



west virginia department of environmental protection

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

Harold D. Ward, Cabinet Secretary
www.dep.wv.gov

Tuesday, January 26, 2021
WELL WORK PERMIT
Horizontal 6A / New Drill

SWN PRODUCTION COMPANY, LLC
POST OFFICE BOX 12359

SPRING, TX 773914954

Re: Permit approval for WILLIAM RITCHEA WTZ 6H
47-103-03369-00-00

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: WILLIAM RITCHEA WTZ 6H
Farm Name: WILLIAM D. RITCHEA & SH[REDACTED]
U.S. WELL NUMBER: 47-103-03369-00-00
Horizontal 6A New Drill
Date Issued: 1/26/2021

PERMIT CONDITIONS

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.

CONDITIONS

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.

API Number: _____

PERMIT CONDITIONS

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.

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 007-Proc 681-Wileyville
Operator ID County District Quadrangle

2) Operator's Well Number: William Ritchea WTZ 6H Well Pad Name: William Ritchea WTZ pad

3) Farm Name/Surface Owner: William D. Ritchea & Shirley E. Ritchea Public Road Access: Harlan Ridge Road

4) Elevation, current ground: 1563' Elevation, proposed post-construction: 1563'

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

(b) If Gas Shallow Deep _____
Horizontal _____

DMAH 12/15/20

6) Existing Pad: Yes or No Yes

7) Proposed Target Formation(s), Depth(s). Anticipated Thickness and Expected Pressure(s):
Target Formation- Marcellus, Down-Dip well to the South, Target Top TVD- 7648', Target Base TVD- 7697', Anticipated Thickness- 49', Associated Pressure- 5003

8) Proposed Total Vertical Depth: 7681'

9) Formation at Total Vertical Depth: Marcellus

10) Proposed Total Measured Depth: 16689' ✓

11) Proposed Horizontal Leg Length: 8427.90

12) Approximate Fresh Water Strata Depths: 541' ✓

13) Method to Determine Fresh Water Depths: BOFW determined from salinity calculations from William Ritchea 3H Logs (API 47-103-03129)

14) Approximate Saltwater Depths: 1556' Salinity profile analysis ✓

15) Approximate Coal Seam Depths: 1492' ✓

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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WW-6B
(04/15)

API NO. 47- 103 -
OPERATOR WELL NO. William Ritchea WTZ 6H
Well Pad Name: William Ritchea 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	J-55	94#	126'	126' ✓	CTS
Fresh Water	13 3/8"	New	J-55	54.4#	591'	591' ✓	598 sx/CTS
Coal	See	Interm	Casing				
Intermediate	9 5/8"	New	J-55	36#	2957'	2957' ✓	966 sx/CTS
Production	5 1/2"	New	P-110 HP	20#	16689'	16689' ✓	Tail 2884sx/ 100' Inside Intermediate
Tubing							
Liners							

DWAH 12/15/20

TYPE	Size (in)	Wellbore Diameter (in)	Wall Thickness (in)	Burst Pressure (psi)	Anticipated Max. Internal Pressure (psi)	Cement Type	Cement Yield (cu. ft./k)
Conductor	20"	30"	0.25	2120	81	Class A	1.20/30% Excess
Fresh Water	13 3/8"	17.5"	0.380	2730	633	Class A	1.20/30% Excess
Coal	See	Interm	Casing				
Intermediate	9 5/8"	12 1/4"	0.352	3520	1768	Class A	1.19/40% Excess
Production	5 1/2"	8 3/4"-8 1/2"	0.361	14360	10500	Class A	1.19/5% Excess
Tubing							
Liners							

PACKERS

Kind:				
Sizes:				
Depths Set:				

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

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

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

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

21) Total Area to be disturbed, including roads, stockpile area, pits, etc., (acres): 13.6

22) Area to be disturbed for well pad only, less access road (acres): 9.7

23) Describe centralizer placement for each casing string:

All casing strings will be ran with a centralizer at a minimum of 1 per every 3 joints of casing.

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

See Attachment ***

25) Proposed borehole conditioning procedures:

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

*Note: Attach additional sheets as needed.

Schlumberger Cement Additives

	Product Name	Product Use	Chemical Name	CAS Number
Surface	S001	accelerator	calcium chloride up to 3%	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
	D065	dispersant	sodium polynaphthalene sulfonate	9008-63-3
			sodium sulfate	7757-82-6
	D201	retarder	chrystalline silica	14808-60-7
metal oxide			proprietary	
D153	anti-settling	chrystalline silica	14808-60-7	

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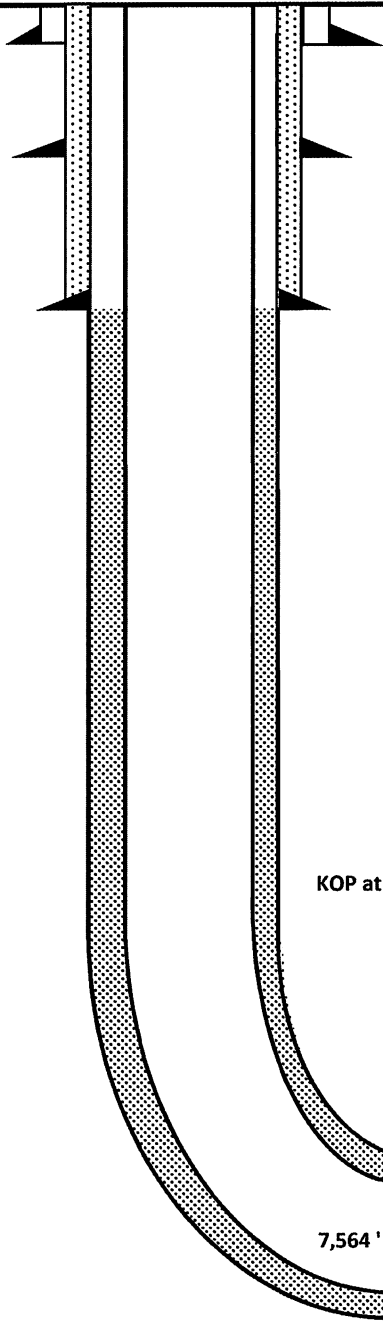
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Southwestern Energy Company

Proposed Drilling Program

Well: WILLIAM RITCHEA WZ 6
 Field: VICTORY FIELD WET
 County: WETZEL
 SHL: 39.6696 Latitude -80.6593 Longitude
 BHL: 39.6511 Latitude -80.6419 Longitude
 KB Elev: 1,589 ft MSL KB: 26 ft AGL

Re-entry Rig: SDC 41
 Prospect: Marcellus Shale
 State: WV
 GL Elev: 1,563 ft MSL



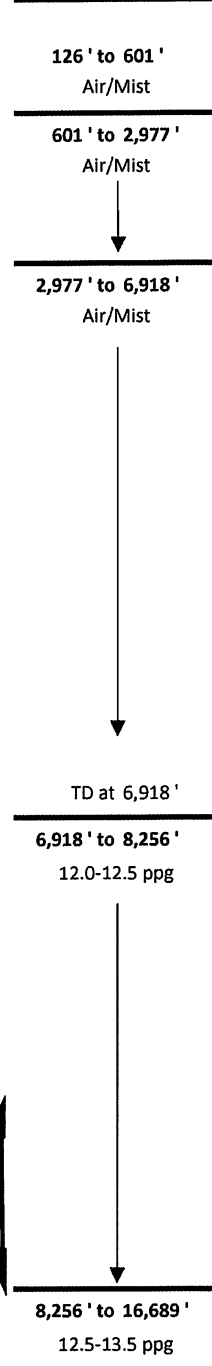
PROD TOC Lead @ 2,957' MD

TUBULAR DETAIL

Casing String	Casing Size (in)	Weight (Min)	Grade (Min)	Planned Interval	
				From	To
Conductor	20	94.0 #	J-55	0'	126'
Surface	13.375	54.4 #	J-55	0'	591'
Interm/Coal	9.625	36.0 #	J-55	0'	2,957'
Production	5.5	20.0 #	P-110 HP	0'	16,689'

CEMENT DETAIL

	Sacks	Class	Density
Conductor	160	A	19.3
Surface	598	A	15.6
Intermediate	966	A	15.6
Production	2864	A	15.6



KOP at 6,918' MD

Freshwater Depth - 541' TVD
 Coal Depth - 1,492' TVD
 Saltwater Depth - 1,556' TVD
 TVD - 7,681'
 TMD - 16,689'

DMAH 12/15/20

7,564' Target Center

TD at 16,689' MD
 7,681' TVD

EOB at 8,256' MD

SHL Onondaga 7,580' TVD

Onondaga 7,697' TVD

8,256' to 16,689'
 12.5-13.5 ppg

Created by: Alex Pfeifer on 12/15/2020

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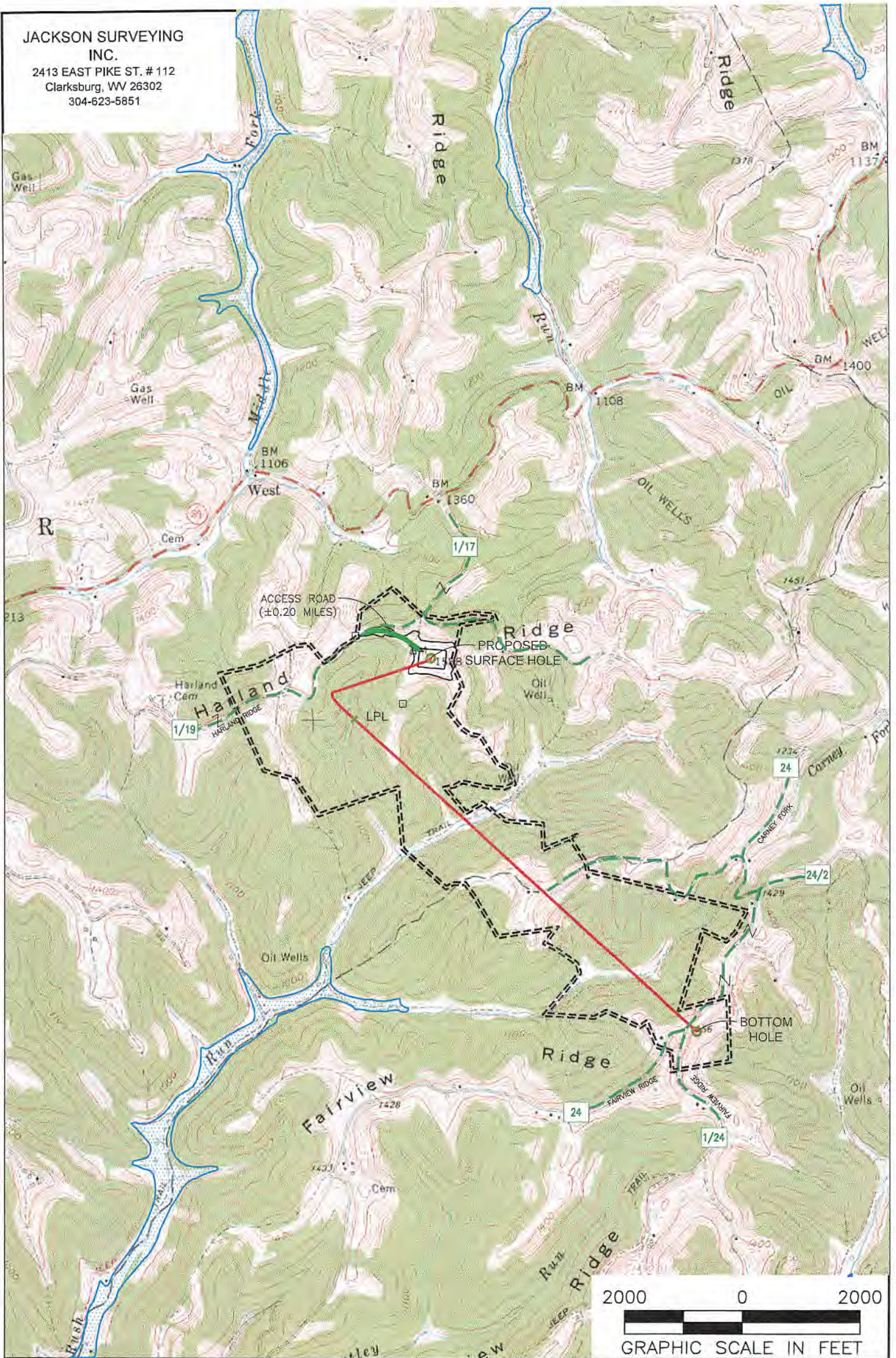
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Ritchea WTZ 6H AOR

API	Operator	Status	Latitude	Longitude	Vertical TD	Producing Formation	Producing Zones Not Perforated
01234	Perkins Oil and Gas Inc.	Active	39.7083	80.6611	4285'	Gordon Stray, Gordon.	Berea, Slst
01294	Perkins Oil and Gas Inc.	Active	39.675	80.625	3450'	Gordon Stray, Gordon	Shale & Slst, Berea

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JACKSON SURVEYING
INC.
2413 EAST PIKE ST. # 112
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 TAX PARCEL MAPS PROVIDED BY CLIENT AND/OR FIELD LOCATIONS.
2. THIS PLAT DOES NOT REPRESENT A BOUNDARY SURVEY OF THE PARCELS SHOWN HEREON.
4. ALL INSETS ARE GRID NORTH UNLESS OTHERWISE DEPICTED.

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LEGEND:

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

WELL OPERATOR:
SWN PRODUCTION COMPANY, LLC
ADDRESS:
1300 FORT PIERPONT ROAD, SUITE 200 MORGANTOWN, WV 26508
SURFACE OWNER:
WILLIAM D. RITCHEA & SHIRLEY E. RITCHEA

WELL (FARM) NAME:
WILLIAM RITCHEA WTZ
COUNTY - CODE
WETZEL - 103
USGS 7 1/2 QUADRANGLE MAP NAME
WILEYVILLE, WV

WELL #
6H
SERIAL #
PROCTOR

WW-9
(4/16)

API Number 47 - 103 - _____
Operator's Well No. William Ritchea WZ 6H

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) Fish Creek Quadrangle Wileyville

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 _____)
- Reuse (at API Number _____)
- Off Site Disposal (Supply form WW-9 for disposal location)
- Other (Explain _____)

DmH
1-28-20

Will closed loop system be used? If so, describe: Yes- See Attachment 3A

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? Attachment 3B

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

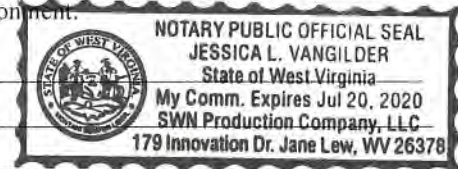
Apex Sanitary Landfill 06-08438, Brooke Co SWF-1013,

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 *Brittany Woody*
Company Official (Typed Name) Brittany Woody
Company Official Title Senior Regulatory Analyst



Subscribed and sworn before me this 23rd day of January, 20 20
Jessica L. Vangilder Notary Public
My commission expires 7-20-20

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SWN Production Co., LLC

Proposed Revegetation Treatment: Acres Disturbed 13.6 Prevegetation pH _____

Lime as determined by pH test min.2 Tons/acre or to correct to pH 9.7

Fertilizer type 10-20-20

Fertilizer amount 600/500 lbs/acre

Mulch Hay/Straw Tons/acre

Seed Mixtures

Temporary

Permanent

Seed Type lbs/acre


Seed Type lbs/acre

Attachment 3C

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.

Plan Approved by: 

Comments: _____

Title: Oil & Gas Inspector

Date: 1-28-20

Field Reviewed? Yes No

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Attachment 3A

CLOSED LOOP SYSTEM

The closed loop system is designed to eliminate the use of reserve pits by providing a higher level of solids control processing and using steel pits for capture of drill cuttings. The cuttings are then processed to achieve landfill requirements before hauling to approved landfills. The liquids are processed to recycle into the active mud system or to transfer to onsite temporary storage as needed.

The closed loop system consists of several sets of a shale gas separator (often called a 'methana'), several banks of solids shakers, high speed centrifuges (1 or 2) used to process the fluid portion of the mud system to remove low gravity solids, low speed centrifuge used for barite recovery in high weight liquid drilling systems, a dewatering system (for air intervals and if freshwater mud systems are in use) used to further clean liquids by flocculation and additional mechanical separation, associated open top tanks for processing liquids and capturing solids for disposal, and transfer pumps to move fluids through the processes. There is an area adjacent to the cuttings tanks (Red Zone) where a track hole is utilized to recover the processed cuttings for loading into containers for hauloff. (See attached schematic of a generic closed loop system layout)

Below are discussions of the processes used when drilling the air interval or liquids interval.

AIR DRILLING INTERVALS

During air drilling operations, flow from the rig will pass down the flowline to the Shale Gas Separator (sometimes called a methane) where gas and liquids/solids are separated. Gas is sent to the flare scrubber tank and is flared at the flare stack. Solids and fluids pass across a shaker system to separate solids from liquids. Solids pass into the cuttings tanks where they are captured for drying and hauloff to an approved landfill site. Liquids fall into a shaker tank and are collected by a centrifugal pump to be processed by the high speed centrifuge to further separate liquids and solids. Solids are then dumped into the cuttings tank for drying and hauloff. Liquids are further processed to remove additional low gravity solids before being reused or transferred to onsite storage.

LIQUIDS DRILLING (FRESHWATER, BRINE, SOBM)

When drilling is converted to liquids drilling, the shale gas separator and associated shaker tank are bypassed, and the liquids system is processed over the primary and drying shaker systems. Cuttings drop into the cuttings tank for additional processing. Any recoverable associated liquids attached to the cutting are recovered out the tank and processed through the low gravity (high speed) and barite recovery centrifuges (low speed) to further remove low gravity solids and to recover barite for reuse in the mud systems.

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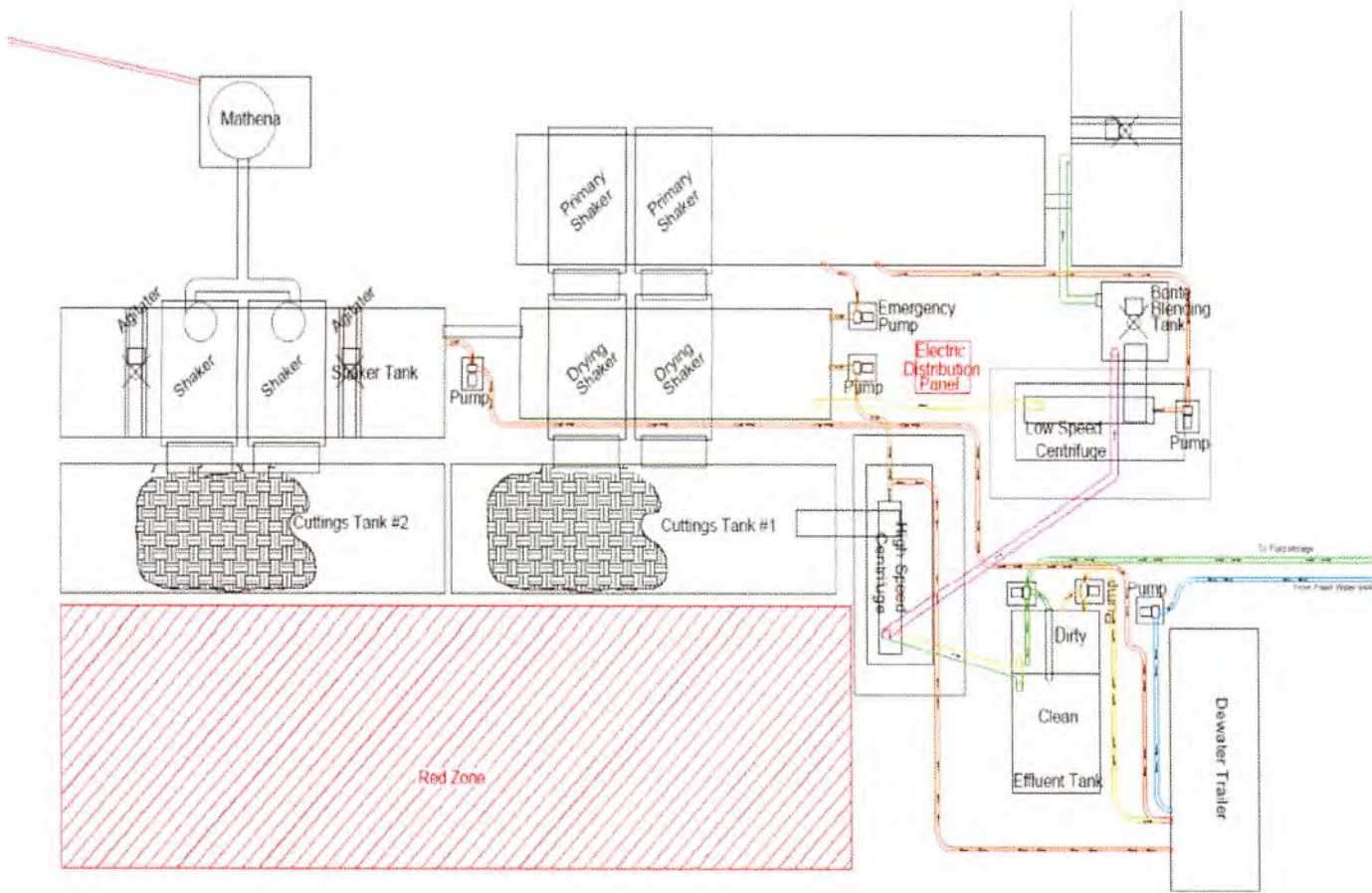
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Solids Control Layout



EXAMPLE SCHEMATIC FOR CLOSED LOOP SOLIDS CONTROL SYSTEM

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Attachment 3B

Drilling Mediums

Surface/Coal(if present)/Freshwater Intervals:

Air

Freshwater (if needed based on conditions)

Intermediate/Coal (if present):

Air

Production Hole:

Air

Synthetic Oil (Base Fluid for mud system)

Barite

Calcium Chloride

Lime

Organophilic Bentonite

Primary and Secondary Emulsifiers

Gilsonite

Calcium Carbonate

Friction Reducers

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WVD Seeding Specification

R² → V⁺
A

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

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%	All legumes are innoculated at 5x normal rate
White Clover	5%	
Birdsfoot Trefoil	5%	
Rough Bluegrass	5%	
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%	<div style="writing-mode: vertical-rl; transform: rotate(180deg);"> <p style="margin: 0;">Office RECEIVED of Oil and Gas DEC 2 2020 WV Department of Environmental Protection</p> </div>
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

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SWN Production Company, LLC
1300 Fort Pierpont Drive, Suite 201
Morgantown, West Virginia 26508

API NO. 47-XXX-XXXXX
WELL NAME: William Ritchea WTZ 6H
Wileyville QUAD
Proctor DISTRICT
WETZEL COUNTY, WEST VIRGINIA

Submitted by:

Name: Brittany Woody

Date: 1/6/2020

Brittany Woody

Title: Senior Regulatory Analyst

SWN Production Co., LLC

Approved by:

Name: *[Signature]*

Date: 1-28-20

Title: Oil + Gas Inspector

Approved by:

Name: _____

Date: _____

Title: _____

Latitude: 39°42'30"

SURFACE HOLE 9647'

Latitude: 39°40'00"

BOTTOM HOLE 4752'

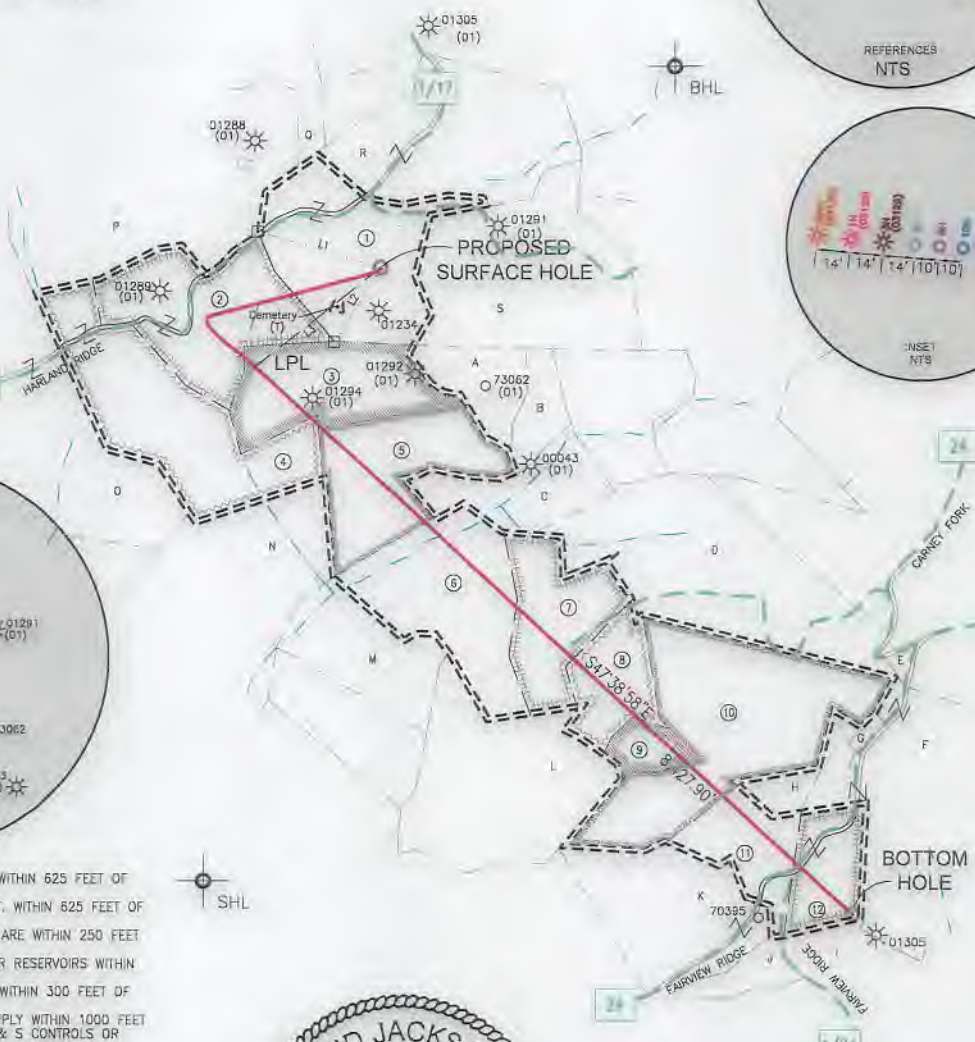
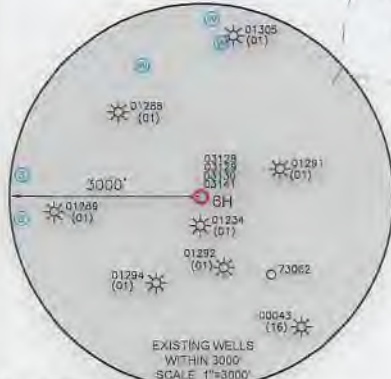
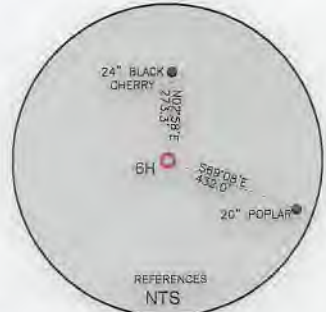
JACKSON SURVEYING INC.

2413 EAST PIKE ST. # 112
Clarksburg, WV 26302
304-623-5851

LINE	BEARING	DISTANCE	DESCRIPTION	MONUMENT
L1	N 73°45'00" W	1334.63'	SHL TO LANDMARK	FD. 1" IRON PIN
L2	S 32°07'13" W	905.43'	SHL TO LANDMARK	FOUND STONE
LINE	BEARING	DISTANCE	CURVE LENGTH	DESCRIPTION
L3	S 51°45'34" W	1659.05'	2618.74'	SHL TO LPL

SURFACE HOLE LOCATION (SHL):
UTM (NAD83, ZONE 17, METERS): NORTHING: 4,391,142.056 EASTING: 529,222.656
LANDING POINT (LPL):
UTM (NAD83, ZONE 17, METERS): NORTHING: 4,390,829.060 EASTING: 528,825.485
BOTTOM HOLE LOCATION (BHL):
UTM (NAD83, ZONE 17, METERS): NORTHING: 4,389,098.530 EASTING: 530,723.945

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

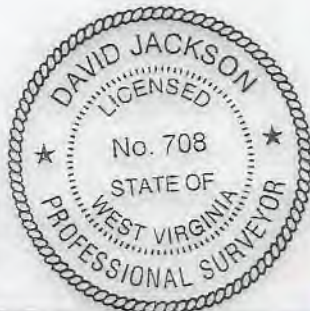


- WELL RESTRICTIONS**
1. NO OCCUPIED DWELLINGS > 2500 SQ FT. WITHIN 625 FEET OF CENTER OF PAD.
 2. NO AGRICULTURE BUILDINGS > 2500 SQ FT. WITHIN 625 FEET OF CENTER OF PAD.
 3. NO WATER WELLS OR DEVELOPED SPRINGS ARE WITHIN 250 FEET OF PROPOSED WELL.
 4. NO PERENNIAL STREAMS, LAKES, PONDS, OR RESERVOIRS WITHIN 100 FEET OF THE LIMITS OF DISTURBANCE.
 5. NO NATURALLY PRODUCING TROUT STREAM WITHIN 300 FEET OF LIMITS OF DISTURBANCE.
 6. 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**
1. SURFACE AND ROYALTY OWNER INFORMATION AND THEIR BOUNDARIES SHOWN HEREON WERE PLOTTED FROM DEEDS AND/OR TAX PARCEL MAPS PROVIDED BY CLIENT AND/OR FIELD LOCATIONS.
 2. THIS PLAT DOES NOT REPRESENT A BOUNDARY SURVEY OF THE PARCELS SHOWN HEREON.
 3. ALL INSETS ARE GRID NORTH UNLESS OTHERWISE DEPICTED.

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

P.S. 708 *David L Jackson*



COMPANY: **SWN** Production Company, LLC

	(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS	MINIMUM DEGREE OF ACCURACY: 1/200	WILLIAM RITCHEA WTZ
	WVDEP OFFICE OF OIL & GAS 601 57TH STREET CHARLESTON, WV 25034	PROVEN SURVEY SOURCE OF ELEVATION: GRADE GPS (NAVD 88, US FT)	OPERATOR'S WELL #: 6H API WELL #: 47 STATE 103 COUNTY 03369 PERMIT HGA

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

WATERSHED: FISH CREEK (HUC-10) ELEVATION: 1562.6' STAKED

DISTRICT: PROCTOR COUNTY: WETZEL QUADRANGLE: WILEYVILLE, WV

SURFACE OWNER: WILLIAM D. RITCHEA & SHIRLEY E. RITCHEA ACREAGE: ±62.00

OIL & GAS ROYALTY OWNER: WILLIAM D. RITCHEA & SHIRLEY E. RITCHEA ACREAGE: ±62.00

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: 7,681' TVD 16,689' TMD



WELL OPERATOR: SWN PRODUCTION COMPANY, LLC	DESIGNATED AGENT: BRITTANY WOODY
ADDRESS: 1300 FORT PIERPONT ROAD, SUITE 200	ADDRESS: 1300 FORT PIERPONT ROAD, SUITE 200
CITY: MORGANTOWN STATE: WV ZIP CODE: 26508	CITY: MORGANTOWN STATE: WV ZIP CODE: 26508

LEGEND: * PROPOSED SURFACE HOLE / BOTTOM HOLE * EXISTING / PRODUCING WELLHEAD LPL* LANDING POINT LOCATION W EXISTING WATER WELL S EXISTING SPRING	--- SURVEYED BOUNDARY --- DRILLING UNIT --- LEASE BOUNDARY --- PROPOSED PATH	REVISIONS: DATE: 12-11-2020 DRAWN BY: N. MANO SCALE: 1" = 2000' DRAWING NO: WELL LOCATION PLAT
---	---	--

JACKSON SURVEYING
 INC.
 2413 EAST PIKE ST. # 112
 Clarksburg, WV 26302
 304-623-5851

WELL BORE TRACTS		
TRACT	SURFACE OWNER (S) / ROYALTY OWNER (R)	TAX PARCEL
1	RITCHEA WILLIAM D & SHIRLEY E (S/R)	12-0015-21
TRACT	SURFACE OWNER (S)	TAX PARCEL
2	PITOSCIA WILLIAM R(S)	12-0014-27
3	DUELLEY BERNARD LEE ET AL & HALL SUSAN (S)	12-0015-25
4	PITOSCIA ANTHONY A & PITOSCIA DAVID T (S)	12-0014-26
5	LEMASTERS HAROLD E & BETTY S; LEMASTERS KEYSTONE TRUST & STANSBERRY LINDA SNIDER & SNIDER JAMES F. (S)	12-0015-31
6	MELLOTT TERREL (S)	01-0009-14
7	A&D WOODLANDS LTD(S)	01-0009-15
8	RITCHEA WILLIAM D ; RITCHEA SHIRLEY (S)	01-0009-16
9	RITCHEA WILLIAM D ; RITCHEA SHIRLEY (S)	01-0009-05
10	LEMASTERS HAROLD E & BETTY S; LEMASTERS KEYSTONE TRUST & STANSBERRY LINDA SNIDER & SNIDER JAMES F.(S)	01-0010-21
11	JARRELL WILMA & JARRELL (S)	01-0010-45
12	WYKERT WAYNE (S)	01-0010-45.1

ADJOINING OWNERS TABLE		
TRACT	SURFACE OWNER	TAX PARCEL
A	DUELLEY BERNARD LEE ET AL & HALL SUSAN	12-0015-26
B	BROWN SANDY K	12-0015-27
C	LEMASTERS HAROLD E. & BETTY S.; LEMASTERS KEYSTONE TRUST & STANSBERRY LINDA SNIDER & SNIDER JAMES F.	12-0015-32
D	MELOTT TERREL LEMOYN	01-0010-22
E	WYKERT ERIC D	01-0010-23
F	MCCRAY LINDA ETAL	01-0010-33
G	RICHTER ROMNEY & CAROL	01-0010-33.1
H	WYKERT WAYNE	01-0010-45.2
I	CAIN SAMUEL EST & CAIN GLEN JR.	01-0010-46
J	JARRELL WILMA & JEFFREY	01-0009-13
K	JARRELL WILMA & JEFFREY	01-0009-12
L	MELLOTT EDWARD NOEL HRS	01-0009-06
M	RICHMAN TROY M	01-0009-04
N	CECIL ROBERT LEE	12-0015-33
O	RIDGETOP CAPITAL LP	12-0014-25
P	PITOSCIA WILLIAM R	12-0014-16
Q	URBANEK SCOTT J & CHRYSAL A	12-0015-13
R	LEMASTERS H C HRS & MANKER CHARLES V REVOCABLE LIVING TRUST	12-0015-18
S	DUELLEY BERNARD LEE ET AL & HALL SUSAN	12-0015-22
T	LEMASTERS CEMETERY	12-15-20

REVISIONS:	COMPANY:	 		
	OPERATOR'S	WILLIAM RITCHEA WTZ		
	WELL #:	47-103-03364	6H	
	DISTRICT:	PROCTOR	COUNTY:	WETZEL
			STATE:	WV
		DATE:	12-11-2020	
		DRAWN BY:	N. MANO	
		SCALE:	N/A	
		DRAWING NO:		
		WELL LOCATION	PLAT 2	

**INFORMATION SUPPLIED UNDER WEST VIRGINIA CODE
Chapter 22, Article 6A, Section 5(a)(5)
IN LIEU OF FILING LEASE(S) AND OTHER CONTINUING CONTRACT(S)**

Under the oath required to make the verification on page 1 of this Notice and Application, I depose and say that I am the person who signed the Notice and Application for the Applicant, and that –

- (1) the tract of land is the same tract described in this Application, partly or wholly depicted in the accompanying plat, and described in the Construction and Reclamation Plan;
- (2) the parties and recordation data (if recorded) for lease(s) or other continuing contract(s) by which the Applicant claims the right to extract, produce or market the oil or gas are as follows:

Lease Name or Number	Grantor, Lessor, etc.	Grantee, Lessee, etc.	Royalty	Book/Page
----------------------	-----------------------	-----------------------	---------	-----------

SEE EXHIBIT "A"

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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.

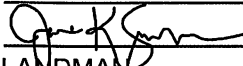
By: 
Its: LANDMAN

EXHIBIT "A"

Attached to and made a part of the State of West Virginia Oil and Gas Form, WW-6A1, by SWN Production Company, L.L.C., Operator
 William Ritchea Wtz 6H
 Wetzel County, West Virginia

#	TMP	LESSOR	LESSEE	ROYALTY	BK/PG	Interest Not Leased by SWN Production Company, LLC
1)	12-15-21 ✓	William D. Ritchea and Shirley E. Ritchea, husband and wife Bayer Corporation, successor in interest to Mobay Chemical Corporation Bayer Material Science LLC Chesapeake Appalachia, L.L.C.	Mobay Chemical Corporation Bayer Material Science LLC Chesapeake Appalachia, L.L.C. SWN Production Company, LLC	12.50%	60A/59 396/1 140A/883 157A/540	0.0000% ✓
2)	12-14-27 ✓	Tasa Corporation J&J Enterprises, Inc. Haddad and Brooks, Inc. Chesapeake Appalachia, L.L.C.	J&J Enterprises, Inc. Haddad and Brooks, Inc. Chesapeake Appalachia, L.L.C. SWN Production Company, LLC	12.50%	65A/313 66A/185 102A/302 157A/540	0.0000%
		Herbert W. Lindsay and Marie Lindsay Haddad and Brooks, Inc. Chesapeake Appalachia, L.L.C.	Haddad and Brooks, Inc. Chesapeake Appalachia, L.L.C. SWN Production Company, LLC	12.50%	64A/423 102A/302 157A/540	
		Russell Rand and Gwendolyn Rand Haddad and Brooks, Inc. Chesapeake Appalachia, L.L.C.	Haddad and Brooks, Inc. Chesapeake Appalachia, L.L.C. SWN Production Company, LLC	12.50%	64A/425 102A/302 157A/540	✓
3)	12-15-25 ✓	Harold Eugene Lemasters and Betty Lee Lemasters, H/W Mobay Chemical Corporation Haddad and Brooks, Inc. Chesapeake Appalachia, L.L.C.	Mobay Chemical Corporation Haddad and Brooks, Inc. Chesapeake Appalachia, L.L.C. SWN Production Company, LLC	12.50%	65A/52 65A/67 102A/302 157A/540	0.0000%
		Anglo C. Ballard and Virginia M. Ballard, husband and wife Mobay Chemical Corporation Haddad and Brooks, Inc. Chesapeake Appalachia, L.L.C.	Mobay Chemical Corporation Haddad and Brooks, Inc. Chesapeake Appalachia, L.L.C. SWN Production Company, LLC	12.50%	62A/284 65A/67 102A/302 157A/540	
		Harold Sapp and Olive Sapp, husband and wife Mobay Chemical Corporation Haddad and Brooks, Inc. Chesapeake Appalachia, L.L.C.	Mobay Chemical Corporation Haddad and Brooks, Inc. Chesapeake Appalachia, L.L.C. SWN Production Company, LLC	12.50%	62A/319 65A/67 102A/302 157A/540	
		Garnet Snider and Hugh Snider, husband and wife Mobay Chemical Corporation	Mobay Chemical Corporation Haddad and Brooks, Inc.	12.50%	64A/647 65A/67	

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 William Ritchea Wtz 6H
 Wetzel County, West Virginia

	Haddad and Brooks, Inc. Chesapeake Appalachia, L.L.C.	Chesapeake Appalachia, L.L.C. SWN Production Company, LLC		102A/302 157A/540	
	Haddad & Brooks, Inc.	SWN Production Company, LLC	18.00%	173A/541	
	BRC Appalachian Minerals I, LLC BRC Working Interest Company, LLC Chesapeake Appalachia, L.L.C.	BRC Working Interest Company, LLC Chesapeake Appalachia, L.L.C. SWN Production Company, LLC	12.88%	103A/320 103A/470 157A/540	
	Sarah J. Taylor, Friend Taylor, her husband, CT Lemasters and Lulu Lemasters, his wife, L.L. Lemasters and Martha J. Lemasters, his wife, Wesley S. Smith and Alma Smith, his wife, Jessie Smith and Irene Smith, his wife, Leona Riter and Virginia Smith and her husband Harold Smith	J. D. Wade and E. Carney, partners as Wade and Carney	12.50%	25A/337	0.0000%
	C.E. Adams, J.D. Wade, and E. J. Carney	O.R. Marty		26A/436	
	C.E. Adams, J.D. Wade, and E. J. Carney	C.M. Hartwig		26A/437	
	J. D. Wade and E. Carney, being partners as Wade and Carney	Chas. Palmer		43A/222	
	Leonard S. Hall, Trustee in Bankruptcy of Jason D. Wade, Bankrupt	J.M. Coggle		31A/281	
	E.J. Carney and Sadie Carney, husband and wife	J.M. Coggle		33A/266	
	The Security Trust Company, as the Executor and Trustee under the Last Will and Testament of J.M. Cooper, deceased	Carolyn L. Coogle and Charles J. Coogle		177/9	
	Caroline L. Coogle, Charles J. Coogle and Edith Coogle, husband and wife	George F. Eagon		40A/149	
	Martha Palmer, as Administratrix of the Estate of Charles R. Palmer	George F. Eagon		43A/221	
	Blanche Eagon, in her own individual right and as Executrix of the Estate of George F. Eagon, Mildred M. Lartigue and Carl L. Eagon	Friend West		43A/224	
	Mary Jane West, widow, in her own right and as Executrix of the Estate of Friend West	Phillip John West		52A/417	
	Glenda P. Goddard	Haddad and Brooks, Inc.		65A/406	
	Haddad and Brooks, Inc.	Chesapeake Appalachia, L.L.C.		102A/302	
	Chesapeake Appalachia, L.L.C.	SWN Production Company, LLC		157A/540	

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William Ritchea WTZ 6H
Wetzel County, West Virginia

4)	12-14-26 ✓	<p>Nathan Williams, Nancy Williams, his wife, Wiley Williams and Elsie Williams, his wife, Amanda Howdenschelt and Pearl Howdenschelt, her husband, D.M. Williams and Edney Williams, his wife; Hannah Postlethwait and S.L. Postlethwait, her husband; S.W. Williams and Bessie Williams, his wife; W.H. Williams and Ota Williams, his wife; Vina Furbee and Barney Furbee, her husband</p> <p>J.O. Shrader and Maude Shrader, husband and wife</p> <p>J.O. Shrader and Maude Shrader, husband and wife</p> <p>William P. Bacon, Administrator of the Estate of Willis Bacon</p> <p>Blanche Eagon, widow, in her own right and as Executrix of the Estate of George F. Eagon, Mildred M. Lartigue and Carl L. Eagon</p> <p>Claude E. Bettler, widower, in his own right and as Executor of the Estate of Elta L. Bettler</p> <p>Mary Jane West, widow, in her own right and as Executrix of the Estate of Friend West</p> <p>Phillip John West</p> <p>Glenda P. West</p> <p>Michael S. West</p> <p>Haddad and Brooks, Inc.</p> <p>Chesapeake Appalachia, L.L.C.</p>	<p>J.O. Shrader</p> <p>Willis Bacon and Claude E> Bettler</p> <p>George F. Eagon</p> <p>Elta L. Bettler</p> <p>Friend West</p> <p>Friend West</p> <p>Phillip John West</p> <p>Glenda P. West</p> <p>Haddad and Brooks, Inc.</p> <p>Haddad and Brooks, Inc.</p> <p>Chesapeake Appalachia, L.L.C.</p> <p>SWN Production Company, LLC</p>	12.50%	<p>18A/401</p> <p>31A/235</p> <p>31A/236</p> <p>33A/234</p> <p>43A/224</p> <p>43A/319</p> <p>52A/417</p> <p>57A/477</p> <p>72A/178</p> <p>86A/462</p> <p>102A/302</p> <p>157A/540</p>	0.0000%	✓
5)	12-15-31 ✓	<p>Sarah J. Taylor, Friend Taylor, her husband, CT Lemasters and Lulu Lemasters, his wife, L.L. Lemasters and Martha J. Lemasters, his wife, Wesley S. Smith and Alma Smith, his wife, Jessie Smith and Irene Smith, his wife, Leona Rlter and Virginia Smith and her husband Harold Smith</p> <p>C.E. Adams, J.D. Wade, and E. J. Carney</p> <p>C.E. Adams, J.D. Wade, and E. J. Carney</p> <p>J. D. Wade and E. Carney, being partners as Wade and Carney</p> <p>Leonard S. Hall, Trustee in Bankruptcy of Jason D. Wade, Bankrupt</p>	<p>J. D. Wade and E. Carney, partners as Wade and Carney</p> <p>O.R. Marty</p> <p>C.M. Hartwig</p> <p>Chas. Palmer</p> <p>J.M. Coggle</p>	12.50%	<p>25A/337</p> <p>26A/436</p> <p>26A/437</p> <p>43A/222</p> <p>31A/281</p>	0.0000%	

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William Ritchea Wtz 6H
Wetzel County, West Virginia

		E.J. Carney and Sadie Carney, husband and wife	J.M. Coggle		33A/266	
		The Security Trust Company, as the Executor and Trustee under the Last Will and Testament of J.M. Cooper, deceased	Carolyn L. Coogle and Charles J. Coogle		177/9	
		Caroline L. Coogle, Charles J. Coogle and Edith Coogle, husband and wife	George F. Eagon		40A/149	
		Martha Palmer, as Administratrix of the Estate of Charles R. Palmer	George F. Eagon		43A/221	
		Blanche Eagon, in her own individual right and as Executrix of the Estate of George F. Eagon, Mildred M. Lartigue and Carl L. Eagon	Friend West		43A/224	
		Mary Jane West, widow, in her own right and as Executrix of the Estate of Friend West	Phillip John West		52A/417	
		Glenda P. Goddard	Haddad and Brooks, Inc.		65A/406	
		Haddad and Brooks, Inc.	Chesapeake Appalachia, L.L.C.		102A/302	
		Chesapeake Appalachia, L.L.C.	SWN Production Company, LLC		157A/540	✓
6)	1-9-14 ✓	Ralph Herman Baxter, a/k/a Ralph Baxter, a widower	Chesapeake Appalachia, L.L.C.	17.00%	136A/435	0.0000%
		Chesapeake Appalachia, L.L.C.	SWN Production Company, LLC		157A/540	✓
		Paul J. Shiben and Katherine Mensore, the surviving Executors of the Estates, and under the Wills, of Joseph & Minnie Shiben, deceased, and Shiben Estates, Inc., c/o Paul Shiben	Haddad and Brooks, Inc.	15.00%	72A/459	
		Haddad and Brooks, Inc.	Chesapeake Appalachia, L.L.C.		102A/302	
		Chesapeake Appalachia, L.L.C.	SWN Production Company, LLC		157A/540	
		Hammett Land and Minerals, LLC	SWN Production Company, LLC	18.00%	186A/254	
		Georgia Lynn Snyder, a single woman	SWN Production Company, LLC	16.00%	169A/590	
		Sonya L. Hughes, f/k/a Sonya Coogle, a single woman	SWN Production Company, LLC	16.00%	165A/111	
		Kimberly J. Pedrazas and Robert A. Pedrazas, wife and husband	SWN Production Company, LLC	18.00%	225A/811	✓
7)	1-9-15 ✓	Frank W. Watson	Haddad and Brooks	12.500%	85A/160	0.0000%
		Haddad and Brooks	Chesapeake Appalachia, L.L.C.		104A/230	
		Chesapeake Appalachia, L.L.C.	SWN Production Company, LLC		157A/540	
		Kathryn Joyce May, a/k/a Kathryn J. May, a/k/a Kathryn Coogle May, by her Attorney-in-Fact, Fred L. May and Fred L. May, her husband	Chesapeake Appalachia, L.L.C.	17.00%	133A/625	
		Chesapeake Appalachia, L.L.C.	SWN Production Company, LLC		157A/540	

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 William Ritchea WTZ 6H
 Wetzel County, West Virginia

		Ralph Herman Baxter, a/k/a Ralph Baxter, a widower Chesapeake Appalachia, L.L.C.	Chesapeake Appalachia, L.L.C. SWN Production Company, LLC	17.00%	136A/302 157A/540	
		Sonya L. Hughes, f/k/a Sonya Coogle, a single woman Chesapeake Appalachia, L.L.C.	Chesapeake Appalachia, L.L.C. SWN Production Company, LLC	17.00%	152A/118 157A/540	
		Georgia Lynn Snyder, a single woman Hammett Land and Minerals, LLC	SWN Production Company, LLC SWN Production Company, LLC	16.00%	169A/590 186A/256	
		Lloyd Joe Prine Antero resources Corporation	Antero resources Corporation SWN Production Company, LLC	16.00%	181A/331 248A/897	✓
8)	1-9-16 ✓	Coastal Forest Company, a Virginia corporation, d/b/a Coastal Timberlands Company, f/k/a Coastal Lumber Company Chesapeake Appalachia, L.L.C.	Chesapeake Appalachia, L.L.C. SWN Production Company, LLC	17.000%	126A/620 157A/540	0.0000%
		Kathryn Joyce May, a/k/a Kathryn J. May, a/k/a Kathryn Coogle May, by her Attorney-in-Fact, Fred L. May and Fred L. May, her husband Chesapeake Appalachia, L.L.C.	Chesapeake Appalachia, L.L.C. SWN Production Company, LLC	17.00%	133A/615 157A/540	
		Ralph Herman Baxter, a/k/a Ralph Baxter, a widower Chesapeake Appalachia, L.L.C.	Chesapeake Appalachia, L.L.C. SWN Production Company, LLC	17.00%	136A/297 157A/540	
		Sonya L. Hughes, f/k/a Sonya Coogle, a single woman Chesapeake Appalachia, L.L.C.	Chesapeake Appalachia, L.L.C. SWN Production Company, LLC	17.00%	152A/128 157A/540	
		Georgia Lynn Snyder, a single woman Hammett Land and Minerals, LLC	SWN Production Company, LLC SWN Production Company, LLC	16.00%	169A/590 186A/252	
9)	1-9-5 ✓	Kathryn Joyce May, a/k/a Kathryn J. May, a/k/a Kathryn Coogle May, by her Attorney-in-Fact, Fred L. May and Fred L. May, her husband Chesapeake Appalachia, L.L.C.	Chesapeake Appalachia, L.L.C. SWN Production Company, LLC	17.00%	133A/630 157A/540	0.0000%
		Ralph Herman Baxter, a/k/a Ralph Baxter, a widower Chesapeake Appalachia, L.L.C.	Chesapeake Appalachia, L.L.C. SWN Production Company, LLC	17.00%	136A/425 157A/540	
		Christopher P. Getchy, a married man dealing in his sole and separate property	SWN Production Company, LLC	18.00%	184A/228	
		James E. Melott and Doris J. Melott, husband and wife	SWN Production Company, LLC	18.00%	184A/218	
		Ronald Lee Melott, a single man	SWN Production Company, LLC	18.00%	184A/226	
		David W. Melott, a single man	SWN Production Company, LLC	18.00%	186A/238	

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 William Ritchea WTZ 6H
 Wetzel County, West Virginia

		Catherine L. Tyre, f/k/a Catherine L. Melott, a single woman	SWN Production Company, LLC	18.00%	184A/230	
		Sonya L. Hughes, f/k/a Sonya Coogle, a single woman	SWN Production Company, LLC	17.00%	152A/123	
		Georgia Lynn Snyder, a single woman	SWN Production Company, LLC	16.00%	169A/590	
		Hammett Land and Minerals, LLC	SWN Production Company, LLC	16.00%	193A/464	✓
10	1-10-21 ✓	George Ray Lemley Haddad and Brooks, Inc. Chesapeake Appalachia, L.L.C.	Haddad and Brooks, Inc. Chesapeake Appalachia, L.L.C. SWN Production Company, LLC	12.50%	79A/194 104A/230 157A/540	0.0000%
		Sandra L. Richie Haddad and Brooks, Inc. Chesapeake Appalachia, L.L.C.	Haddad and Brooks, Inc. Chesapeake Appalachia, L.L.C. SWN Production Company, LLC	12.50%	79A/202 104A/230 157A/540	
		James H. Rush Haddad and Brooks, Inc. Chesapeake Appalachia, L.L.C.	Haddad and Brooks, Inc. Chesapeake Appalachia, L.L.C. SWN Production Company, LLC	12.50%	79A/198 104A/230 157A/540	
		William R. Gaddis Haddad and Brooks, Inc. Chesapeake Appalachia, L.L.C.	Haddad and Brooks, Inc. Chesapeake Appalachia, L.L.C. SWN Production Company, LLC	12.50%	84A/35 104A/230 157A/540	
		Mary Jane Poleski, a widow Chesapeake Appalachia, L.L.C.	Chesapeake Appalachia, L.L.C. SWN Production Company, LLC	17.00%	128A/886 157A/540	
		Sarah Jean Rush Chesapeake Appalachia, L.L.C.	Chesapeake Appalachia, L.L.C. SWN Production Company, LLC	17.00%	128A/891 157A/540	
		Marlene Louise Gardner Chesapeake Appalachia, L.L.C.	Chesapeake Appalachia, L.L.C. SWN Production Company, LLC	17.00%	128A/896 157A/540	
		Melvin E. Silvis and Patricia J. Silvis, husband and wife Chesapeake Appalachia, L.L.C.	Chesapeake Appalachia, L.L.C. SWN Production Company, LLC	17.00%	128A/901 157A/540	
		William J. Grubbs and Janet C. Grubbs, husband and wife Chesapeake Appalachia, L.L.C.	Chesapeake Appalachia, L.L.C. SWN Production Company, LLC	17.00%	130A/559 157A/540	
		Nancy Grubbs Burford., a widow Chesapeake Appalachia, L.L.C.	Chesapeake Appalachia, L.L.C. SWN Production Company, LLC	17.00%	130A/842 157A/540	
		Angela Crellin Chesapeake Appalachia, L.L.C.	Chesapeake Appalachia, L.L.C. SWN Production Company, LLC	17.00%	132A/747 157A/540	
		Geraldine Jackson Chesapeake Appalachia, L.L.C.	Chesapeake Appalachia, L.L.C. SWN Production Company, LLC	17.00%	132A/742 157A/540	

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	James Withrow, a married man Chesapeake Appalachia, L.L.C.	Chesapeake Appalachia, L.L.C. SWN Production Company, LLC	17.00%	132A/752 157A/540
	Rebecca Massey Chesapeake Appalachia, L.L.C.	Chesapeake Appalachia, L.L.C. SWN Production Company, LLC	17.00%	132A/871 157A/540
	Michael Withrow, a married man Chesapeake Appalachia, L.L.C.	Chesapeake Appalachia, L.L.C. SWN Production Company, LLC	17.00%	134A/520 157A/540
	Christopher Thomas Wood and Brenda Sue Wood, his wife Chesapeake Appalachia, L.L.C.	Chesapeake Appalachia, L.L.C. SWN Production Company, LLC	18.00%	140A/247 157A/540
	Michelle Carpenter, f/k/a Michelle Lea Wood, a married woman dealing in her sole and separate property Chesapeake Appalachia, L.L.C.	Chesapeake Appalachia, L.L.C. SWN Production Company, LLC	18.00%	140A/257 157A/540
	Gregory Paul Wood, a single man Chesapeake Appalachia, L.L.C.	Chesapeake Appalachia, L.L.C. SWN Production Company, LLC	18.00%	140A/252 157A/540
	Jonathan Kent Wood Chesapeake Appalachia, L.L.C.	Chesapeake Appalachia, L.L.C. SWN Production Company, LLC	18.00%	140A/696 157A/540
	Douglas Charles Wood Chesapeake Appalachia, L.L.C.	Chesapeake Appalachia, L.L.C. SWN Production Company, LLC	18.00%	140A/691 157A/540
	Karen G. Kuhn, a/k/a Karen Harbert Kuhn, widow	SWN Production Company, LLC	18.00%	194A/936
	Stephen Guy Pettit & Sarah Pettit, husband and wife	SWN Production Company, LLC	16.00%	167A/430
	James E. Barr and Linda Barr, husband and wife	SWN Production Company, LLC	16.00%	167A/451
	Samuel Burton and Joyce K. Burton, husband and wife	SWN Production Company, LLC	16.00%	167A/442
	James Burton and Tammy Lynn Burton, husband and wife	SWN Production Company, LLC	16.00%	167A/445
	Kermit E. Persinger and Frances Persinger, husband and wife	SWN Production Company, LLC	16.00%	167A/454
	Robert Richmond and Virginia Richmond, husband and wife	SWN Production Company, LLC	16.00%	167A/463
	Charles Spaine and Mary Spaine, husband and wife	SWN Production Company, LLC	16.00%	168A/633
	Suzette Station, a single woman	SWN Production Company, LLC	16.00%	168A/630
	Sam E. Whitlach and Diana Whitlach, husband and wife	SWN Production Company, LLC	16.00%	167A/466
	Joseph Matthew Stocklask and Rhonda Stocklask, husband and wife	SWN Production Company, LLC	16.00%	168A/627

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 Wetzel County, West Virginia

	Allie Virginia Hall, by Billie Jo Beegle as her Attorney-in-Fact	SWN Production Company, LLC	16.00%	168A/636
	Gerald Brett Hawkins and Julie A. Hawkins, husband and wife	SWN Production Company, LLC	16.00%	168A/624
	Ralph Clayton and Sara Clayton, husband and wife	SWN Production Company, LLC	16.00%	167A/460
	Raymond Clayton	SWN Production Company, LLC	16.00%	167A/457
	Judy Ann Frey and Joseph F Frey, wife and husband	SWN Production Company, LLC	16.00%	167A/433
	Frank Anthony Stocklask	SWN Production Company, LLC	16.00%	167A/427
	Alfred E. Burton and Linda A. Burton, husband and wife	SWN Production Company, LLC	16.00%	167A/439
	Okla Dale Burton and Shirley Burton, husband and wife	SWN Production Company, LLC	16.00%	167A/436
	Christy Holmes and Danny L. Holmes, wife and husband	SWN Production Company, LLC	16.00%	167A/448
	Mary Barrett and Michael ray Barrett, wife and husband	SWN Production Company, LLC	16.00%	166A/910
	John David Rush and Judith Rush, husband and wife	SWN Production Company, LLC	16.00%	166A/904
	Harlan C. Wood and Mary L. Wood, husband and wife	SWN Production Company, LLC	16.00%	166A/901
	Marianne F. Wood, a widow	SWN Production Company, LLC	16.00%	166A/913
	Ronald L. hall, a single man	SWN Production Company, LLC	16.00%	166A/919
	Guy Elery Hawkins, a single man	SWN Production Company, LLC	16.00%	170A/469
	Vincent Goff and Joyce Goff, husband and wife	SWN Production Company, LLC	16.00%	166A/916
	William J. Hall	SWN Production Company, LLC	16.00%	166A/924
	Alfred Burns and Belinda Burns, husband and wife	SWN Production Company, LLC	16.00%	166A/907
	Linda Stevens and Alfred Stevens, wife and husband	SWN Production Company, LLC	18.00%	188A/116
	Samuel J. Wood, a married man, dealing in his sole and separate property	SWN Production Company, LLC	18.00%	199A/493
	Marta Jo Zukoff Thomas, a married woman dealing in her sole and separate property	SWN Production Company, LLC	18.00%	199A/499
	Dana Beth Oakland, a married woman, dealing in her sole and separate property	SWN Production Company, LLC	18.00%	199A/505
	Paula Kay Zukoff Romanoski, a married woman, dealing in her sole and separate property	SWN Production Company, LLC	18.00%	199A/665
	Chelsea Oakland, a single woman	SWN Production Company, LLC	18.00%	200A/547

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	John K. Hill, a married man, dealing in her sole and separate property	SWN Production Company, LLC	18.00%	201A/773
	Marilyn P. Dehart	SWN Production Company, LLC	18.00%	201A/779
	Daniel L. Lemasters, a married man, dealing in his sole and separate property	SWN Production Company, LLC	18.00%	203A/50
	Margaret L. Chambers, a single woman	SWN Production Company, LLC	18.00%	203A/817
	Corrinda Kay Nail, a married woman, dealing in her sole and separate property	SWN Production Company, LLC	18.00%	206A/576
	Michael G. Lemasters, a single man	SWN Production Company, LLC	18.00%	207A/673
	Ray Elwood Blake, II, a married man dealing in his sole and separate property	SWN Production Company, LLC	18.00%	221A/934
	Douglas Edward Wood & Shelly Lynn Wood, husband and wife	SWN Production Company, LLC	18.00%	222A/774
	Linda Stansberry, a single woman	SWN Production Company, LLC	18.00%	223A/208
	James F. Snider, a married man dealing in his sole and separate property	SWN Production Company, LLC	18.00%	223A/653
	Carole J. Brownlee, a single woman	SWN Production Company, LLC	18.00%	223A/671
	Kelly J. Wooley, a married woman dealing in her sole and separate property	SWN Production Company, LLC	18.00%	224A/484
	Brett Stiffler, a married man dealing in his sole and separate property	SWN Production Company, LLC	18.00%	224A/490
	Jason James Blake and Sarah E. Cobb, husband and wife	SWN Production Company, LLC	18.00%	225A/786
	Lawrence Brock Hawkins, a married man dealing in his sole and separate property	SWN Production Company, LLC	18.00%	233A/943
	Kathleen M. Wilson, a widow	SWN Production Company, LLC	18.00%	234A/877
	Patricia A. Wallace, a single woman	SWN Production Company, LLC	18.00%	230A/535
	Jay Howard Millard, a married man dealing in his sole and separate property	SWN Production Company, LLC	18.00%	231A/338
	David Russell Sauder and Amy S. Sauder, husband and wife	SWN Production Company, LLC	18.00%	232A/361
	Karen Jane McAfoos f/k/a Karen Jane Sauder, a married woman dealing in her sole and separate property	SWN Production Company, LLC	18.00%	236A/49
	Juanita Lee Meekins, a married woman dealing in her sole and separate property	SWN Production Company, LLC	18.00%	235A/592
	Charlene I. Robbin f/k/a Charlene I. Kraft and Mark B. Robbin, wife and husband	SWN Production Company, LLC	18.00%	235A/459
	Kimberly A. Hill, a widow	SWN Production Company, LLC	18.00%	233A/562
	Dorothy J. Moore and Danny R. Moore, wife and husband	SWN Production Company, LLC	18.00%	233A/544

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	Jonathan S. Lemasters, a married man dealing in his sole and separate property	SWN Production Company, LLC	18.00%	236A/345
	Pamela J. Lemasters f/k/a Pamela J. Lemasters-Putt, a single woman	SWN Production Company, LLC	18.00%	231A/356
	Kevin Lemasters and Sandra C. Lemasters, husband and wife	SWN Production Company, LLC	18.00%	234A/853
	Keith J. Lemasters and Gloria S. Lemasters, husband and wife	SWN Production Company, LLC	18.00%	231A/350
	Lee Roy Lemasters, Jr., a single man, by his Attorney-in-Fact Neita M. Pound	SWN Production Company, LLC	18.00%	231A/332
	Neita M. Pound, a single woman	SWN Production Company, LLC	18.00%	231A/326
	Donna Sue Stevenson, a married woman dealing in her sole and separate property	SWN Production Company, LLC	18.00%	229A/716
	Tammy L. Lemasters, a single woman	SWN Production Company, LLC	18.00%	232A/62
	Tomi A. Skeens, a married woman dealing in her sole and separate property	SWN Production Company, LLC	18.00%	229A/710
	Lee R. Lemasters and Carla J. Lemasters, husband and wife	SWN Production Company, LLC	18.00%	231A/362
	Susan J. Lemasters, a single woman	SWN Production Company, LLC	18.00%	229A/722
	Rose Marie Lemasters-Juresko, a widow, by her Attorney-in-Fact, Linda D. McPherson	SWN Production Company, LLC	18.00%	229A/82
	Joyce Ann Lemasters, a widow	SWN Production Company, LLC	18.00%	234A/593
	Paul Douglas Lemasters and April L. Lemasters, husband and wife	SWN Production Company, LLC	18.00%	234A/841
	Timothy James Lemasters and Brandi Lee Lemasters, husband and wife	SWN Production Company, LLC	18.00%	235A/604
	Cindy L. Volanty f/k/a Cindy Lou Lemasters, a single woman	SWN Production Company, LLC	18.00%	236A/687
	James R. Jackson, a single man	SWN Production Company, LLC	18.00%	227A/735
	Nicole Lee Jackson, a married woman dealing in her sole and separate property	SWN Production Company, LLC	18.00%	227A/729
	David B. Schartiger and Karla R. Schartiger, husband and wife	SWN Production Company, LLC	18.00%	230A/523
	Michael K. Schartiger and Carmen Schartiger, husband and wife	SWN Production Company, LLC	18.00%	231A/570
	Rosemary A. Douglas, a widow	SWN Production Company, LLC	18.00%	229A/704
	Sherry L. Miga, a single woman	SWN Production Company, LLC	18.00%	229A/88
	Jack D. White, a single man	SWN Production Company, LLC	18.00%	232A/355
	Charles R. White a/k/a Charles Robert White and Linda White, husband and wife	SWN Production Company, LLC	18.00%	232A/68

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	Sandra L. Darner and Josh T. Darner, wife and husband	SWN Production Company, LLC	18.00%	232A/349
	Edith A. Douglas, a widow	SWN Production Company, LLC	18.00%	230A/529
	Deborah D. Fisher, a married woman dealing in her sole and separate property	SWN Production Company, LLC	18.00%	233A/209
	Brenda K. Ebert, a married woman dealing in her sole and separate property	SWN Production Company, LLC	18.00%	236A/351
	Dale F. Sapp, a single man	SWN Production Company, LLC	18.00%	232A/50
	George Thomas Sapp, a single man	SWN Production Company, LLC	18.00%	233A/556
	Sharon L. Mick, a married woman dealing in her sole and separate property	SWN Production Company, LLC	18.00%	233A/550
	Mark E. Riter, a married man dealing in his sole and separate property	SWN Production Company, LLC	18.00%	231A/344
	Roy Dale Wood and Junie Mallia Wood	SWN Production Company, LLC	18.00%	231A/564
	Marian Franzi, a widow	SWN Production Company, LLC	18.00%	236A/570
	Jerrold A. Franzi and Deborah L. Franzi, husband and wife	SWN Production Company, LLC	18.00%	232A/56
	Dennis D. Schopper, a married man dealing in his sole and separate property	SWN Production Company, LLC	18.00%	233A/583
	Lou Ann Douglas, a widow	SWN Production Company, LLC	18.00%	233A/943
	Gary Deffenbaugh and Virginia M. Deffenbaugh, husband and wife	SWN Production Company, LLC	18.00%	PENDING
	Lisa J. Gibson	SWN Production Company, LLC	18.00%	PENDING
	Deborah Lamp	SWN Production Company, LLC	18.00%	PENDING
	Vera Jean Rutan	SWN Production Company, LLC	18.00%	PENDING
	Lisa M. Barrile & Jeffrey V. Barrile, wife and husband	SWN Production Company, LLC	18.00%	PENDING
	Deborah Hall-Ryan, a married woman dealing in her sole and separate property	SWN Production Company, LLC	18.00%	PENDING
	Allen J. Hall, a single man	SWN Production Company, LLC	18.00%	PENDING
	Brian Keith Lemasters, a married man dealing in his sole and separate property	SWN Production Company, LLC	18.00%	PENDING
	Michael Richey, a married man dealing in his sole and separate property	SWN Production Company, LLC	18.00%	237A/825
	Beatrice Irene Morleock, a single woman	SWN Production Company, LLC	16.00%	PENDING
	Holly Hall Hatley, a single woman	SWN Production Company, LLC	18.00%	238A/22
	Trudy L. Burke and Paul B. Burke, wife and husband	SWN Production Company, LLC	18.00%	PENDING
	Gale Lee Hall, a married woman dealing in her sole and separate property	SWN Production Company, LLC	18.00%	PENDING

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	Ruth Ellen Massey, a married woman dealing in her sole and separate property	SWN Production Company, LLC	18.00%	PENDING	
	Harold R. Lemasters, Jr., a widower	SWN Production Company, LLC	18.00%	PENDING	
	Lawrence Jay Lemasters & Rebecca Lemasters, husband and wife	SWN Production Company, LLC	18.00%	PENDING	
	Pamela Ann Frabell, a married woman dealing in her sole and separate property	SWN Production Company, LLC	18.00%	238A/255	
	Roberta M. Rinaldi, a/k/a Robin M. Rinaldi, a married woman dealing in her sole and separate property	SWN Production Company, LLC	18.00%	238A/250	
	Patty A. Balwanz & Robert J. Balwanz, wife and husband	SWN Production Company, LLC	18.00%	PENDING	
	Richard J. Colvin & Jane A. Colvin, his wife	SWN Production Company, LLC	18.00%	PENDING	
	Robert L. Colvin, a widower	SWN Production Company, LLC	18.00%	PENDING	
	Chad K. Schartiger	SWN Production Company, LLC	18.00%	238A/800	
	Jonah Schartiger, a single man	SWN Production Company, LLC	18.00%	PENDING	
	Perkins Oil & Gas, Inc., a West Virginia corporation	SWN Production Company, LLC	18.00%	PENDING	
	David M. Carter, a widower	SWN Production Company, LLC	18.00%	PENDING	
	Kristina D. Marks and Joshua A. Marks, wife and husband	SWN Production Company, LLC	18.00%	PENDING	
	Amanda M. Lopez	SWN Production Company, LLC	18.00%	PENDING	
	Brittany D. Crow, a single woman	SWN Production Company, LLC	18.00%	PENDING	
	Anne Deepak, a married woman dealing in her sole and separate property	SWN Production Company, LLC	18.00%	PENDING	
	Roy Clayton Crow	SWN Production Company, LLC	18.00%	248A/101	
	Terry Lee Sommerville	SWN Production Company, LLC	18.00%	248A/101	
	Gary Robert Sommerville	SWN Production Company, LLC	18.00%	248A/101	
	Sandra Kay Stewart	SWN Production Company, LLC	18.00%	248A/101	
	Rosemary Muldowney	SWN Production Company, LLC	18.00%	248A/101	
	Rex Foster	SWN Production Company, LLC	18.00%	248A/101	
	William G. Hill, Jr.	SWN Production Company, LLC	18.00%	248A/101	
	Mia Nicole Crow Kinder	SWN Production Company, LLC	18.00%	248A/101	
	Robert A. Lemasters	SWN Production Company, LLC	18.00%	248A/101	
	Samuel Warner, Jr.	SWN Production Company, LLC	18.00%	248A/101	
	April Lea Fluharty	SWN Production Company, LLC	18.00%	248A/101	
	Joshua Michael Oates	SWN Production Company, LLC	18.00%	248A/101	
	Connor Garrison Oates	SWN Production Company, LLC	18.00%	248A/101	

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		Kevin Robert Lemasters	SWN Production Company, LLC	18.00%	248A/101	
		Howard Deffenbaugh	SWN Production Company, LLC	18.00%	248A/101	
		David Randall Lemasters	SWN Production Company, LLC	18.00%	248A/101	
		Tiffany Marie Lemasters	SWN Production Company, LLC	18.00%	248A/101	
		Amber Rae Lemasters	SWN Production Company, LLC	18.00%	248A/101	
		Brittany Nicole Lemasters	SWN Production Company, LLC	18.00%	248A/101	
		Alexis Ann Lemasters	SWN Production Company, LLC	18.00%	248A/101	
		Joshua Dale Lemasters	SWN Production Company, LLC	18.00%	248A/101	
		Fonda Lucille Sapp	SWN Production Company, LLC	18.00%	248A/101	
		Howard S. Sapp	SWN Production Company, LLC	18.00%	248A/101	
		Donald G. Riter	SWN Production Company, LLC	18.00%	248A/101	
		Ralph Thomas Sapp, Jr.	SWN Production Company, LLC	18.00%	248A/101	
		Barbara A. Sapp	SWN Production Company, LLC	18.00%	248A/101	
		Brianne Nicole Wood	SWN Production Company, LLC	18.00%	248A/101	
		Christina A. Wood	SWN Production Company, LLC	18.00%	248A/101	
		Heirs of Archie Doyle Lemasters	SWN Production Company, LLC	18.00%	248A/101	
		Heirs of Kenneth William Jones	SWN Production Company, LLC	18.00%	248A/101	
		Stephen M. Carter	SWN Production Company, LLC	18.00%	248A/101	
		Ralph L. Dear	SWN Production Company, LLC	18.00%	248A/101	
		Dorothy William	SWN Production Company, LLC	18.00%	248A/101	
		Brian L. Crow	SWN Production Company, LLC	18.00%	248A/101	
		Kristen Ann Nieman	SWN Production Company, LLC	18.00%	248A/101	
		Christopher D. Riter	SWN Production Company, LLC	18.00%	248A/101	
		Julie Ann Pelton	SWN Production Company, LLC	18.00%	248A/101	
		May K. Pelton	SWN Production Company, LLC	18.00%	248A/101	
		Brian R. Pelton	SWN Production Company, LLC	18.00%	248A/101	
		Terrance Eugene Allen	SWN Production Company, LLC	18.00%	248A/101	
		Harold E. Lemasters and Betty L. Lemasters, acting as Trustees of The Lemasters Keystone Trust, dated April 5, 2012	SWN Production Company, LLC	18.00%	248A/101	✓
11)	1-10-45 ✓	Wilma Jarrell and Jeff Jarrell, wife and husband	SWN Production Company, LLC	18.000%	PENDING	0.0000%
		Wilda Lynch and Peter Lynch, wife and husband	SWN Production Company, LLC	18.00%	PENDING	
		Wayne Wykert, divorced and not remarried	SWN Production Company, LLC	18.00%	PENDING	
		Four Leaf Land Company	SWN Production Company, LLC	18.00%	234A/847	

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 Wetzel County, West Virginia

		Debra Kay Haught f/k/a Debra Kay Hadley, a married woman dealing in her sole and separate property, by her Attorney-in-Fact, David Eugene Haught	SWN Production Company, LLC	18.00%	234A/829	
		Betty Lou Gulley Smith f/k/a Betty Lou Gulley Hadley, a married woman dealing in her sole and separate property	SWN Production Company, LLC	18.00%	235A/610	
		Sherri L. Hubbard f/k/a Sherri L Hadley, a married woman dealing in her sole and separate property	SWN Production Company, LLC	18.00%	234A/835	
		Morris Mountaineer Oil & Gas LLC, a West Virginia limited liability company	SWN Production Company, LLC	18.00%	PENDING	
		The Sidney Austin Smith Trust, LLC by Security National Trust Company, Manager	SWN Production Company, LLC	18.00%	PENDING	
		Rodger A. Sweeney Four Leaf Land Company	Four Leaf Land Company SWN Production Company, LLC	12.50%	239A/776 250A/660	
		Ralph Sweeney Four Leaf Land Company	Four Leaf Land Company SWN Production Company, LLC	12.50%	239A/770 250A/660	
		Donald Lee Sweeney Four Leaf Land Company	Four Leaf Land Company SWN Production Company, LLC	12.50%	239A/794 250A/660	
		Mark Dale Sweeney Four Leaf Land Company	Four Leaf Land Company SWN Production Company, LLC	12.50%	239A/788 250A/660	
		Devon Ruth Horsley Four Leaf Land Company	Four Leaf Land Company SWN Production Company, LLC	12.50%	239A/782 250A/660	
		Ralph T. Sweeney and Shelley A. Sweeney Four Leaf Land Company	Four Leaf Land Company SWN Production Company, LLC	12.50%	239A/758 250A/660	
		LaMoynne Sweeney Four Leaf Land Company	Four Leaf Land Company SWN Production Company, LLC	12.50%	239A/800 250A/660	
		Anna Sweeney Four Leaf Land Company	Four Leaf Land Company SWN Production Company, LLC	12.50%	239A/806 250A/660	
		Gloria Morris Four Leaf Land Company	Four Leaf Land Company SWN Production Company, LLC	12.50%	239A/764 250A/660	✓
12)	1-10-45,1 ✓	Wilma Jarrell and Jeff Jarrell, wife and husband	SWN Production Company, LLC	18.00%	PENDING	0.0000%
		Wilda Lynch and Peter Lynch, wife and husband	SWN Production Company, LLC	18.00%	PENDING	
		Wayne Wykert, divorced and not remarried	SWN Production Company, LLC	18.00%	PENDING	
		Four Leaf Land Company	SWN Production Company, LLC	18.00%	234A/847	

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EXHIBIT "A"

Attached to and made a part of the State of West Virginia Oil and Gas Form, WW-6A1, by SWN Production Company, L.L.C., Operator
 William Ritchea WTZ 6H
 Wetzel County, West Virginia

	Debra Kay Haught f/k/a Debra Kay Hadley, a married woman dealing in her sole and separate property, by her Attorney-in-Fact, David Eugene Haught	SWN Production Company, LLC	18.00%	234A/829	
	Betty Lou Gulley Smith f/k/a Betty Lou Gulley Hadley, a married woman dealing in her sole and separate property	SWN Production Company, LLC	18.00%	235A/610	
	Sherri L. Hubbard f/k/a Sherri L Hadley, a married woman dealing in her sole and separate property	SWN Production Company, LLC	18.00%	234A/835	
	Morris Mountaineer Oil & Gas LLC, a West Virginia limited liability company	SWN Production Company, LLC	18.00%	PENDING	
	The Sidney Austin Smith Trust, LLC by Security National Trust Company, Manager	SWN Production Company, LLC	18.00%	PENDING	
	Rodger A. Sweeney Four Leaf Land Company	Four Leaf Land Company SWN Production Company, LLC	12.50%	239A/776 250A/660	
	Ralph Sweeney Four Leaf Land Company	Four Leaf Land Company SWN Production Company, LLC	12.50%	239A/770 250A/660	
	Donald Lee Sweeney Four Leaf Land Company	Four Leaf Land Company SWN Production Company, LLC	12.50%	239A/794 250A/660	
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	LaMoyné Sweeney Four Leaf Land Company	Four Leaf Land Company SWN Production Company, LLC	12.50%	239A/800 250A/660	
	Anna Sweeney Four Leaf Land Company	Four Leaf Land Company SWN Production Company, LLC	12.50%	239A/806 250A/660	
	Gloria Morris Four Leaf Land Company	Four Leaf Land Company SWN Production Company, LLC	12.50%	239A/764 250A/660	

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

November 30, 2020

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

RE: SWN's proposed New Well: William Ritchea WTZ 6H in Wetzel County, West Virginia, Drilling under Fairview Ridge 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 Fairview Ridge 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,

A handwritten signature in black ink, appearing to read "Jane Swanson".

Jane Swanson
Landman
SWN Production Company, LLC

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A logo consisting of the letters "R2" above "A" with a red arrow pointing from "A" to "V+", where the "+" is a superscript.

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

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

Date of Notice Certification: 12/21

API No. 47- 103 - _____
Operator's Well No. William Ritchea WTZ 6H
Well Pad Name: William Ritchea 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>529,222.656</u>
County:	<u>103- Wetzel</u>		Northing:	<u>4,391,142.056</u>
District:	<u>Proctor</u>	Public Road Access:	<u>Harlan Ridge Road</u>	
Quadrangle:	<u>Wileyville</u>	Generally used farm name:	<u>William Ritchea</u>	
Watershed:	<u>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.

<p>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:</p> <p>*PLEASE CHECK ALL THAT APPLY</p> <p><input type="checkbox"/> 1. NOTICE OF SEISMIC ACTIVITY or <input checked="" type="checkbox"/> NOTICE NOT REQUIRED BECAUSE NO SEISMIC ACTIVITY WAS CONDUCTED</p> <p><input checked="" type="checkbox"/> 2. NOTICE OF ENTRY FOR PLAT SURVEY or <input type="checkbox"/> NO PLAT SURVEY WAS CONDUCTED</p> <p><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</p> <p><input type="checkbox"/> WRITTEN WAIVER BY SURFACE OWNER (PLEASE ATTACH)</p> <p><input checked="" type="checkbox"/> 4. NOTICE OF PLANNED OPERATION</p> <p><input checked="" type="checkbox"/> 5. PUBLIC NOTICE</p> <p><input checked="" type="checkbox"/> 6. NOTICE OF APPLICATION</p> <p style="text-align: center;">RECEIVED Office of Oil and Gas DEC 22 2020 WV Department of Environmental Protection</p>	<p style="text-align: center;">OOG OFFICE USE ONLY</p> <p><input type="checkbox"/> RECEIVED/ NOT REQUIRED</p> <p><input type="checkbox"/> RECEIVED</p> <p><input type="checkbox"/> RECEIVED/ NOT REQUIRED</p> <p><input type="checkbox"/> RECEIVED</p> <p><input type="checkbox"/> RECEIVED</p> <p><input type="checkbox"/> RECEIVED</p>
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Required Attachments:

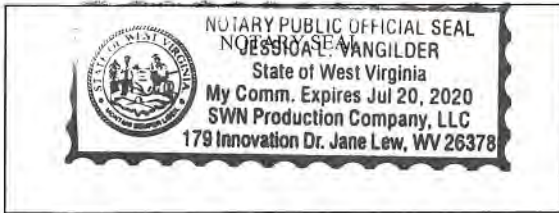
The Operator shall attach to this Notice Certification Form all Notice Forms and Certifications of Notice that have been provided to the required parties and/or any associated written waivers. For the Public Notice, the operator shall attach a copy of the Class II Legal Advertisement with publication 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.

Certification of Notice is hereby given:

THEREFORE, I Brittany Woody, 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:	<u>SWN Production Co., LLC</u>	Address:	<u>Fort Pierpont Dr., Suite 201</u>
By:	<u>Brittany Woody</u>		<u>Morgantown, WV 26508</u>
Its:	<u>Senior Regulatory Analyst</u>	Facsimile:	<u>304-884-1690</u>
Telephone:	<u>304-884-1610</u>	Email:	<u>Brittany_Woody@swn.com</u>

Brittany Woody



Subscribed and sworn before me this 6th day of January, 2020
Jessica L. VanMilder Notary Public
 My Commission Expires 7-20-20

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.

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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: 12/21 Date Permit Application Filed: 12/21
Notice of:

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- 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: William & Shirley Ritchea
Address: 12263 Proctor Creek Road
New Martinsville, WV 26155
Name: _____
Address: _____

COAL OWNER OR LESSEE
Name: C/O Leatherwood Inc. Attn: Casey Saunders
Address: 1000 Consol Energy Drive
Canonsburg, PA 15317

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

DEC 2 2 2020

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 57th Street, SE, Charleston, WV 25304 (304-926-0450) or by visiting 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

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 as being 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, in 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 57th St. SE
Charleston, WV 25304
(304) 926-0450

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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.**

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.

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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Environmental Protection

WW-6A
(8-13)

API NO. 47- 103 -
OPERATOR WELL NO. William Ritchea WTZ 6H
Well Pad Name: William Ritchea WTZ pad

Notice is hereby given by:

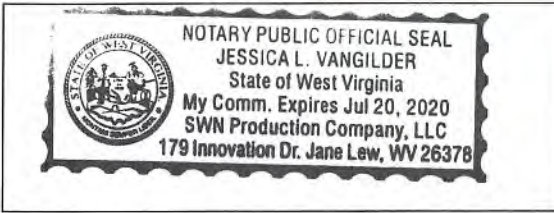
Well Operator: SWN Production Co., LLC
Telephone: 304-884-1610
Email: Brittany_Woody@swn.com

Brittany Woody

Address: 1300 Fort Pierpont Dr., Suite 201
Morgantown, WV 26508
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.



Subscribed and sworn before me this 6th day of Jan., 2020.
Jessica L Vangilder Notary Public
My Commission Expires 7-20-20

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DEC 22 2020
WV Department of
Environmental Protection

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: 1/8/2020 **Date of Planned Entry:** 1/13/2020

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

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

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Pursuant to West Virginia Code § 22-6A-10(a), Prior to filing a permit application, the operator shall provide notice of 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: William & Shirley Ritchea ✓
Address: HC 80 Box 239
New Martinsville, WV 26155
Name: _____
Address: _____
Name: _____
Address: _____

COAL OWNER OR LESSEE
Name: C/O Leatherwood Attn: Casey Saunders ✓
Address: 1000 Consol Energy Drive
Canonsburg, PA 15317

MINERAL OWNER(s)
Name: William & Shirley Ritchea ✓
Address: HC 80 Box 239
New Martinsville, WV 26155
*please attach additional forms if necessary

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>39.670670 -80.663580</u>
County: <u>Wetzel</u>	Public Road Access: <u>Harlan Ridge</u>
District: <u>Proctor</u>	Watershed: <u>Little Fishing Creek</u>
Quadrangle: <u>Wileyville</u>	Generally used farm name: <u>William Ritchea</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 57th 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.

Notice is hereby given by:

Well Operator: <u>SWN PRODUCTION COMPANY, LLC</u>	Address: <u>1300 Fort Pierpont Dr., Suite 201</u>
Telephone: <u>304-884-1610</u>	<u>Morgantown, WV 26508</u>
Email: <u>Brittany_Woody@swn.com</u>	Facsimile: <u>304-884-1690</u>

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.

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS
NOTICE OF INTENT TO DRILL

Pursuant to W. Va. Code § 22-6A-16(b), the Notice of Intent to Drill is only required if the notice requirements of W. Va. Code § 22-6A-10(a) have NOT been met or if the Notice of Intent to Drill requirement has NOT been waived in writing by the surface owner.

Notice Time Requirement: Notice shall be provided at least **TEN (10)** days prior to filing a permit application.
Date of Notice: 08/03/2020 **Date Permit Application Filed:** 12/2/20

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

HAND DELIVERY **CERTIFIED MAIL RETURN RECEIPT REQUESTED**

Pursuant to W. Va. Code § 22-6A-16(b), at least ten days prior to filing a permit application, an operator shall, by certified mail return receipt requested or hand delivery, give the surface owner notice of its intent to enter upon the surface owner's land for the purpose of drilling a horizontal well: *Provided*, That notice given pursuant to subsection (a), section ten of this article satisfies the requirements of this subsection as of the date the notice was provided to the surface owner: *Provided, however*, That the notice requirements of this subsection may be waived in writing by the surface owner. The notice, if required, shall include the name, address, telephone number, and if available, facsimile number and electronic mail address of the operator and the operator's authorized representative.

Notice is hereby provided to the SURFACE OWNER(s):

Name: William D. & Shirley E. Ritchea
Address: 12263 Proctor Creek Road
New Martinsville, WV 26155

Name: _____
Address: _____

Notice is hereby given:

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

State:	<u>West Virginia</u>	UTM NAD 83	Easting:	<u>529,222.656</u>
County:	<u>Wetzel</u>		Northing:	<u>4,391,142.056</u>
District:	<u>Proctor</u>	Public Road Access:	<u>Harlan Ridge</u>	
Quadrangle:	<u>Wileyville</u>	Generally used farm name:	<u>William Ritchea WTZ</u>	
Watershed:	<u>Fish Creek</u>			

This Notice Shall Include:

Pursuant to West Virginia Code § 22-6A-16(b), this notice shall include the name, address, telephone number, and if available, facsimile number and electronic mail address of the operator and the operator's authorized representative. Additional information related to horizontal drilling may be obtained from the Secretary, at the WV Department of Environmental Protection headquarters, located at 601 57th Street, SE, Charleston, WV 25304 (304-926-0450) or by visiting www.dep.wv.gov/oil-and-gas/pages/default.aspx.

Notice is hereby given by:

Well Operator: SWN Production Company, LLC
Address: 1300 Fort Pierpont Dr. Suite 201
Morgantown, WV 26508
Telephone: 832-540-1136
Email: Steve_Teel@swn.com
Facsimile: _____

Authorized Representative: Steve Teel
Address: 1300 Fort Pierpont Dr. Suite 201
Morgantown, WV 26508
Telephone: 832-540-1136
Email: Steve_Teel@swn.com
Facsimile: _____

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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

Byrd E. White, III
 Secretary of Transportation/
 Commissioner of Highways

January 28, 2020

Jimmy Wriston, P. E.
 Deputy Secretary/
 Deputy Commissioner

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

Subject: DOH Permit for the William Ritchea Pad, Wetzel County
 William Ritchea WTZ 6H Well Site

Dear Mr. Martin,

This well site will be accessed from a DOH permit #06-2011-0618 which has been issued to Southwestern Energy for access to the State Road for a well site located off Wetzel County Route 1/19 SLS.

This operator is in compliance with §22-6A-20 of the WV Code. Operator has signed a STATEWIDE 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 October 1, 2018.

Very Truly Yours,

Gary K. Clayton, P.E.
 Regional Maintenance Engineer
 Central Office O&G Coordinator

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

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WV Department of
 Environmental Protection

Attachment VI Frac Additives

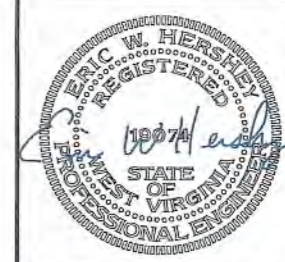
Product Name	Product Use	Chemical Name	CAS Number
AI-303 (U.S. Well Services)	Mixture	Ethylene glycol	107-21-1
		Cinnamaldehyde	104-55-2
		Butyl cellosolve	111-76-2
		Formic acid	64-18-6
		Polyether	Proprietary
		Acetophenone, thiourea, formaldehyde polymer	68527-49-1
AP ONE (U.S. Well Services)	Breaker	Ammonium persulfate	7727-54-0
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
CarboNRT	Tracer	Ceramic Proppant	66402-68-4
EC6486A (Nalco Champion)	Scale Inhibitor	Amine Triphosphate	Proprietary
		Ethylene Glycol	107-21-1
EC6734A (Champion Technologies)	Biocide	Hydrogen Peroxide	7722-84-1
		Acetic Acid	64-19-7
		Peroxyacetic Acid	79-21-0
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
		Formaldehyde	50-00-0
ECONO-100 (SWN Well Services)	Iron Control	Acetic Acid	64-19-7
		Citric Acid	77-92-9
		Water	7732-18-5
FDP-S1176-15 (Halliburton)	Friction Reducer	Polyacrylate	Proprietary
		Hydrotreated light petroleum distillate	64742-47-8
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
		Water	7732-18-5
FLOJET DRP 1130X (SWN Well Services)	Friction Reducer	Proprietary	Proprietary
FR-76 (Halliburton)	Friction Reducer	Hydrotreated light petroleum distillate	64742-47-8
		Inorganic Salt	Proprietary
GYPTRON T-390 (Champion Technologies)	Scale Inhibitor	Methanol	67-56-1
		Nonylphenol Ethoxylate	Proprietary
HAI-150E (Halliburton)	Corrosion Inhibitor	No hazardous substance	N/A
HCL (SWN Well Services)	Hydrochloric Acid	Hydrochloric Acid	7647-01-0
		Water	7732-18-5
LP-65 MC (Halliburton)	Scale Inhibitor	Organic phosphonate	Proprietary
		Ammonium Chloride	12125-02-9
OPTI-FLEX (U.S. Well Services)	Viscosifying Agent	Distillates, petroleum, hydrotreated light	64742-47-8
Plexslick 930	Friction Reducer	Copolymer of 2-propenamide	Proprietary
		Hydrotreated Distillate	64742-47-8
		Sodium Chloride	7647-14-5
		Alcohols, C12-16, Exoxylated	68551-12-2
		Oleic Acid Diethanolamide	93-83-4
		Ammonium Chloride	12125-02-9
Plexslick 953	Friction Reducer	Petroleum Distillate	64742-47-8
		Sodium Chloride	7647-14-5
		Ammonium Chloride	12125-02-9
		N,N-bis (2-hydroxyethyl) oleamide	93-83-4
Plexslick 957	Friction Reducer	Petroleum Distillate	64742-47-8
		Ammonium Chloride	12125-02-9
		Oleic Acid Diethanolamide	93-83-4
		Alcohols, C12-16, Exoxylated	68551-12-2
		Water	7732-15-5
WFRA-2000 (U.S. Well Services)	Anionic Friction Reducer	Hydrotreated light distillate (petroleum)	64742-47-8
		Propenoic acid, polymer with propenamide	9003-06-9
Plexaid 655 NM	Scale Inhibitor	Diethylenetriamine penta (methylene phosphonic acid)	15827-30-8
Plexslick 922	no data available	Copolymer of 2-propenamide	69418-26-4
		Distillates (petroleum), hydrotreated light	64742-47-8
		Ammonium chloride ((NH4)Cl)	12125-02-9
		Oleic Acid Diethanolamide	93-83-4
Tolcide PSS0A	Biocidal product	Tetrakis (hydroxymethyl) phosphonium sulphate	55566-30-8
		Acrylic acid terpolymer containing carboxylate phosphonate and sulfonate groups	397256-50-7
LD-2950	Friction Reducer	Hydrotreated light petroleum distillate	64742-47-8
		Ethoxylated alcohol	Proprietary
		Poly (oxy-1,2-ethanediyl) alpha.-tridecyl.-omega.-hydroxy-, branched	69011-36-5
Legend LD-7750W	Scale Control	Methanol	67-56-1
		Phosphonic Acid Salt	Proprietary
MC MX 8-4743	Specialty Product	Sodium Nitrate	7631-99-4

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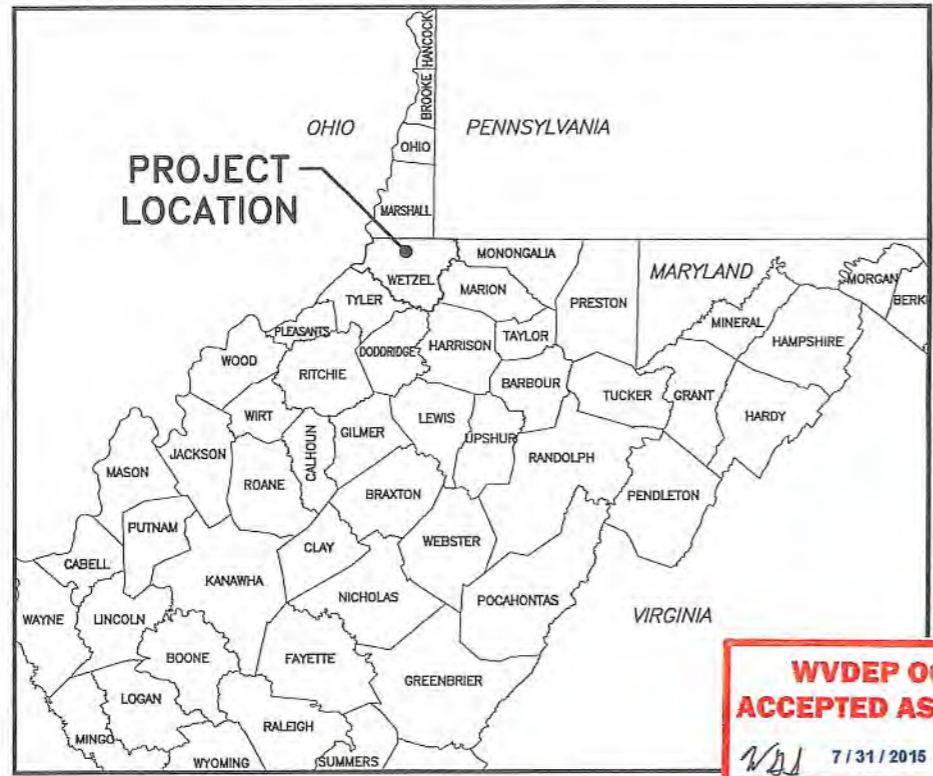
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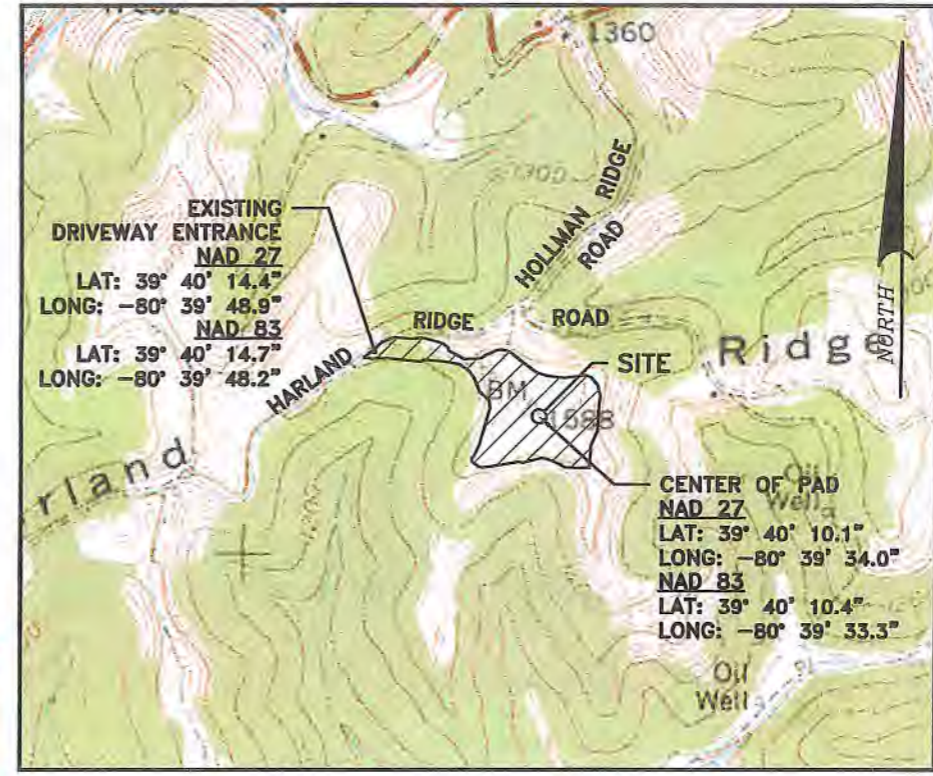
AS-BUILT SITE PLAN FOR WILLIAM & SHIRLEY RITCHEA WTZ PAD A PROCTOR DISTRICT, WETZEL COUNTY, WEST VIRGINIA



DRAWN BY: JAR
DATE: 07/29/2015
SCALE: AS SHOWN
DWG. NO.: 087589009



COUNTY MAP
N.T.S.



LOCATION MAP
SCALE - 1"=1000'

**WVDEP OOG
ACCEPTED AS-BUILT**
WJL 7/31/2015

WEST VIRGINIA 811
CALL BEFORE YOU DIG!
Dial 811 or 800.245.4848
Miss Utility of West Virginia

SWN
Southwestern Energy®

OPERATOR
SWN PRODUCTION CO., LLC
ATTN: DEE SOUTHWALL
P.O. BOX 1300
JANE LEW, WV 26378
(832) 798-1614

SITE DATA
TOTAL DISTURBED AREA: 13.6 ACRES
ROAD DISTURBED AREA: 3.9 ACRES
PAD DISTURBED ACRES: 9.7 ACRES
ACCESS ROAD LENGTH: 1,079'
ACCESS ROAD AVERAGE WIDTH: 24'
WELL PAD ELEVATION: 1,563.0'

WELL API NUMBERS

1H	API 103-03128
	ISSUED 06/15/15
3H	API 103-03129
	ISSUED 06/15/15
5H	NOT PERMITTED
6H	NOT PERMITTED
201H	API 103-03130
	ISSUED 06/15/15
205H	NOT PERMITTED
410H	API 103-03134
	ISSUED 07/23/15

DmH
1-28-20

LIST OF DRAWINGS

1 OF 14	COVER SHEET
2-3 OF 14	EVACUATION ROUTE/ PREVAILING WINDS
4 OF 14	AS-BUILT SITE PLAN OVERVIEW
5-9 OF 14	AS-BUILT SITE PLAN
10-12 OF 14	RECLAMATION PLAN
13 OF 14	ACCESS DRIVE PROFILE
14 OF 14	DETAILS

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RETTEW
RETTEW Associates, Inc.
5143 Sycamore Road, Suite 100, North Canton, OH 44720
Phone (330) 818-9770 • Fax (330) 818-9780
Engineers • Planners • Landscape Architects
Governmental Consultants

COVER SHEET
FOR
**WILLIAM & SHIRLEY RITCHEA
WTZ PAD A**
PROCTOR DISTRICT
WETZEL COUNTY, WV