YOU ARE NOT REQUIRED TO FILE ANY COMMENT.**

03/30/2018

WW-6A  
(8-13)

API NO. 47- \_\_\_\_\_  
OPERATOR WELL NO. Rine WTZ 1H  
Well Pad Name: Rine WTZ Pad

### Time Limits and Methods for Filing Comments.

The law requires these materials to be served on or before the date the operator files its Application. You have **THIRTY (30) DAYS** after the filing date to file your comments. Comments must be filed in person or received in the mail by the Chief's office by the time stated above. You may call the Chief's office to be sure of the date. Check with your postmaster to ensure adequate delivery time or to arrange special expedited handling. If you have been contacted by the well operator and you have signed a "voluntary statement of no objection" to the planned work described in these materials, then the permit may be issued at any time.

Pursuant to West Virginia Code § 22-6A-11(c)(2), Any objections of the affected coal operators and coal seam owners and lessees shall be addressed through the processes and procedures that exist under sections fifteen, seventeen and forty, article six of this chapter, as applicable and as incorporated into this article by section five of this article. The written comments filed by the parties entitled to notice under subdivisions (1), (2), (4), (5) and (6), subsection (b), section ten of this article shall be considered by the secretary in the permit issuance process, but the parties are not entitled to participate in the processes and proceedings that exist under sections fifteen, seventeen or forty, article six of this chapter, as applicable and as incorporated into this article by section five of this article.

### Comment Requirements

Your comments must be in writing and include your name, address and telephone number, the well operator's name and well number and the approximate location of the proposed well site including district and county from the application. You may add other documents, such as sketches, maps or photographs to support your comments.

Disclaimer: All comments received will be placed on our web site <http://www.dep.wv.gov/oil-and-gas/Horizontal-Permits/Pages/default.aspx> and the applicant will automatically be forwarded an email notice that such comments have been submitted. The applicant will be expected to provide a response to comments submitted by any surface owner, water purveyor or natural gas storage operator noticed within the application.

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### Permit Denial or Condition

The Chief has the power to deny or condition a well work permit. Pursuant to West Virginia Code § 22-6A-8(d), the permit may not be issued or be conditioned, including conditions with respect to the location of the well and access roads prior to issuance if the director determines that:

- (1) The proposed well work will constitute a hazard to the safety of persons;
- (2) The plan for soil erosion and sediment control is not adequate or effective;
- (3) Damage would occur to publicly owned lands or resources; or
- (4) The proposed well work fails to protect fresh water sources or supplies.

A permit may also be denied under West Virginia Code § 22-6A-7(k), the secretary shall deny the issuance of a permit if the secretary determines that the applicant has committed a substantial violation of a previously issued permit for a horizontal well, including the applicable erosion and sediment control plan associated with the previously issued permit, or a substantial violation of one or more of the rules promulgated under this article, and in each instance has failed to abate or seek review of the violation within the time prescribed by the secretary pursuant to the provisions of subdivisions (1) and (2), subsection (a), section five of this article and the rules promulgated hereunder, which time may not be unreasonable.

Pursuant to West Virginia Code § 22-6A-10(g), any person entitled to submit written comments to the secretary pursuant to subsection (a), section eleven of this article, shall also be entitled to receive from the secretary a copy of the permit as issued or a copy of the order modifying or denying the permit if the person requests receipt of them as a part of the written comments submitted concerning the permit application. Such persons may request, at the time of submitting written comments, notice of the permit decision and a list of persons qualified to test water.

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WW-6A  
(8-13)

API NO. 47- \_\_\_\_\_  
OPERATOR WELL NO. Rine WTZ 1H  
Well Pad Name: Rine WTZ Pad

**Notice is hereby given by:**

Well Operator: SWN Production Co., LLC  
Telephone: 304-884-1610  
Email: Dee\_Southall@swn.com



Address: P.O. Box 1300  
Jane Lew, WV 26378  
Facsimile: 304-884-1690

**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 [deprivacyofficer@wv.gov](mailto:deprivacyofficer@wv.gov).



Subscribed and sworn before me this 3rd day of November 2017  
Brittany R Woody Notary Public  
My Commission Expires 11/27/22

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WV Department of  
Environmental Protection



<p>1 in = 833 ft</p> <p>0 0.05 0.1 0.2 0.3 0.4 Miles</p> <p>Coordinate System: NAD 1983 UTM Zone 17N Units: Meter</p>	<ul style="list-style-type: none"> <li> Spring</li> <li> Water Well</li> <li> Pond</li> <li> 1500' Buffer</li> </ul>	<p>Office of Oil and Gas</p> <p>DEC 18 2017</p> <p>WV Department of Environmental Protection</p>	<p>Water Purveyor Map</p> <p>Well Pad: Rine</p> <p>County: WTZ</p>
		<p><b>Swn</b> </p> <p>Southwestern Energy*</p>	<p>Date: 11/7/2017</p> <p>Author: willisb</p>

Document Path: K:\E and P\WVD\Team Data\Regulatory\Bobby Willis\Maps\Water\_Purveyor\_Rine\_Pad.mxd

WW-6A3  
(1/12)Operator Well No. Rine WTZ

**STATE OF WEST VIRGINIA**  
**DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS**  
**NOTICE OF ENTRY FOR PLAT SURVEY**

**Notice Time Requirement:** Notice shall be provided at least SEVEN (7) days but no more than FORTY-FIVE (45) days prior to entry

**Date of Notice:** 10/24/2017      **Date of Planned Entry:** 10/31/2017

**Delivery method pursuant to West Virginia Code § 22-6A-10a**

PERSONAL SERVICE       REGISTERED MAIL       METHOD OF DELIVERY THAT REQUIRES A RECEIPT OR SIGNATURE CONFIRMATION

Pursuant to West Virginia Code § 22-6A-10(a), Prior to filing a permit application, the operator shall provide notice of planned entry on to the surface tract to conduct any plat surveys required pursuant to this article. Such notice shall be provided at least seven days but no more than forty-five days prior to such entry to: (1) The surface owner of such tract; (2) to any owner or lessee of coal seams beneath such tract that has filed a declaration pursuant to section thirty-six, article six, chapter twenty-two of this code; and (3) any owner of minerals underlying such tract in the county tax records. The notice shall include a statement that copies of the state Erosion and Sediment Control Manual and the statutes and rules related to oil and gas exploration and production may be obtained from the Secretary, which statement shall include contact information, including the address for a web page on the Secretary's web site, to enable the surface owner to obtain copies from the secretary.

**Notice is hereby provided to:**

SURFACE OWNER(S)  
 Name: Larry G. Rine & Jana L. Rine  
 Address: 118 Virginia Oaks  
Moundsville, WV 26041  
 Name: \_\_\_\_\_  
 Address: \_\_\_\_\_  
 Name: \_\_\_\_\_  
 Address: \_\_\_\_\_

COAL OWNER OR LESSEE  
 Name: Consolidation Coal Company  
 Address: 1000 Consol Energy Drive  
Canonsburg, PA 15317-6506

MINERAL OWNER(S)  
 Name: Shirley A. Parker  
 Address: 97 Peach Lane  
New Martinsville, WV 26155  
 \*please attach additional forms if necessary

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Office of Oil and Gas  
DEC 18 2017  
WV Department of  
Environmental Protection

**Notice is hereby given:**

Pursuant to West Virginia Code § 22-6A-10(a), notice is hereby given that the undersigned well operator is planning entry to conduct a plat survey on the tract of land as follows:

State: <u>West Virginia</u>	Approx. Latitude & Longitude: <u>39.711619, -90.609204</u>
County: <u>Wetzel</u>	Public Road Access: <u>Route 89</u>
District: <u>Wileyville</u>	Watershed: <u>Fish Creek</u>
Quadrangle: <u>Littleton</u>	Generally used farm name: <u>Rine</u>

Copies of the state Erosion and Sediment Control Manual and the statutes and rules related to oil and gas exploration and production may be obtained from the Secretary, at the WV Department of Environmental Protection headquarters, located at 601 57<sup>th</sup> Street, SE, Charleston, WV 25304 (304-926-0450). Copies of such documents or additional information related to horizontal drilling may be obtained from the Secretary by visiting [www.dep.wv.gov/oil-and-gas/pages/default.aspx](http://www.dep.wv.gov/oil-and-gas/pages/default.aspx).

**Notice is hereby given by:**

Well Operator: <u>SWN PRODUCTION COMPANY, LLC</u>	Address: <u>PO BOX 1300</u>
Telephone: <u>304-884-1610</u>	<u>JANE LEW, WV 26378</u>
Email: <u>dee_southall@swn.com or brittany_woody@swn.com</u>	Facsimile: _____

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**STATE OF WEST VIRGINIA  
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS  
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**Notice is hereby provided to:**

SURFACE OWNER(s)  
Name: \_\_\_\_\_  
Address: \_\_\_\_\_  
Name: \_\_\_\_\_  
Address: \_\_\_\_\_  
Name: \_\_\_\_\_  
Address: \_\_\_\_\_

COAL OWNER OR LESSEE  
Name: \_\_\_\_\_  
Address: \_\_\_\_\_

MINERAL OWNER(s) /  
Name: Howard G. Stansberry  
Address: 97 Peach Lane  
New Martinsville, WV 26155  
\*please attach additional forms if necessary

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Office of Oil and Gas  
DEC 18 2017  
WV Department of  
Environmental Protection

**Notice is hereby given:**

Pursuant to West Virginia Code § 22-6A-10(a), notice is hereby given that the undersigned well operator is planning entry to conduct a plat survey on the tract of land as follows:

State: <u>West Virginia</u>	Approx. Latitude & Longitude: <u>39.711619, -80.609204</u>
County: <u>Wetzel</u>	Public Road Access: <u>Route 89</u>
District: <u>Wileyville</u>	Watershed: <u>Fish Creek</u>
Quadrangle: <u>Littleton</u>	Generally used farm name: <u>Rine</u>

Copies of the state Erosion and Sediment Control Manual and the statutes and rules related to oil and gas exploration and production may be obtained from the Secretary, at the WV Department of Environmental Protection headquarters, located at 601 57<sup>th</sup> Street, SE, Charleston, WV 25304 (304-926-0450). Copies of such documents or additional information related to horizontal drilling may be obtained from the Secretary by visiting [www.dep.wv.gov/oil-and-gas/pages/default.aspx](http://www.dep.wv.gov/oil-and-gas/pages/default.aspx).

**Notice is hereby given by:**

Well Operator: <u>SWN PRODUCTION COMPANY, LLC</u>	Address: <u>PO BOX 1300</u>
Telephone: <u>304-884-1610</u>	<u>JANE LEW, WV 25378</u>
Email: <u>dee_southall@swn.com or brittany_woody@swn.com</u>	Facsimile: _____

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STATE OF WEST VIRGINIA  
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS  
NOTICE OF PLANNED OPERATION

Notice Time Requirement: notice shall be provided no later than the filing date of permit application.

Date of Notice: 11/08/2017 Date Permit Application Filed: 12/13/17

Delivery method pursuant to West Virginia Code § 22-6A-16(c)

CERTIFIED MAIL RETURN RECEIPT REQUESTED  HAND DELIVERY

Pursuant to W. Va. Code § 22-6A-16(c), no later than the date for filing the permit application, an operator shall, by certified mail return receipt requested or hand delivery, give the surface owner whose land will be used for the drilling of a horizontal well notice of the planned operation. The notice required by this subsection shall include: (1) A copy of this code section; (2) The information required to be provided by subsection (b), section ten of this article to a surface owner whose land will be used in conjunction with the drilling of a horizontal well; and (3) A proposed surface use and compensation agreement containing an offer of compensation for damages to the surface affected by oil and gas operations to the extent the damages are compensable under article six-b of this chapter. (d) The notices required by this section shall be given to the surface owner at the address listed in the records of the sheriff at the time of notice.

Notice is hereby provided to the SURFACE OWNER(s)  
(at the address listed in the records of the sheriff at the time of notice):

Name: Larry G & Jana L Rine Name: \_\_\_\_\_  
Address: 48 Virginia Oaks Address: \_\_\_\_\_  
Moundsville, WV 26041

Notice is hereby given:

Pursuant to West Virginia Code § 22-6A-16(c), notice is hereby given that the undersigned well operator has developed a planned operation on the surface owner's land for the purpose of drilling a horizontal well on the tract of land as follows:

State: West Virginia UTM NAD 83 Easting: 533,495.180  
County: Wetzel Northing: 4,395,822.852  
District: Center Public Road Access: Miller Ridge  
Quadrangle: Littleton, WV Generally used farm name: Rine WTZ  
Watershed: Little Laurel Run of Fish Creek (HUC-10)

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DEC 18 2017  
WV Department of  
Environmental Protection

This Notice Shall Include:

Pursuant to West Virginia Code § 22-6A-16(c), this notice shall include: (1) A copy of this code section; (2) The information required to be provided by W. Va. Code § 22-6A-10(b) to a surface owner whose land will be used in conjunction with the drilling of a horizontal well; and (3) A proposed surface use and compensation agreement containing an offer of compensation for damages to the surface affected by oil and gas operations to the extent the damages are compensable under article six-b of this chapter. Additional information related to horizontal drilling may be obtained from the Secretary, at the WV Department of Environmental Protection headquarters, located at 601 57<sup>th</sup> Street, SE, Charleston, WV 25304 (304-926-0450) or by visiting [www.dep.wv.gov/oil-and-gas/pages/default.aspx](http://www.dep.wv.gov/oil-and-gas/pages/default.aspx).

Well Operator: SWN Production Company, LLC Address: PO Box 1300, 179 Innovation Drive  
Telephone: 832-540-1138 Jane Lew, WV 26378  
Email: Steve\_Teel@SWN.com Facsimile: 304-884-1691

Oil and Gas Privacy Notice:

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## WEST VIRGINIA DEPARTMENT OF TRANSPORTATION

**Division of Highways**

1900 Kanawha Boulevard East • Building Five • Room 110  
 Charleston, West Virginia 25305-0430 • (304) 558-3505

Jim Justice  
 Governor

Thomas J. Smith, P. E.  
 Secretary of Transportation/  
 Commissioner of Highways

November 8, 2017

James A. Martin, Chief  
 Office of Oil and Gas  
 Department of Environmental Protection  
 601 57<sup>th</sup> Street, SE  
 Charleston, WV 25304

Subject: DOH Permit for the Larry Rine Well Pad, Wetzel County  
 Rine WTZ 1H Well Site

Dear Mr. Martin,

The West Virginia Division of Highways has transferred Permit # 06-2009-0244 to Southwestern Energy for the existing well pad. Access to the well site is off of WV 89 in Wetzel County.

The operator has signed an OIL AND GAS ROAD MAINTENANCE BONDING AGREEMENT and provided the required Bond. This operator is currently in compliance with the DOH OIL AND GAS POLICY dated January 3, 2012.

RECEIVED  
 Office of Oil and Gas

DEC 18 2017

WV Department of  
 Environmental Protection

Very Truly Yours,

Gary K. Clayton  
 Regional Maintenance Engineer  
 Central Office Oil & Gas Coordinator

Cc: Brittany Woody  
 Southwestern Energy  
 CH, OM, D-6  
 File

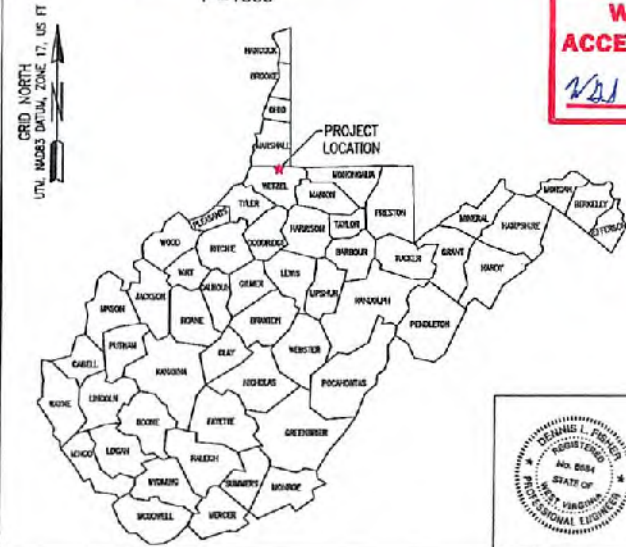
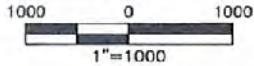
03/30/2018

DEC 18 2017

**FRAC ADDITIVES**

Product Name	Product Use	Chemical Name	CAS Number
EC6734A (Champion Technologies)	Biocide	Hydrogen Peroxide	7722-84-1
		Acetic Acid	64-19-7
		Peroxyacetic Acid	79-21-0
GYPTRON T-390 (Champion Technologies)	Scale Inhibitor	Methanol	67-56-1
		Nonylphenol Ethoxylate	Proprietary
Bactron K-139 (Champion Technologies)	Biocide	Glutaraldehyde	111-30-8
		Quaternary Ammonium Compounds, Benzyl-C12-16-Alkyldimethyl, Chlorides	68424-85-1
		Ethanol	64-17-5
Bactron K-219 (Champion Technologies)	Biocide	Methanol	67-56-1
		Quaternary Ammonium Compounds, Benzyl-C12-16-Alkyldimethyl, Chlorides	68424-85-1
EC6486A (Nalco Champion)	Scale Inhibitor	Amine Triphosphate	Proprietary
		Ethylene Glycol	107-21-1
WFRA-2000 (U.S. Well Services)	Anionic Friction Reducer	Hydrotreated light distillate (petroleum)	64742-47-8
		Propenoic acid, polymer with propenamide	9003-06 9
AI-303 (U.S. Well Services)	Mixture	Ethylene glycol	107-21 1
		Cinnamaldehyde	104-55 2
		Butyl cellosolve	111-76 2
		Formic acid	64-18 6
		Polyether	Proprietary
		Acetophenone, thiourea, formaldehyde polymer	68527-49 1
AP ONE (U.S. Well Services)	Breaker	Ammonium persulfate	7727-54-0
OPTI-FLEX (U.S. Well Services)	Viscosifying Agent	Distillates, petroleum, hydrotreated light	64742-47-8
Econo-CI200 (SWN Well Services)	Corrosion Inhibitor	Methanol	67-56-1
		Oxyalkylated fatty acid	68951-67-7
		Fatty acids	61790-12-3
		Modified thiourea polymer	68527-49-1
		Water	7732-18-5
		Hydrochloric acid	7647-01-0
		Potassium acetate	127-08-2
Ecopol-FEAC (SWN Well Services)	Iron Control	Formaldehyde	50-00-0
		Acetic Acid	64-19-7
		Citric Acid	77-92-9
HCL (SWN Well Services)	Hydrocholic Acid	Water	7732-18-5
		Hydrochloric Acid	7647-01-0
FLOJET DRP 1130X (SWN Well Services)	Friction Reducer	Proprietary	Proprietary
FLOJET DR900 LPP (SWN Well Services)	Friction Reducer	Distillates (petroleum) hydrotreated light	64674-47-8
		Ethylene Glycol	107-21-1
		Alcohols, C12-16, Exoxylated propoxylated	68213-24-1
		Fatty Alcohols ethoxylated	Proprietary
FR-76 (Halliburton)	Friction Reducer	Water	7732-18-5
		Hydrotreated light petroleum distillate	64742-47-8
HAI-150E (Halliburton)	Corrosion Inhibitor	Inorganic Salt	Proprietary
		No hazardous substance	N/A
FDP-S1176-15 (Halliburton)	Friction Reducer	Polyacrylate	Proprietary
		Hydrotreated light petroleum distillate	64742-47-8
LP-65 MC (Halliburton)	Scale Inhibitor	Organic phosphonate	Proprietary
		Ammonium Chloride	12125-02-9

47 10 30 32 20



RINE WTZ PAD  
CONSTRUCTION AND RECLAMATION PLAN  
AS-BUILT  
CENTER DISTRICT, WETZEL COUNTY, WV  
NOVEMBER 2016

LOD

TOTAL DISTURBED AREA: 7.4 ACRES  
ROAD DISTURBED AREA: 0.8 ACRES  
PAD DISTURBED AREA: 6.6 ACRES

**WVDEP OOG  
ACCEPTED AS-BUILT**  
*WJ* 1/26/2018

COORDINATES:  
SITE ENTRANCE  
(NAD83)  
LAT: 39.711078  
LONG: 80.608063

AT RINE PAD  
(NAD83)  
LAT: 39.711224  
LONG: 80.608746

CENTER OF PAD  
(NAD83)  
LAT: 39.711562  
LONG: 80.609190

GATHERING AREA  
(NAD83)  
LAT: 39.711185  
LONG: 80.608113

EXISTING WELLS:  
RINE WTZ\_3H  
API:47-103-02480H  
(NAD83)  
LAT: 39.711592  
LONG: 80.609197

RINE WTZ\_5H  
API:47-103-02481H  
(NAD83)  
LAT: 39.711574  
LONG: 80.609154

RINE WTZ\_6H  
API:47-103-02536H  
(NAD83)  
LAT: 39.711555  
LONG: 80.609110

**SHEET INDEX**

TS1	TITLE SHEET
EP2.1	EVACUATION ROUTE/ PREVAILING WIND
EP2.2	EVACUATION ROUTE/ PREVAILING WIND
AS3.1	ASBUILT OVERVIEW
AS3.2	ASBUILT
ASR4.1	CONSTRUCTION AND RECLAMATION ACCESS ROAD PROFILE
MRD5.1	RECLAMATION PLAN OVERVIEW
MRD5.2	RECLAMATION PLAN
MRD6.3	DETAILS
MRD6.4	DETAILS

REVISION	DATE



*Dist  
11-16-17*



Dennis L. Fisher, P.E. No. 6584

11-29-2016  
Date

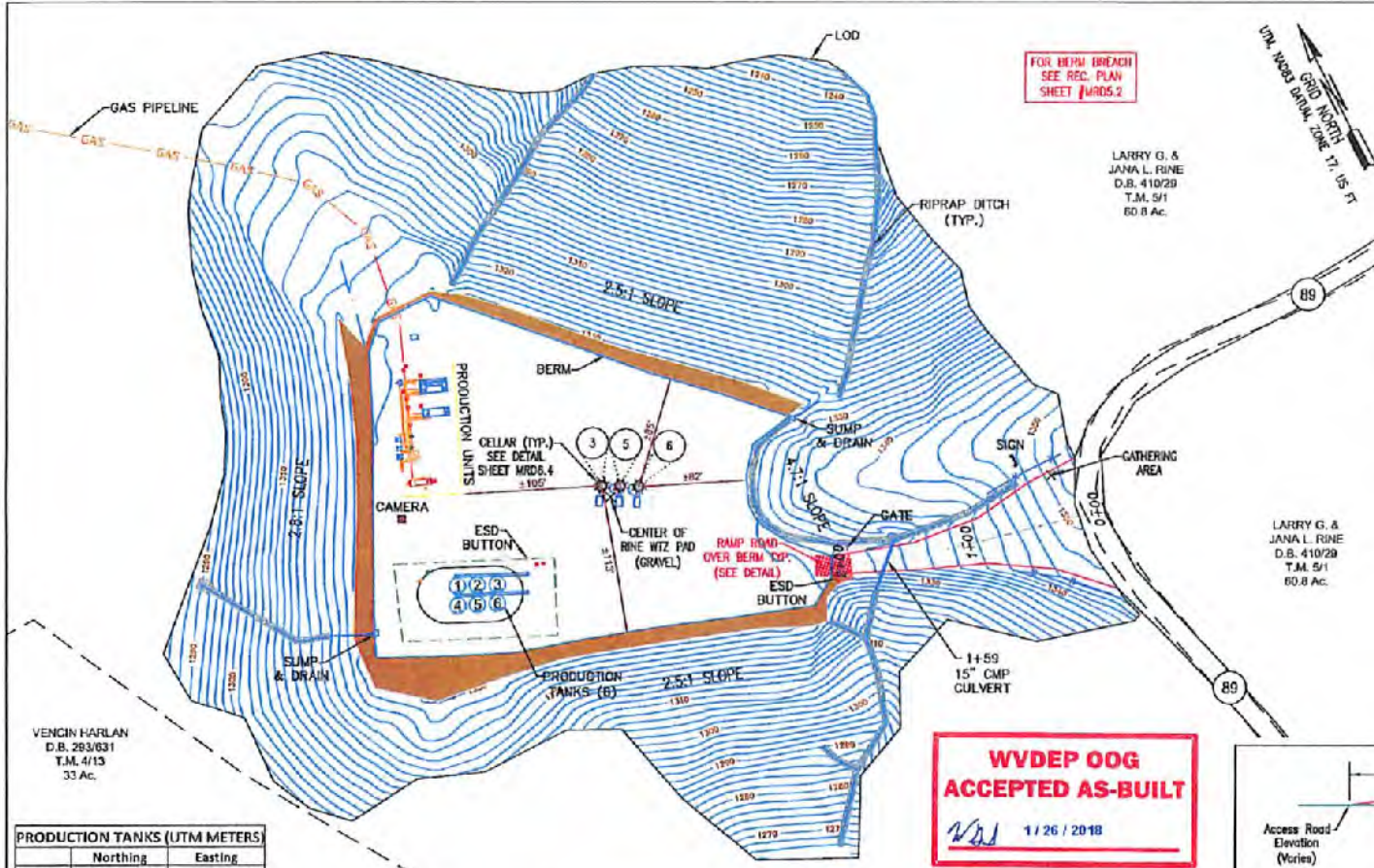


677 W. Main St.  
Charlestown, WV 26031  
304-523-5551

**Jackson Surveying Inc.**

TITLE SHEET  
TS.1  
SOUTHWESTERN PRODUCTION COMPANY LLC.  
RINE WTZ PAD  
CENTER DISTRICT, WETZEL COUNTY, WV  
NOVEMBER 28, 2016

4710303220



**- LEGEND -**

- EDGE ACCESS ROAD
- PUBLIC/Private ROAD
- LOD
- CHAIN LINK FENCE
- WOVEN WIRE FENCE
- DITCH/DRAIN
- PROPERTY LINES
- CL ACCESS ROAD
- CONTOUR MAJOR ASBUILT
- CONTOUR MINOR ASBUILT

RED TEXT INDICATES ITEMS TO BE CONSTRUCTED PRIOR TO DRILLING ACTIVITY.

REVISION	DATE

**COORDINATES:**  
**SITE ENTRANCE**  
 (NAD83)  
 LAT: 39.711078  
 LONG: 80.608063

**AT RINE PAD**  
 (NAD83)  
 LAT: 39.711224  
 LONG: 80.608746

**CENTER OF PAD**  
 (NAD83)  
 LAT: 39.711562  
 LONG: 80.609190

**CATERING AREA**  
 (NAD83)  
 LAT: 39.711185  
 LONG: 80.608113

**EXISTING WELLS:**

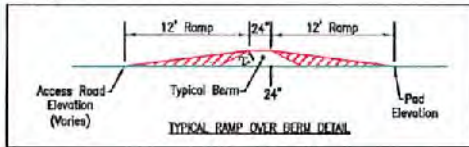
**RINE WTZ 3H**  
 AP#47-103-02480H  
 (NAD83)  
 LAT: 39.711582  
 LONG: 80.609197

**RINE WTZ 5H**  
 AP#47-103-02481H  
 (NAD83)  
 LAT: 39.711574  
 LONG: 80.609154

**RINE WTZ 6H**  
 AP#47-103-02536H  
 (NAD83)  
 LAT: 39.711556  
 LONG: 80.609110

**WVDEP OOG**  
**ACCEPTED AS-BUILT**

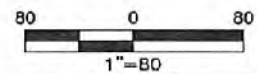
*WJL* 11/26/2018



VENCIN HARLAN  
 D.B. 293/631  
 T.M. 4/13  
 33 Ac.

**PRODUCTION TANKS (UTM METERS)**

	Northing	Eastng
#1	4,395,814.796	533,458.663
#2	4,395,812.936	533,462.774
#3	4,395,810.994	533,465.953
#4	4,395,810.641	533,455.694
#5	4,395,808.901	533,460.800
#6	4,395,807.076	533,464.974



Dennis L. Fisher RPS REG.

*Dennis Fisher*

11-28-2018 Date:



677 W. Main St.  
 Clerksburg, Wv 25801  
 304-623-5851

**Jackson Surveying Inc.**  
**CONSTRUCTION AND RECLAMATION**  
**ASBUILT**  
 ASS.2  
**SOUTHWESTERN PRODUCTION COMPANY LLC.**  
**RINE WTZ PAD**  
**CENTER DISTRICT, WETZEL COUNTY, WV**  
**NOVEMBER 28, 2016**