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 west virginia department of environmental protection
 

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

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

Tuesday, January 8, 2019  
 WELL WORK PERMIT  
 Horizontal 6A / New Drill

SWN PRODUCTION COMPANY, LLC  
 POST OFFICE BOX 12359

SPRING, TX 773914954

Re: Permit approval for SAMUEL JONES BRK 206H  
 47-009-00270-00-00

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: SAMUEL JONES BRK 206H  
 Farm Name: SAMUEL E. & JUDITH F. JONE  
 U.S. WELL NUMBER: 47-009-00270-00-00  
 Horizontal 6A New Drill  
 Date Issued: 1/8/2019

# 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

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

## PERMIT CONDITIONS

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

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

- 1) Well Operator: SWN Production Co., LLC 494512924 009- Brooke 3-Buffalo 247- Bethany  
Operator ID County District Quadrangle
- 2) Operator's Well Number: Samuel Jones BRK 206H Well Pad Name: Samuel Jones Pad
- 3) Farm Name/Surface Owner: Samuel E. & Judith F. Jones Public Road Access: Hukill Hill/Marlboro Spur Road
- 4) Elevation, current ground: 1205' Elevation, proposed post-construction: 1210'
- 5) Well Type (a) Gas  Oil  Underground Storage   
Other   
(b) If Gas Shallow  Deep   
Horizontal
- 6) Existing Pad: Yes or No No
- 7) Proposed Target Formation(s), Depth(s), Anticipated Thickness and Expected Pressure(s): *C. J. 10-16-18*  
Target Formation- Marcellus, Up-Dip well to the South, Target Top TVD- 6362', Target Base TVD- 6402', Anticipated Thickness- 40', Associated Pressure- 4161
- 8) Proposed Total Vertical Depth: 6382'
- 9) Formation at Total Vertical Depth: Marcellus
- 10) Proposed Total Measured Depth: 22,347'
- 11) Proposed Horizontal Leg Length: 17224.76
- 12) Approximate Fresh Water Strata Depths: 265'
- 13) Method to Determine Fresh Water Depths: Nearby spring
- 14) Approximate Saltwater Depths: 613'- Salinity Profile
- 15) Approximate Coal Seam Depths: 411'
- 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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CASING AND TUBING PROGRAM

TYPE	Size (in)	New or Used	Grade	Weight per ft. (lb/ft)	FOOTAGE: For Drilling (ft)	INTERVALS: Left in Well (ft)	CEMENT: Fill-up (Cu. Ft.)/CTS
Conductor	20"	New	H-40	94#	100'	100'	CTS
Fresh Water	13 3/8"	New	H-40	48#	365'	365'	363 sx/CTS
Coal	See	Interm.	Casing				
Intermediate	9 5/8"	New	J-55	36#	1807'	1807'	706 sx/CTS
Production	5 1/2"	New	HCP-110	20#	22,347'	22,347'	1.20/50% Excess
Tubing							
Liners							

*C. Bell 10/16/18*

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

PACKERS

Kind:				
Sizes:				
Depths Set:				

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

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

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

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

21) Total Area to be disturbed, including roads, stockpile area, pits, etc., (acres): 4.94

22) Area to be disturbed for well pad only, less access road (acres): 3.62

23) Describe centralizer placement for each casing string:

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

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

See Attachment \*\*\*

25) Proposed borehole conditioning procedures:

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

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\*Note: Attach additional sheets as needed.

## Schlumberger Cement Additives

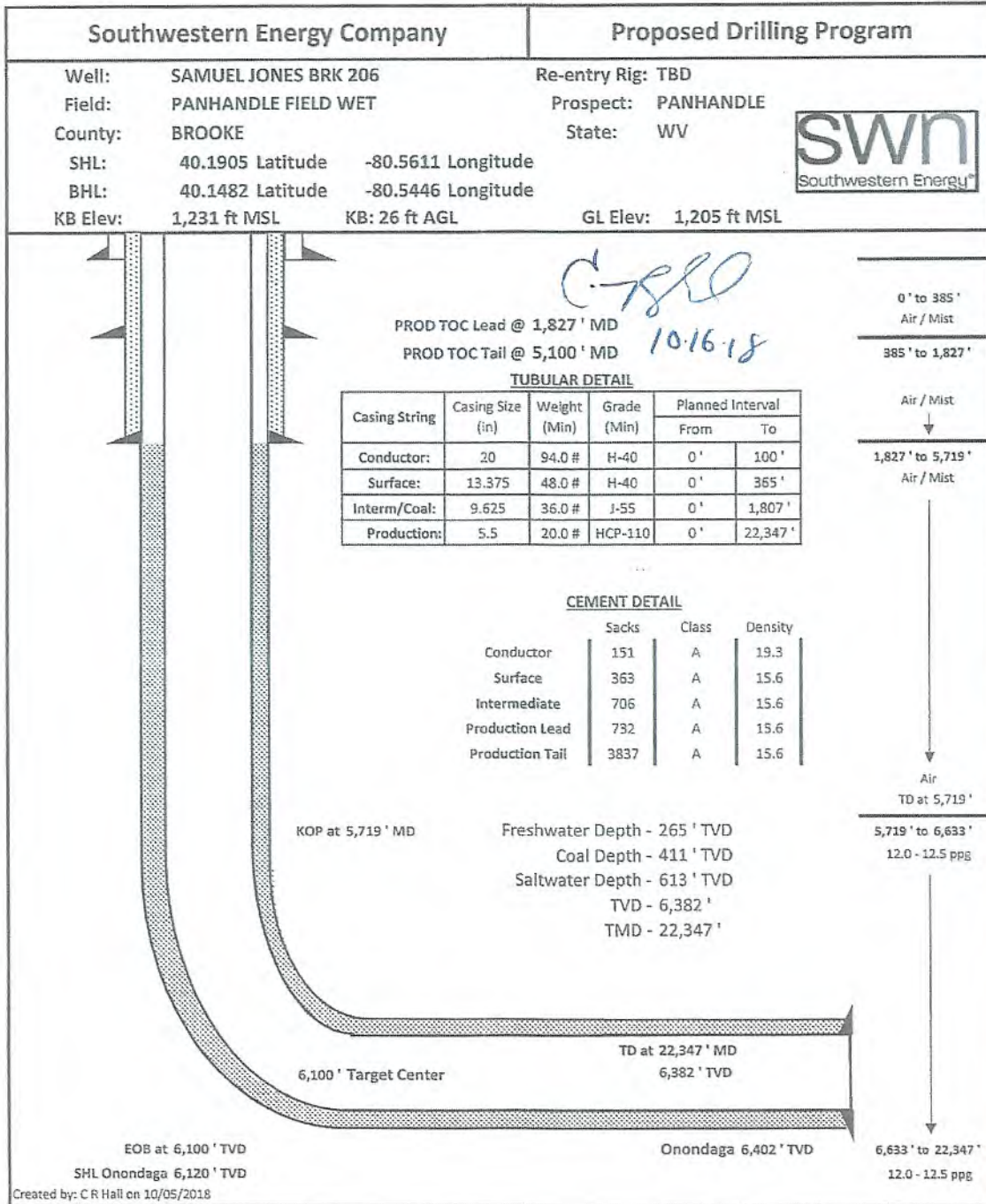
	Product Name	Product Use	Chemical Name	CAS Number
Surface	S001	accelerator	calcium chloride up to 3%	10043-52-4
Intermediate	S001	accelerator	calcium chloride	10043-52-4
Kick Off Plug	D080	dispersant	sodium polynaphthalene sulfonate	9008-63-3
	D801	retarder	aromatic polymer derivative	proprietary
	D047	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	
Production-Tail	D046	antifoam	polypropylene glycol	25322-69-4
			fullers earth (attapulgate)	8031-18-3
	D167	fluid loss	aliphatic amide polymer	proprietary
			sodium polynaphthalene sulfonate	9008-63-3
	D065	dispersant	sodium sulfate	7757-82-6
			chrystalline silica	14808-60-7
D201	retarder	metal oxide	proprietary	
D153	anti-settling	chrystalline silica	14808-60-7	

Rev. 5/18/2018

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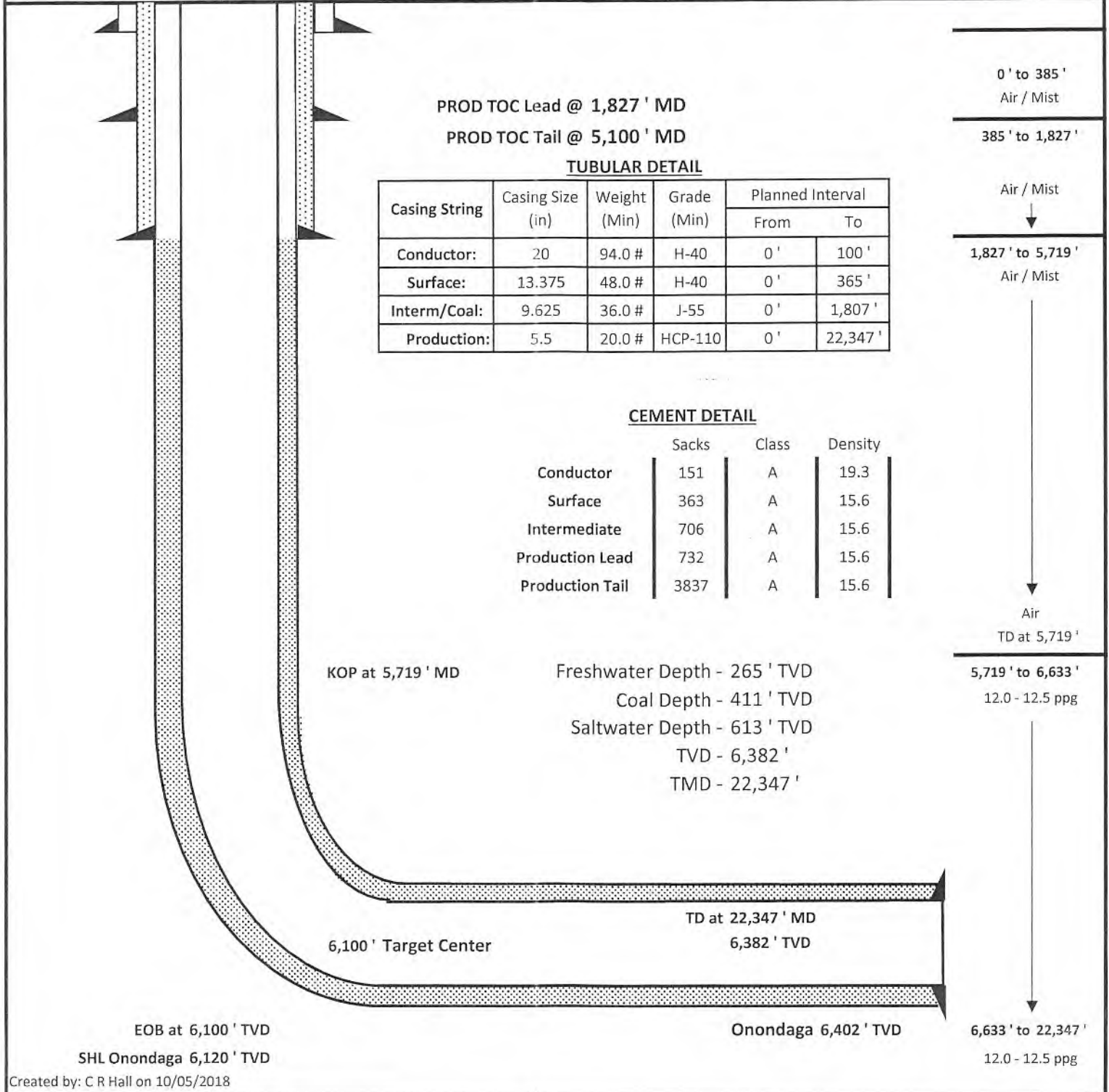
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01/11/2019

**Southwestern Energy Company** **Proposed Drilling Program**

Well: SAMUEL JONES BRK 206 Re-entry Rig: TBD  
 Field: PANHANDLE FIELD WET Prospect: PANHANDLE  
 County: BROOKE State: WV  
 SHL: 40.1905 Latitude -80.5611 Longitude  
 BHL: 40.1482 Latitude -80.5446 Longitude  
 KB Elev: 1,231 ft MSL KB: 26 ft AGL GL Elev: 1,205 ft MSL



Created by: C R Hall on 10/05/2018

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June 27, 2018

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

**RE:** Proposed New Well Samuel Jones BRK 206H

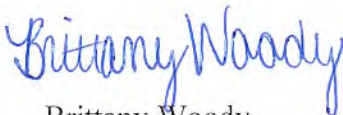
Dear Ms. Adkins

SWN has reviewed the area of the above mentioned well and discovered no shallow wells within 500' of the lateral. This well is situated on the Jones's property, in Buffalo District, Brooke County, West Virginia.

If you have any questions or desire additional information, please me at 304-884-1614

Thank you.

Sincerely,



Brittany Woody  
Regulatory Analyst  
Southwestern Energy Production Company, LLC

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WW-9  
(2/15)

API Number 47 - 009 - 00270  
Operator's Well No. Samuel Jones BRK 206H

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) Upper Ohio South Quadrangle Bethany

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

Will a pit be used? Yes  No

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

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

Proposed Disposal Method For Treated Pit Wastes:

- Land Application
- Underground Injection ( UIC Permit Number 34-155-22403, 34-059-24067, 34-119-28776, 34-167-23862, 34-155-23705, 34-121-23995, 34-155-21893 )
- Reuse (at API Number \_\_\_\_\_ at next anticipated well, API# will be included with the WR-34/DDMR &/or permit addendum. )
- Off Site Disposal (Supply form WW-9 for disposal location)
- Other (Explain flow back fluids will be put in steel tanks and reused or taken to a permitted disposal facility )

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

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

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

Additives to be used in drilling medium? Attachment 3A

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

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

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

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

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

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

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

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

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Subscribed and sworn before me this 22 day of Oct 2018, 20    

*Elizabeth Blankenship*  
My commission expires 6/23/2024

Notary Public  
Official Seal  
Notary Public, State Of West Virginia  
Elizabeth Blankenship  
941 Simpson Run Road  
Weston WV 26452  
My commission expires June 23, 2024

Form WW-9

Operator's Well No. Samuel Jones BRK 206H

SWN Production Co., LLC

Proposed Revegetation Treatment: Acres Disturbed 4.94 Prevegetation pH \_\_\_\_\_

Lime as determined by pH test min. 2 Tons/acre or to correct to pH 3.62

Fertilizer type 10-20-20

Fertilizer amount 600 lbs/acre

Mulch Hay/Straw 2.5 Tons/acre

Seed Mixtures

**Temporary**

**Permanent**

Seed Type lbs/acre

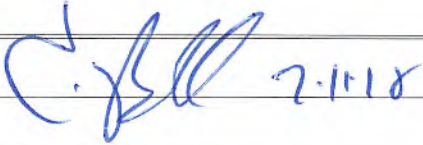
Seed Type lbs/acre

Attachment 3B

Attach:

Drawing(s) of road, location, pit and proposed area for land application (unless engineered plans including this info have been provided)

Photocopied section of involved 7.5' topographic sheet.

Plan Approved by:  7-11-18

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

Title: Oil and Gas Inspector

Date: 7-11-18

Field Reviewed? (  ) Yes (  ) No

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## Attachment 3A

### Drilling Mediums

#### Surface/Coal(if present)/Freshwater Intervals:

#### Intermediate/Coal (if present):

Air

Brine (In Gas Storage areas)

Organophilic Bentonite

#### 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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4700300270



# WVD Seeding Specification

$\frac{R^2}{A} \rightarrow V^+$

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

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	
Organic Fertilizer @ 200lbs per Acre	
Apply @ 200lbs per acre Oct. 15th- April 15th	
Pelletized Lime @ 2 Tons per Acre	

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.

WETLANDS (delineated as jurisdictional wetlands)	
Seed Mixture: Wetland Mix	SWN Supplied
VA Wild Ryegrass	20%
Annual Ryegrass	20%
Fowl Bluegrass	20%
Cosmos 'Sensation'	10%
Redtop	5%
Golden Tickseed	5%
Maryland Senna	5%
Showy Tickseed	5%
Fox Sedge	2.5%
Soft Rush	2.5%
Woolgrass	2.5%
Swamp Verbena	2.5%
Apply @ 25lbs per acre April 16th- Oct. 14th	
Apply @ 50lbs per acre Oct. 15th- April 15th	
NO FERTILIZER OR LIME INSIDE WETLAND LIMITS	

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# Attachment 3C

## 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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MARCELLUS WELL DRILLING PROCEDURES  
AND  
WELL SITE SAFETY PLAN



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

API NO. 47-XXX-XXXXX  
WELL NAME: Samuel Jones BRK 206H  
Bethany QUAD  
Buffalo DISTRICT  
Brooke COUNTY, WEST VIRGINIA

Submitted by:

Brittany Woody *Brittany Woody* Date: 2/28/2018

Title: Regulatory Analyst SWN Production Co., LLC

Approved by:

*[Signature]* Date: 10-16-18

Title: Oil and Gas Inspector

Approved by:

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

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

SWN PRODUCTION COMPANY, LLC – CONFIDENTIAL

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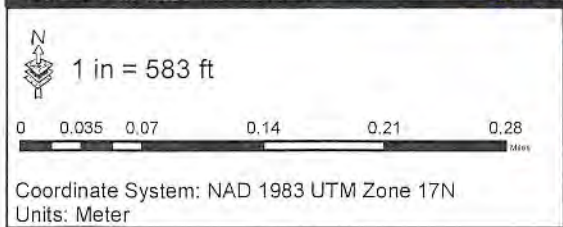
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01/11/2019



- Spring
  - Water Well
  - Pond
  - 1700' Buffer
- Coordinates: 40.190424, -80.560754

Water Purveyor Map  
Well Pad: Samuel Jones  
County: BRK

**SWN** *R<sup>+</sup> V<sup>+</sup>*  
Southwestern Energy<sup>®</sup>

Date: 5/22/2018 Author: willisb

Latitude: 40°12'30" SURFACE HOLE 5433'

Latitude: 40°10'00" BOTTOM HOLE 821'

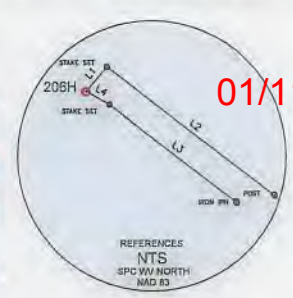
**ELK LAKE SERVICES, LLC**

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

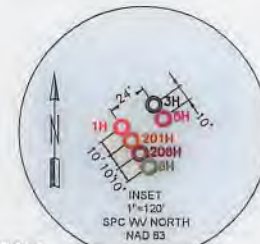
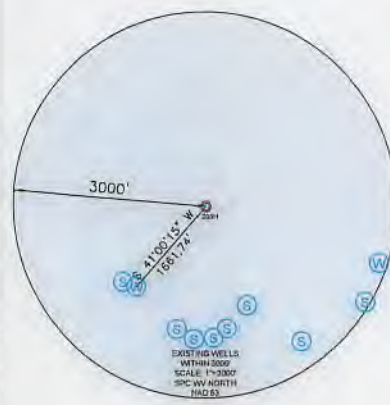
LINE BEARING	DISTANCE
L1 N 40°54'04" E	382.15'
L2 S 52°42'21" E	2535.38'
L3 S 52°36'46" E	1927.86'
L4 S 60°15'49" E	319.34'

<b>SURFACE HOLE LOCATION (SHL):</b> UTM (NAD83, ZONE 17, METERS): NORTHING: 4,448,990.39 EASTING: 537,359.15
<b>LANDING POINT (LPL):</b> UTM (NAD83, ZONE 17, METERS): NORTHING: 4,448,717.86 EASTING: 536,983.59
<b>TURNING POINT LOCATION 1 (TPL 1):</b> UTM (NAD83, ZONE 17, METERS): NORTHING: 4,446,916.93 EASTING: 537,696.75
<b>TURNING POINT LOCATION 2 (TPL 2):</b> UTM (NAD83, ZONE 17, METERS): NORTHING: 4,445,730.55 EASTING: 538,009.03
<b>BOTTOM HOLE LOCATION (BHL):</b> UTM (NAD83, ZONE 17, METERS): NORTHING: 4,444,309.97 EASTING: 538,788.51

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



01/11/2019

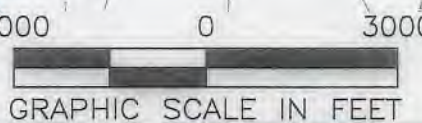
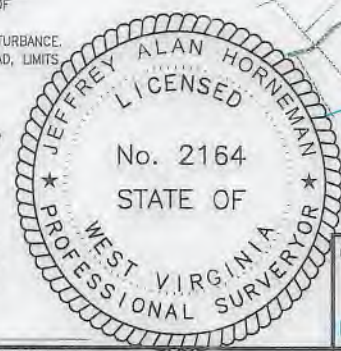


- WELL RESTRICTIONS**
1. NO OCCUPIED DWELLINGS > 2500 SQ FT. WITHIN 825 FEET OF CENTER OF PAD.
  2. NO AGRICULTURE BUILDINGS > 2500 SQ FT. WITHIN 825 FEET OF CENTER OF PAD.
  3. WATER WELLS OR DEVELOPED SPRINGS ARE WITHIN 1662 FEET OF PROPOSED WELL.
  4. PERENNIAL STREAMS, LAKES, PONDS, OR RESERVOIRS ARE WITHIN 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. 2164



COMPANY: **SWN** Production Company, LLC

	(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS	MINIMUM DEGREE OF ACCURACY: 1/200	SAMUEL JONES BRK
	WVDEP OFFICE OF OIL & GAS 601 57TH STREET CHARLESTON, WV 25034	PROVEN SOURCE OF ELEVATION: SURVEY GRADE GPS (NAVD 88, US FT)	OPERATOR'S WELL #: 206H API WELL #: 47 9 00270 STATE COUNTY PERMIT

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

WATERSHED: UPPER OHIO SOUTH ELEVATION: 1205.4'-PLANNED

DISTRICT: BUFFALO COUNTY: BROOKE COUNTY QUADRANGLE: BETHANY

SURFACE OWNER: JONES, SAMUEL E. AND JUDITH F. ACREAGE: ±164.70

OIL & GAS ROYALTY OWNER: RESOURCE MINERALS HEADWATER I, LP ACREAGE: ±164.70

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: 6,382' TVD 22,347' TMD

WELL OPERATOR: SWN PRODUCTION COMPANY, LLC DESIGNATED AGENT: BRITTANY WOODY

ADDRESS: P.O. BOX 1300 ADDRESS: P.O. BOX 1300

CITY: JANE LEW STATE: WV ZIP CODE: 26378 CITY: JANE LEW STATE: WV ZIP CODE: 26378

<b>LEGEND:</b>	SURVEYED BOUNDARY DRILLING UNIT LEASE BOUNDARY PROPOSED PATH EXISTING WATER WELL EXISTING SPRING	<b>REVISIONS:</b>	DATE: 10-10-2018 FILE NO: 17-010 DRAWN BY: JMB SCALE: 1" = 3000' DRAWING NO: 1 WELL LOCATION PLAT 1
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**ELK LAKE SERVICES, LLC**

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

01/11/2019

WELL BORE TABLE FOR SURFACE / ROYALTY OWNERS		
TRACT	SURFACE OWNER (S) / ROYALTY OWNER (R)	TAX PARCEL
1	JONES, SAMUEL E & JUDITH F (S) / RESOURCE MINERALS HEADWATER I, LP (R)	3-B43-60
TRACT	SURFACE OWNER	TAX PARCEL
2	NORDEN, ANNA MAE	3-B48-22
3	PYLE, LAWRENCE RAY & JUDITH A	3-B48-18
4	STONE, MARC P	3-B48-17
5	STONE, MARION P	3-B48-19
6	SONDA, SCOTT & SONDA, MARK	3-L2-1
7	WINDSOR COAL COMPANY	3-L2-9
8	SONDA SCOTT SONDA MARK	3-L2-2
9	BOONE, CHARLES EDWARD & SHARON	3-L2-8.4
10	COX, CHAD & JULIE C	3-L2-12
11	HAYS, TIMOTHY R & THELMA C	3-L5-29
12	ENNIS, JOSEPH E & MARJORIE G	3-L5-8
13	TOMINACK, HELEN & JOHN I JR	3-L5-10

ADJOINING OWNERS TABLE		
TRACT	SURFACE OWNER	TAX PARCEL
A	VALENTINE, GENE C TRUST	3-B43-33
B	FONNER, MARY LOU	3-B43-58
C	PUSKARICH, TRACY T	3-B43-59
D	CHAMBERS, ROBERT M & CHARLOTTE A	3-B48-24
E	AYERS, ALBERT GLENN & REBECCA ANN	3-B43-61
F	CHAMBERS, ROBERT M & CHARLOTTE A	3-B48-23
G	CHAMBERS, HARRY L & BEVERLY R	3-B48-24.1
H	WINDSOR POWER HOUSE COAL CO	3-B48-21
I	SONDA, SCOTT & MARK	3-B48-20
J	STONE, MARION PYLE	3-B48-41
K	GRIMES, DONALD;ANTHONY HOUSTON (SURV)	3-B48-40
L	OHARA, MICHAEL & DEIRDRA	3-L2-10.2
M	BREITINGER, MICHAEL	3-L2-11
N	DEARING, JEREMY R & TANYA N	3-L2-12.3
O	LEMASTERS, G L JR	3-L2-12.1
P	LEMASTERS, G L JR	3-L2-12.4
Q	FISH, HARRY ALAN	3-L2-13
R	KESTNER, GARY & TERRY	3-L5-9
S	MORMANS, GREGORY N & SHARON LEE	3-L6-13
T	RODGERS, WILLIAM I	3-L6-15
U	EISENHAUER, JEFFREY J & JOLENE M	3-L6-18
V	LOEW, DELMER K & V G	3-L6-19
W	TUNNELL RIDGE LLC	3-L6-22
X	MCELVANY, LYNN	3-L5-26
Y	SMITH, GEORGE F	3-L5-27
Z	DOLENCE, DONALD F & J L	3-L5-11
AA	GROVE, GEORGE W JR & LAURIE	3-L5-7.1
AB	GROVE, GEORGE W JR & L A	3-L5-7.4
AC	GROUNDS, CHARLES W & CHRISTY D	3-L5-4
AD	BOONE, CHARLES EDWARD & SHARON	3-L2-8
AE	WINDSOR COAL COMPANY	3-L2-8.3
AF	MEDLEN, ALISHA D & SCOTT B	3-L2-7.2
AG	MILLER, JOAN C (LIFE ESTATE)	3-L2-7.1
AH	KLOSS, BAIRD C	3-L2-4
AI	BALL, LARRY G	3-L1-38.5
AJ	BALL, LARRY G	3-L1-38
AK	MCGEE, KEVIN K & CYNTHIA R	3-L2-15.1
AL	HUPP JOHN W; JOSEPH T; DOUBLE LINDA H	3-B48-16
AM	COX, WILLIAM BRITT	3-B48-8
AN	DUKE, DAVID F & SHARON A	3-B48-10
AO	BONAR, CHARLES W & CHARLOTTE	3-B48-15
AP	CORWIN, BRIAN DAVID	3-B43-22
AQ	BETHANY COLLEGE	3-B38-31
AR	SEIDEWITZ, PAUL ROBERT & WENDY KAY	3-B48-18
AS	GILL, SHARON L	3-L2-8.2
AT	GILL, SHARON L	3-L2-8.5
AU	HAYS, JASON T & SHEENA R	3-L2-12.2

REVISIONS:	COMPANY:	 	
	OPERATOR'S	SAMUEL JONES BRK	
	WELL #:	206H	
	DISTRICT:	COUNTY:	STATE:
	BUFFALO	BROOKE COUNTY	WV
			DATE: 10-10-2018
			FILE NO: 17-010
			DRAWN BY: JMB
			SCALE: N/A
			DRAWING NO: 1
			WELL LOCATION PLAT 1

WW-6A1  
(5/13)

Operator's Well No. Samuel Jones BRK 206H

**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 Attached Exhibit "A"				

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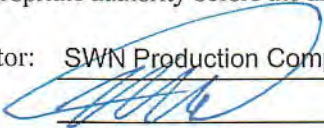
WV Department of  
Environmental Protection

**Acknowledgement of Possible Permitting/Approval  
In Addition to the Office of Oil and Gas**

The permit applicant for the proposed well work addressed in this application hereby acknowledges the possibility of the need for permits and/or approvals from local, state, or federal entities in addition to the DEP, Office of Oil and Gas, including but not limited to the following:

- WV Division of Water and Waste Management
- WV Division of Natural Resources WV Division of Highways
- U.S. Army Corps of Engineers
- U.S. Fish and Wildlife Service
- County Floodplain Coordinator

The applicant further acknowledges that any Office of Oil and Gas permit in no way overrides, replaces, or nullifies the need for other permits/approvals that may be necessary and further affirms that all needed permits/approvals should be acquired from the appropriate authority before the affected activity is initiated.

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

**EXHIBIT "A"**

Attached to and made a part of the State of West Virginia Oil and Gas Permit Form, WW-6A1, by SWN Production Company, LLC., Operator  
 Samuel Jones BRK 206H  
 Brooke County, West Virginia

#	TMP	LESSOR	LESSEE	ROYALTY	BK/PG
1)	03-0B43-0060-0000-0000	Resource Minerals Headwater I, LP	SWN Production Company, LLC	18.00%	34/257
2)	03-0B48-0022-0000-0000	Anna Mae Norden, widow	Great Lakes Energy Partners, L.L.C. Range Resources - Appalachia, LLC Chesapeake Appalachia, L.L.C. SWN Production Company, LLC	12.50%	9/742 20/733 10/552 30/480
3)	03-0B48-0018-0000-0000	Lawrence R. Pyle and Judith A. Pyle, husband and wife	Great Lakes Energy Partners, L.L.C. Range Resources - Appalachia, LLC Chesapeake Appalachia, L.L.C. SWN Production Company, LLC	12.50%	9/742 20/733 10/552 30/480
4)	03-0B48-0017-0000-0000	Marc P. Stone, single	Phillips Production Company Great Lakes Energy Partners, LLC Range Resources - Appalachia, LLC Chesapeake Appalachia, L.L.C. SWN Production Company, LLC	12.50%	9/182 9/395 20/733 10/552 30/480
5)	03-0B48-0019-0000-0000	Marion Pyle Stone	Phillips Production Company Great Lakes Energy Partners, LLC Range Resources - Appalachia, LLC Chesapeake Appalachia, L.L.C. SWN Production Company, LLC	12.50%	9/104 9/395 20/733 10/552 30/480
6)	03-00L2-0001-0000-0000	Scott C. Sonda, Single; Mark Alan Sonda and Holly D. Sonda, husband and wife	Great Lakes Energy Partners, L.L.C. Range Resources - Appalachia, LLC Chesapeake Appalachia, L.L.C. SWN Production Company, LLC	15.50%	913/542 20/733 808/350 883/527
7)	03-00L2-0009-0000-0000	CNX Gas Company LLC	Range Resources - Appalachia, LLC Chesapeake Appalachia, L.L.C. SWN Production Company, LLC	17.50%	810/174 837/125 885/776

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8)	03-00L2-0002-0000-0000	Scott C. Sonda, Single; Mark Alan Sonda and Holly D. Sonda, husband and wife	Great Lakes Energy Partners, L.L.C. Range Resources - Appalachia, LLC Chesapeake Appalachia, L.L.C. SWN Production Company, LLC	15.50%	770/18 20/733 808/350 883/527
9)	03-00L2-0008-0004-0000	Charles Edward Boone and Sharon R. Boone, husband and wife	Range Resources - Appalachia, LLC Chesapeake Appalachia, L.L.C. SWN Production Company, LLC	17.00%	794/89 808/542 883/539
10)	03-00L2-0012-0000-0000	Chad Cox and Julie C. Cox, husband and wife, as joint tenants with right of survivorship	Chesapeake Appalachia, L.L.C. SWN Production Company, LLC	18.00%	814/555 883/575
11)	03-00L5-0029-0000-0000	Timothy R. Hays and Thelma C. Hays, husband and wife, as joint tenants with right of survivorship	Chesapeake Appalachia, L.L.C. SWN Production Company, LLC	18.00%	813/627 883/563
12)	03-00L5-0008-0000-0000	Joseph E. Ennis and Marjorie G. Ennis, husband and wife, as joint tenants with right of survivorship	Great Lakes Energy Partners, L.L.C. Range Resources - Appalachia, LLC Chesapeake Appalachia, L.L.C. SWN Production Company, LLC	15.50%	771/748 20/733 808/368 883/527
13)	03-00L5-0010-0000-0000	Helen L. Tominack, widow, and John I. Tominack, Jr. and Dena L. Tominack, husband and wife	Great Lakes Energy Partners, L.L.C. Range Resources - Appalachia, LLC Chesapeake Appalachia, L.L.C. SWN Production Company, LLC	15.50%	849/496 20/733 808/556 883/515

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WV Department of  
Environmental Protection

**EXHIBIT "A"**

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01/11/2019  
SWN Production Company, LLC  
179 Innovation Drive  
Jane Lew, WV 26378  
Tel: 304 884 1610  
Fax: 304 471 2497  
www.swn.com

47 00 3 00270

March 22, 2018

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

**RE:** SWN's proposed New Well: Samuel Jones BRK 206H in Brooke County, West Virginia, Drilling under Hukills Hill Road and Locust Grove 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 Hukills Hill Road and Locust Grove 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,

Michael H. Wilder, RPL  
Staff Landman  
SWN Production Company, LLC

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Environmental Protection



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: 10/19/18

API No. 47- 009 -  
Operator's Well No. Samuel Jones BRK 206H  
Well Pad Name: Samuel Jones 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>537359.15</u>
County:	<u>009- Brooke</u>		Northing:	<u>4448990.39</u>
District:	<u>Buffalo</u>	Public Road Access:	<u>Hukill Hill/Marlboro Spur Road</u>	
Quadrangle:	<u>Bethany</u>	Generally used farm name:	<u>Samuel Jones</u>	
Watershed:	<u>Upper Ohio South</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 style="padding-left: 100px;"><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><b>OOG OFFICE USE ONLY</b></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>
--	---

**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.

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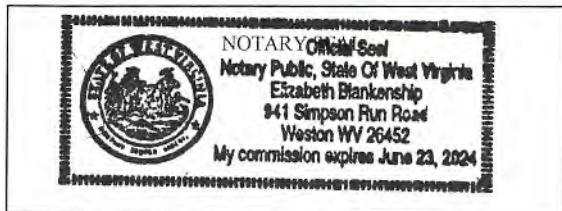
OCT 22 2018

WV Department of  
Environmental Protection

**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>P.O. Box 1300</u>
By:	<u>Brittany Woody</u>		<u>Jane Lew, WV 26378</u>
Its:	<u>Regulatory Analyst</u>	Facsimile:	<u>304-884-1690</u>
Telephone:	<u>304-884-1610</u>	Email:	<u>Brittany_Woody@swn.com</u>



Subscribed and sworn before me this 10 day of July 2018.

Elizabeth Blankenship Notary Public

My Commission Expires 6/23/24

**Oil and Gas Privacy Notice:**

The Office of Oil and Gas processes your personal information, such as name, address and telephone number, as part of our regulatory duties. Your personal information may be disclosed to other State agencies or third parties in the normal course of business or as needed to comply with statutory or regulatory requirements, including Freedom of Information Act requests. Our office will appropriately secure your personal information. If you have any questions about our use or your personal information, please contact DEP's Chief Privacy Officer at [depprivacyofficer@wv.gov](mailto:depprivacyofficer@wv.gov).

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Office of Oil and Gas

OCT 22 2018

WV Department of  
Environmental Protection

**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:** 10/19/18 **Date Permit Application Filed:** 10/19/18

**Notice of:**

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

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

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

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

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

SURFACE OWNER(s)  
 Name: Samuel & Judith Jones  
 Address: 861 Marlboro Spur Road  
Bethany, WV 26032  
 Name: Anna M. Norden  
 Address: 3500 Walker Road  
Hillard, OH 43026

COAL OWNER OR LESSEE  
 Name: Conrhein Coal Company  
 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: See Attachment 13  
 Address: \_\_\_\_\_

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

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

\*Please attach additional forms if necessary

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01/11/2019

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SAMUEL JONES BRK PAD WATER SOURCES  
ATTACHMENT 13

PAR ID	OWNER	ADDRESS	CITY	STATE	ZIP	WATERSOURCES
03 B4300600000000	JONES SAMUEL E & JUDITH F	861 MARLBORO SPUR RD	BETHANY	WV	26032	4
03 B4800220000000	NORDEN ANNA MAE	3500 WALKER RD	HILLIARD	OH	43026	2
03 B4800240001000	CHAMBERS HARRY L & BEVERLY R (SURV)	626 MARLBORO SPUR RD	BETHANY	WV	26032	1

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OCT 22 2018

WV Department of  
Environmental Protection

WW-6A  
(8-13)

OCT 22 2018

WV Department of  
Environmental Protection**Notice is hereby given:**

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

**This Notice Shall Include:**

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

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

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

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

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

**Well Location Restrictions**

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

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 57<sup>th</sup> 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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WW-6A  
(8-13)

API NO. 47- 009 - **01/11/2019**  
OPERATOR WELL NO. Samuel Jones BRK 206H  
Well Pad Name: Samuel Jones Pad

**Notice is hereby given by:**

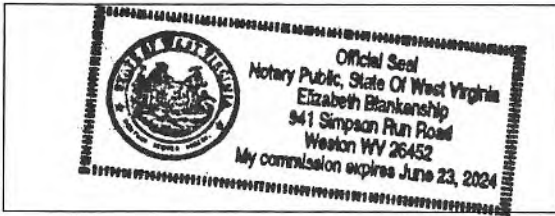
Well Operator: SWN Production Co., LLC  
Telephone: 304-884-1610  
Email: Brittany\_Woody@swn.com

*Brittany Woody*

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

**Oil and Gas Privacy Notice:**

The Office of Oil and Gas processes your personal information, such as name, address and telephone number, as part of our regulatory duties. Your personal information may be disclosed to other State agencies or third parties in the normal course of business or as needed to comply with statutory or regulatory requirements, including Freedom of Information Act requests. Our office will appropriately secure your personal information. If you have any questions about our use or your personal information, please contact DEP's Chief Privacy Officer at [depprivacyofficer@wv.gov](mailto:depprivacyofficer@wv.gov).



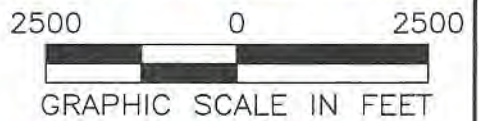
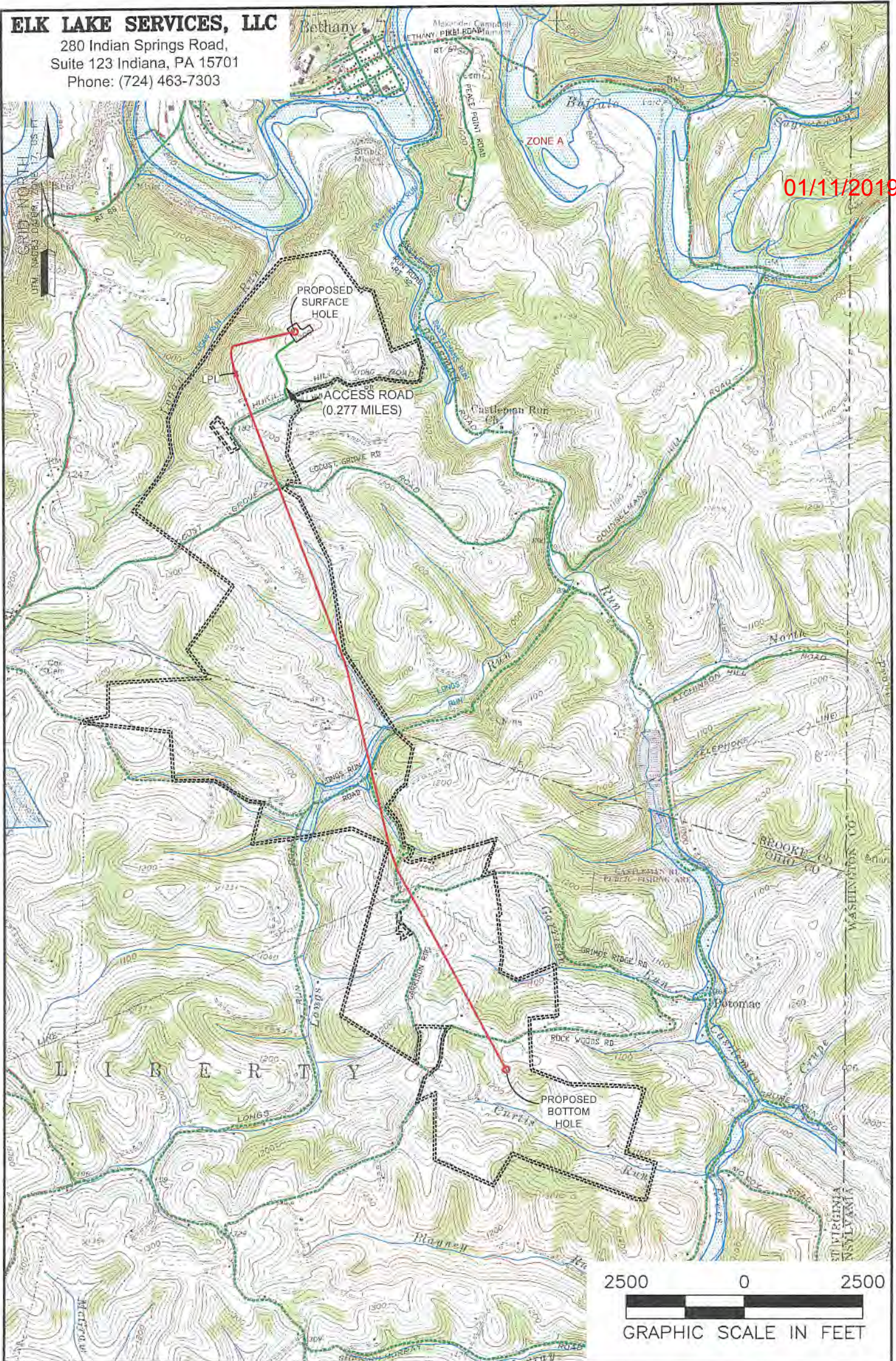
Subscribed and sworn before me this 10 day of July, 2018  
*Elizabeth Blankenship* Notary Public  
My Commission Expires 6/23/24

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WV Department of  
Environmental Protection

**ELK LAKE SERVICES, LLC**

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

01/11/2019



**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.

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**LEGEND:**

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

WELL OPERATOR:  
SWN PRODUCTION COMPANY, LLC  
ADDRESS:  
P.O. BOX 1300 JANE LEW, WV 26378  
SURFACE OWNER:  
JONES, SAMUEL E & JUDITH F

WV Department of  
Environmental Protection

WELL (FARM) NAME: SAMUEL JONES BRK	WELL # 206H	SERIAL # XXXX
COUNTY BROOKE COUNTY - 9	DISTRICT: BUFFALO	
USGS 7 1/2 QUADRANGLE MAP NAME BETHANY, WV		

**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:** 2/13/2018      **Date of Planned Entry:** 2/20/2018

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

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

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

**Notice is hereby provided to:**

SURFACE OWNER(s)

Name: Samuel & Judith Jones

Address: 861 Marlboro Spur Road  
Bethany, WV 26032

Name: \_\_\_\_\_

Address: \_\_\_\_\_

Name: \_\_\_\_\_

Address: \_\_\_\_\_

COAL OWNER OR LESSEE

Name: The Heirs of Paul Bryan Tilton

Address: \_\_\_\_\_

MINERAL OWNER(s)

Name: Resources Minerals Headwater I, L.P.

Address: 11412 Bee Cave Road  
Austin, TX 78738

\*please attach additional forms if necessary

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**OCT 22 2018**  
  
WV Department of  
Environmental Protection

**Notice is hereby given:**

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

State: <u>West Virginia</u>	Approx. Latitude & Longitude: <u>40.1090440, -80.560908</u>
County: <u>Brooke</u>	Public Road Access: <u>Hukill Hill Road/Marlboro Spur Road</u>
District: <u>Buffalo</u>	Watershed: <u>Middle Buffalo Creek</u>
Quadrangle: <u>Bethany</u>	Generally used farm name: <u>Samuel Jones</u>

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

**Notice is hereby given by:**

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

WW-6A4  
(1/12)

Operator Well No. 01/11/2019  
4700900270

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:** 05/10/2018 **Date Permit Application Filed:** 10/19/18

**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: Anna M. Norden  
Address: 3500 Walker Road  
Hillard, OH 43026

Name: \_\_\_\_\_  
Address: \_\_\_\_\_  
OCT 22 2018

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WV Department of  
Environmental Protection

**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: West Virginia UTM NAD 83 Easting: 537,359.14  
County: Brooke Northing: 4,448,990.40  
District: Buffalo Public Road Access: Hukill Hill Rd/Marlboro Spur Rd  
Quadrangle: Bethany Generally used farm name: Samuel Jones BRK  
Watershed: Upper Ohio South

**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 57<sup>th</sup> Street, SE, Charleston, WV 25304 (304-926-0450) or by visiting [www.dep.wv.gov/oil-and-gas/pages/default.aspx](http://www.dep.wv.gov/oil-and-gas/pages/default.aspx).

**Notice is hereby given by:**

Well Operator: SWN Production Company, LLC  
Address: PO Box 1300, 179 Innovation Drive  
Jane Lew, WV 26378  
Telephone: 304-517-6603  
Email: Michael\_Yates@swn.com  
Facsimile: 304-471-2497

Authorized Representative: Mike Yates  
Address: PO Box 1300, 179 Innovation Drive  
Jane Lew, WV 26378  
Telephone: 304-517-6603  
Email: Michael\_Yates@swn.com  
Facsimile: 304-471-2497

**Oil and Gas Privacy Notice:**

The Office of Oil and Gas processes your personal information, such as name, address and telephone number, as part of our regulatory duties. Your personal information may be disclosed to other State agencies or third parties in the normal course of business or as needed to comply with statutory or regulatory requirements, including Freedom of Information Act requests. Our office will appropriately secure your personal information. If you have any questions about our use or your personal information, please contact DEP's Chief Privacy Officer at [depprivacyofficer@wv.gov](mailto:depprivacyofficer@wv.gov).

WW-6A5  
(1/12)

Operator Well No. 4700900270 Sample No. 01/1/2019

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

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

**Date of Notice:** 05/10/2018      **Date Permit Application Filed:** 10/19/18

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

- CERTIFIED MAIL                                       HAND
- RETURN RECEIPT REQUESTED                                      DELIVERY

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

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

Name: Anna M. Norden  
Address: 3500 Walker Road  
Hillard, OH 43026

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Office of Oil and Gas  
**OCT 22 2018**  
WV Department of  
Environmental Protection

**Notice is hereby given:**

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

State:	<u>West Virginia</u>	UTM NAD 83	Easting:	<u>537,359.14</u>
County:	<u>Brooke</u>		Northing:	<u>4,448,990.40</u>
District:	<u>Buffalo</u>	Public Road Access:	<u>Hukill Hill Rd/Marlboro Spur Rd</u>	
Quadrangle:	<u>Bethany</u>	Generally used farm name:	<u>Samuel Jones BRK</u>	
Watershed:	<u>Upper Ohio South</u>			

**This Notice Shall Include:**

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

Well Operator: SWN Production Company, LLC  
Telephone: 304-517-6603  
Email: Michael\_Yates@swn.com

Address: PO Box 1300, 179 Innovation Drive  
Jane Lew, WV 26378  
Facsimile: 304-471-2497

**Oil and Gas Privacy Notice:**

The Office of Oil and Gas processes your personal information, such as name, address and telephone number, as part of our regulatory duties. Your personal information may be disclosed to other State agencies or third parties in the normal course of business or as needed to comply with statutory or regulatory requirements, including Freedom of Information Act requests. Our office will appropriately secure your personal information. If you have any questions about our use or your personal information, please contact DEP's Chief Privacy Officer at [depprivacyofficer@wv.gov](mailto:depprivacyofficer@wv.gov).



4700300270 01/11/2019

WEST VIRGINIA DEPARTMENT OF TRANSPORTATION  
**Division of Highways**

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

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

**June 13, 2018**

**Jill M. Newman**  
Deputy Commissioner

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

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**OCT 22 2018**

WV Department of  
Environmental Protection

Subject: DOH Permit for the Samuel Jones Pad, Brooke County

Samuel Jones 206H Well Site

Dear Mr. Martin,

The West Virginia Division of Highways has issued permit 06-2018-0335 to Southwestern Energy for access to the State Road for the well site located off of Brooke County Route 32/1 SLS.

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

Very Truly Yours,

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

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

Product Name	Product Use	Chemical Name	CAS Number
EC6734A (Champion Technologies)	Biocide	Hydrogen Peroxide	7722-84-1
		Acetic Acid	64-19-7
		Peroxyacetic Acid	79-21-0
GYPTRON T-390 (Champion Technologies)	Scale Inhibitor	Methanol	01/11/2019 67-56-1
		Nonylphenol Ethoxylate	Proprietary
Bactron K-139 (Champion Technologies)	Biocide	Glutaraldehyde	111-30-8
		Quaternary Ammonium Compounds, Benzyl-C12-16-Alkyldimethyl, Chlorides	68424-85-1
		Ethanol	64-17-5
Bactron K-219 (Champion Technologies)	Biocide	Methanol	67-56-1
		Quaternary Ammonium Compounds, Benzyl-C12-16-Alkyldimethyl, Chlorides	68424-85-1
EC6486A (Nalco Champion)	Scale Inhibitor	Amine Triphosphate	Proprietary
		Ethylene Glycol	107-21-1
WFRA-2000 (U.S. Well Services)	Anionic Friction Reducer	Hydrotreated light distillate (petroleum)	64742-47-8
		Propenoic acid, polymer with propenamide	9003-06 9
AI-303 (U.S. Well Services)	Mixture	Ethylene glycol	107-21 1
		Cinnamaldehyde	104-55 2
		Butyl cellosolve	111-76 2
		Formic acid	64-18 6
		Polyether	Proprietary
		Acetophenone, thiourea, formaldehyde polymer	68527-49 1
AP ONE (U.S. Well Services)	Breaker	Ammonium persulfate	7727-54-0
OPTI-FLEX (U.S. Well Services)	Viscosifying Agent	Distillates, petroleum, hydrotreated light	64742-47-8
Econo-CI200 (SWN Well Services)	Corrosion Inhibitor	Methanol	67-56-1
		Oxyalkylated fatty acid	68951-67-7
		Fatty acids	61790-12-3
		Modified thiourea polymer	68527-49-1
		Water	7732-18-5
		Hydrochloric acid	7647-01-0
		Potassium acetate	127-08-2
		Formaldehyde	50-00-0
Ecopol-FEAC (SWN Well Services)	Iron Control	Acetic Acid	64-19-7
		Citric Acid	77-92-9
		Water	7732-18-5
HCL (SWN Well Services)	Hydrocholic Acid	Hydrochloric Acid	7647-01-0
		Water	7732-18-5
FLOJET DRP 1130X (SWN Well Services)	Friction Reducer	Proprietary	Proprietary
FLOJET DR900 LPP (SWN Well Services)	Friction Reducer	Distillates (petroleum) hydrotreated light	64674-47-8
		Ethylene Glycol	107-21-1
		Alcohols, C12-16, Exoxylated propoxylated	68213-24-1
		Fatty Alcohols ethoxylated	Proprietary
		Water	7732-18-5
FR-76 (Halliburton)	Friction Reducer	Hydrotreated light petroleum distillate	64742-47-8
		Inorganic Salt	Proprietary
HAI-150E (Halliburton)	Corrosion Inhibitor	No hazardous substance	N/A
FDP-S1176-15 (Halliburton)	Friction Reducer	Polyacrylate	Proprietary
		Hydrotreated light petroleum distillate	64742-47-8
LP-65 MC (Halliburton)	Scale Inhibitor	Organic phosphonate	Proprietary
		Ammonium Chloride	12125-02-9
CarboNRT	Tracer	Ceramic Proppant	66402-68-4

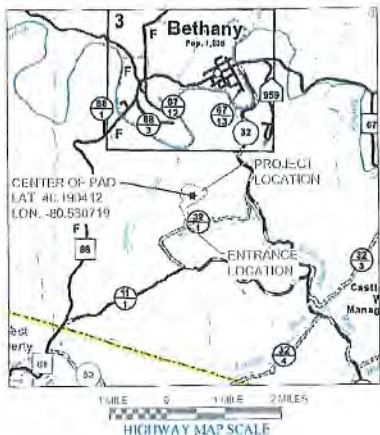
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Office of Oil and Gas

OCT 22 2018

WV Department of  
Environmental Protection

# EROSION AND SEDIMENTATION CONTROL PLAN

## FOR SAMUEL JONES WELL PAD AND ACCESS ROAD BUFFALO DISTRICT, BROOKE COUNTY, WV MARCH 2018 REVISED SEPTEMBER 2018



TOP OF E COORDINATES				
WELL NUMBER	WV83 N LATITUDE	WV83 N LONGITUDE	UTM 83-17 Northing	UTM 83-17 Easting
Slot 1	N 40.190297908	W 80.562945610	14596378.058 ft	1761032.563 ft
Slot 2	N 40.1908130888	W 80.567965040	14596378.172 ft	1761026.645 ft
Slot 3	N 40.1903743300	W 80.567997720	14596341.287 ft	1761020.827 ft
Slot 4	N 40.1908597910	W 80.5610077830	14596355.401 ft	1761014.589 ft
Slot 5	N 40.190821930	W 80.5610295430	14596362.516 ft	1761009.151 ft
Slot 6	N 40.1904264770	W 80.5610700620	14596379.745 ft	1761033.303 ft
Slot 7	N 40.1904292390	W 80.5610090210	14596387.860 ft	1761031.630 ft
Slot 8	N 40.1904182010	W 80.561115810	14596395.574 ft	1761035.000 ft
Slot 9	N 40.1904939630	W 80.5611323410	14596404.089 ft	1761079.952 ft
Slot 10	N 40.1905163240	W 80.5611531010	14596417.203 ft	1761074.124 ft
Slot 11	N 40.190545340	W 80.5610881200	14596428.214 ft	1761093.599 ft
Slot 12	N 40.1906321720	W 80.5610429610	14596418.099 ft	1761099.437 ft
Slot 13	N 40.1906321720	W 80.5610429610	14596418.099 ft	1761099.437 ft
Slot 14	N 40.1906099100	W 80.5610456010	14596409.985 ft	1761005.122 ft
Slot 15	N 40.190674940	W 80.5610208420	14596408.879 ft	1761011.122 ft
Slot 16	N 40.1906608070	W 80.5610008110	14596395.756 ft	1761016.950 ft
Slot 17	N 40.190427250	W 80.5609753220	14596385.642 ft	1761022.788 ft
Slot 18	N 40.1904208630	W 80.5609585620	14596377.527 ft	1761028.626 ft
Slot 19	N 40.190390010	W 80.5609370030	14596368.412 ft	1761034.464 ft
Slot 20	N 40.1903756390	W 80.5609120440	14596361.298 ft	1761040.302 ft
Slot 21	N 40.1903537780	W 80.5608922840	14596352.184 ft	1761046.139 ft
Slot 22	N 40.1903309160	W 80.5608755220	14596345.069 ft	1761051.977 ft

REVISION NUMBER	REVISION SHEETS	BY	DATE	DESCRIPTION
1		KCC	9/4/18	ADD BENDS TO NORTH SLOPE OF PAD

DISTURBANCE SUMMARY			
PROPERTY OWNER (PLA/IMP/PARCEL)	ACCESS POINT DISTURBANCE	WELLING DISTURBANCE	SPILL DISTURBANCE
AMVIA LOGGING (66.55 018 4002)	0.10	0	0.00
SMITH, JAMES (0541810102)	1.15	2.0	4.0
TOTAL DISTURBANCE	1.25	2.0	4.0

SITE COORDINATES		
Coordinate Label	Well Pad Center	Access Road Beginning
WV83-N Latitude	N 40.190412°	N 40.190910°
WV83-N Longitude	W 80.562971°	N 80.581638°
WV83-N Northing	9,174,562.829 ft	9,181,983.819 ft
WV83-E Easting	1,761,032.563 ft	1,761,999.919 ft
UTM 83-17 Northing	14,596,378.058 ft	14,596,013.819 ft
UTM 83-17 Easting	1,761,032.563 ft	1,762,443.419 ft
UTM 83-17 Northing	44,089,951 m	44,438,485 m
UTM 83-17 Easting	337,922.520 m	337,974.281 m

SHEET INDEX	
SHEET	DESCRIPTION
2-3	TITLE SHEET
4	PREVAILING WINDS AND EVACUATION ROUTE
5	EXISTING CONDITIONS SITE PLAN
6	OVERALL SITE PLAN
6-12	ENLARGED SITE PLAN
13	WELL PAD LAYOUT PLAN
14-15	ACCESS ROAD PROFILE
16-17	ACCESS ROAD SECTIONS
18-19	WELL PAD SECTIONS
20	RECLAMATION PLAN
21-23	GENERAL NOTES
24-30	DETAILS

ENGINEER'S ESTIMATE OF QUANTITIES		
WELL PAD DATA		
DESCRIPTION	ESTIMATED QUANTITY	UNIT
WELL PAD CUT (EXCLUDES TOP SOIL, ASSUMES A 1.15 SWELL FACTOR)	55,972	CY
WELL PAD FILL (EXCLUDES TOP SOIL)	55,370	CY
TOE KEY EXCAVATION	10,660	CY
TOE KEY FWIDTH	3,290	LF
TOE KEY DRAINAGE PIPE	3,290	LF
TOE KEY DRAINAGE STONE	1,573	TN
TOE KEY OUTLET PIPE	400	LF
WELL PAD TOPSOIL STRIPPING	8,800	CY
CLASS 2 GEOTEXTILE	26,539	SY
FINISH GRADE CRUSHER RUN 4" (ROCK PROVIDED BY QUARRY) PLACEMENT COST	2,391	TN
BASE ROCK R-3 12" (ROCK PROVIDED BY QUARRY) PLACEMENT COST	7,173	TN
24" BERM	1,393	LF
24" MOUNTABLE BERM	100	LF
WELL PAD SLUMP*	4	EA
*CATCH BASIN, INDICATOR POST, 4" GATE VALVE, ANTI-SLEEP COIL BARS, 6" 4" SOLID SCHEDULE 40 PIPE INCIDENTAL		
WELL PAD ACCESS ROAD DATA		
CLASS 2 GEOTEXTILE	6,415	SY
FINISH GRADE CRUSHER RUN 4" (ROCK PROVIDED BY QUARRY) PLACEMENT COST	891	TN
BASE ROCK R-3 12" (ROCK PROVIDED BY QUARRY) PLACEMENT COST	2,672	TN
18-IN DIAMETER HOPE CULVERT	150	LF
OUTLET PROJECTION/ROCK APRON SLUMP	6	EA
*EARTHWORK & TOE KEY QUANTITIES FOR THE ACCESS ROAD ARE INCLUDED WITHIN THE WELL PAD CUT AND FILL		
EROSION & SEDIMENT CONTROL ITEMS		
COMPOST FILTER SOCK, 18-IN	2,395	LF
COMPOST FILTER SOCK, 24-IN	3,395	LF
STRAW WATTLE	4,115	LF
EROSION CONTROL MATTING LINED DITCH	1,555	LF
ROLLED EROSION CONTROL SLOPE MATTING	202,300	SF
ROCK CHECK DAM	8	EA
SEEDING, LIME, & FERTILIZER	5.1	AC
OTHER PROJECT ITEMS		
STABILIZED CONSTRUCTION ENTRANCE	1	EA
MOBILIZATION/DEMobilIZATION	--	LS
TRENCH SAFETY PLAN & PROTECTION	--	LS
ROCK CORE DRAIN (CLASS 2 GEOTEXTILE IN PAD QUANTITY)	822	TN
FARM GATE W/CATTLE GUARD (16 FT)	5	EA
TEMPORARY FARM FENCE	5,355	LF
PERMANENT FARM FENCE	3,475	LF
CLEARING AND GRUBBING ITEMS		
TOTAL FORESTED CLEARING AND GRUBBING	1,902	AC
TOTAL NON-FORESTED CLEARING AND GRUBBING	19,669	AC

**APPROVED**  
**WVDEP OOG**  
9/10/2018



**SWN**  
Southwestern Energy

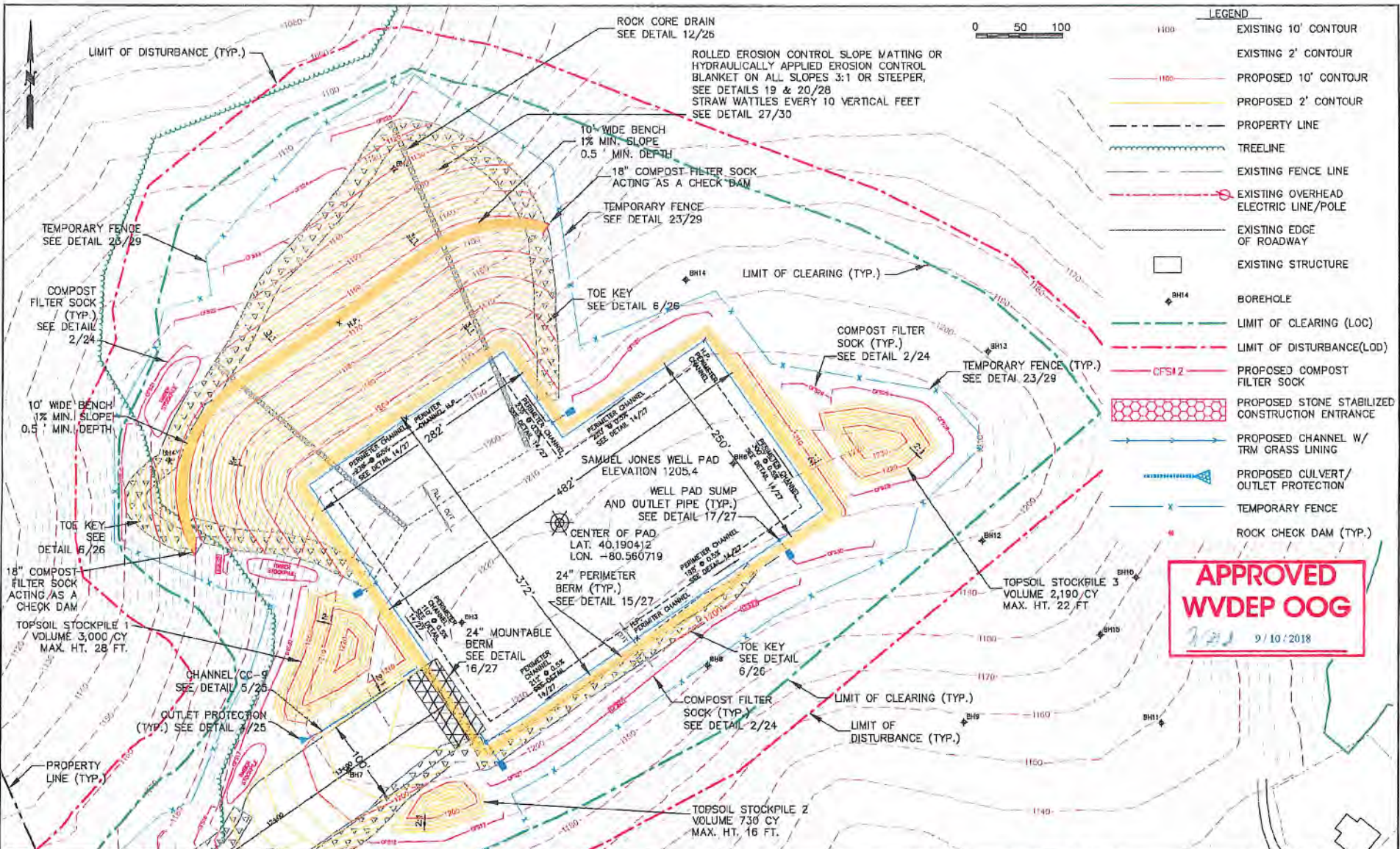
**DIRECTIONS TO SITE**  
FROM WEST LIBERTY: WV - STATE ROUTE 80 NORTH APPROXIMATELY 1.0 MILE, TURN RIGHT ONTO COUNTY ROAD 114, TRAVEL APPROXIMATELY 1.2 MILES, AND TURN LEFT ONTO COUNTY ROAD 504, TRAVEL APPROXIMATELY 0.75 MILE, PROPOSED ACCESS ROAD IS ON THE LEFT.  
FROM BETHANY: WV - STATE ROUTE 80 SOUTH APPROXIMATELY 1.4 MILES, TURN RIGHT ONTO COUNTY ROAD 284, TRAVEL APPROXIMATELY 0.8 MILE, PROPOSED ACCESS ROAD IS ON THE RIGHT.

**OPERATOR**  
SWN PUBLIC UTIL COMPANY LLC  
1700 INDEPENDENCE DRIVE  
JANESVILLE, WV 25978  
(204) 894-8100  
**ELS**  
ELECTRIC SERVICES LLC  
200 HUNTER STREET, SUITE 122  
BETHANY, PA 15704  
(717) 463-7385 FAX (717) 463-7384

17-0010 Samuel JonesSite DesignESOSamuel Jones Erosion and Sediment Control Plan

CONTRACTOR SHALL NOTIFY THE ONE-CALL SYSTEMS OF THE INTENDED EXCAVATION OR DESTRUCTION NOT LESS THAN 2 (TWO) BUSINESS HOURS, EXCEPT ON SATURDAY, SUNDAY AND LEGAL FEDERAL OR STATE HOLIDAYS, OR MORE HOURS THAN WORK DAYS PRIOR TO THE BEGINNING OF SUCH WORK.





- LEGEND**
- EXISTING 10' CONTOUR
  - EXISTING 2' CONTOUR
  - PROPOSED 10' CONTOUR
  - PROPOSED 2' CONTOUR
  - PROPERTY LINE
  - TREELINE
  - EXISTING FENCE LINE
  - EXISTING OVERHEAD ELECTRIC LINE/POLE
  - EXISTING EDGE OF ROADWAY
  - EXISTING STRUCTURE
  - ◆ BOREHOLE
  - LIMIT OF CLEARING (LOC)
  - LIMIT OF DISTURBANCE (LOD)
  - PROPOSED COMPOST FILTER SOCK
  - PROPOSED STONE STABILIZED CONSTRUCTION ENTRANCE
  - PROPOSED CHANNEL W/ TRM GRASS LINING
  - PROPOSED CULVERT/ OUTLET PROTECTION
  - TEMPORARY FENCE
  - ◆ ROCK CHECK DAM (TYP.)

**APPROVED**  
**WVDEP OOG**  
 9/10/2018

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NO.	BY	DATE	DESCRIPTION
1	KDC	8/4/18	ADDED BENCH TO NORTH SLOPE OF PAD, REDUCED PAD SIZE



APPROVED FOR PERMITS	DATE
APPROVED FOR BID	DATE
APPROVED FOR CONSTRUCTION	DATE
PROJECT NO.	11-0016

**ELS**  
 ELK LANE SERVICES, LLC  
 280 INDIAN SPRINGS ROAD, SUITE 123  
 INDIANA, PA 15701  
 PHONE (724) 463-7353 FAX (724) 463-7324

PROJECT OWNER  
**SWN PRODUCTION COMPANY, LLC**  
 PROJECT NAME  
**SAMUEL JONES WELL PAD**  
 PROJECT LOCATION  
**BROOKE COUNTY, WV**

SHEET TITLE  
**WELL PAD LAYOUT PLAN**

SHEET NO.  
**13**