



west virginia department of environmental protection

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

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

Tuesday, February 8, 2022
WELL WORK PERMIT
Horizontal 6A / New Drill

SWN PRODUCTION COMPANY, LLC
POST OFFICE BOX 12359
SPRING, TX 773914954

Re: Permit approval for BROWNLEE LAND VENTURES BRK 6
47-009-00328-00-00

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: BROWNLEE LAND VENTURE
Farm Name: BROWNLEE LAND VENTURE
U.S. WELL NUMBER: 47-009-00328-00-00
Horizontal 6A New Drill
Date Issued: 2/8/2022

Promoting a healthy environment.

02/11/2022

PERMIT CONDITIONS

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

CONDITIONS

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

API Number: _____

PERMIT CONDITIONS

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

02/11/2022

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 Weirton 664-Weirton
Operator ID County District Quadrangle

2) Operator's Well Number: Brownlee Land Ventures BRK 6 Well Pad Name: Brownlee Land Ventures

3) Farm Name/Surface Owner: Brownlee Land Ventures LP Public Road Access: Park Drive

4) Elevation, current ground: 984.5 Elevation, proposed post-construction: 983.9

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

(b) If Gas Shallow Deep
Horizontal

6) Existing Pad: Yes or No No

Gayne Knitowski
Digitally signed by
Gayne Knitowski
Date: 2022.02.01
12:43:43 -05'00'

7) Proposed Target Formation(s), Depth(s), Anticipated Thickness and Expected Pressure(s):
Target Formation- Marcellus, Down-Dip well to the South, Target Top TVD- 5317', Target Base TVD- 5383', Anticipated Thickness- 66', Associated Pressure- 3499

8) Proposed Total Vertical Depth: 5344' Vertical

9) Formation at Total Vertical Depth: Marcellus

10) Proposed Total Measured Depth: 5344'

11) Proposed Horizontal Leg Length: N/A

12) Approximate Fresh Water Strata Depths: 376'

13) Method to Determine Fresh Water Depths: Deepest known water well within 1500'. Shallow logs to be run on 1st well to confirm.

14) Approximate Saltwater Depths: 471' TVD, based on nearest salinity profile analysis to south.

15) Approximate Coal Seam Depths: Unnamed coal seam at 441' TVD

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: _____

18)

CASING AND TUBING PROGRAM

TYPE	<u>Size (in)</u>	<u>New or Used</u>	<u>Grade</u>	<u>Weight per ft. (lb/ft)</u>	<u>FOOTAGE: For Drilling (ft)</u>	<u>INTERVALS: Left in Well (ft)</u>	<u>CEMENT: Fill-up (Cu. Ft.)/CTS</u>
Conductor	20"	New	J-55	94#	126'	126'	CTS
Fresh Water	13 3/8"	New	H-40	48#	426'	426'	394 sx/CTS
Coal	See	Intermediate	Casing				
Intermediate	9 5/8"	New	J-55	36#	1100'	1100'	731 sx/CTS
Production	5 1/2"	New	P-110 HP	20#	5344'	5344'	Tail 300sx/ 100' Inside Intermediate
Tubing							
Liners							

Gayne
Knitowski

Digitally signed by Gayne Knitowski
Date: 2022.02.01 12:44:02 -05'00'

TYPE	<u>Size (in)</u>	<u>Wellbore Diameter (in)</u>	<u>Wall Thickness (in)</u>	<u>Burst Pressure (psi)</u>	<u>Anticipated Max. Internal Pressure (psi)</u>	<u>Cement Type</u>	<u>Cement Yield (cu. ft./k)</u>
Conductor	20"	30"	0.25	2120	81	Class A	1.20/30% Excess
Fresh Water	13 3/8"	17.5"	0.380	2730	633	Class A	1.20/30% Excess
Coal	See	Intermediate	Casing				
Intermediate	9 5/8"	12 1/4"	0.395	3950	1768	Class A	1.19/40% Excess
Production	5 1/2"	8 3/4"-8 1/2"	0.361	14360	10500	Class A	1.19/5% Excess
Tubing							
Liners							

PACKERS

Kind:				
Sizes:				
Depths Set:				

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

The well will be drilled to a depth approximately 100' below the top of the Onondaga Formation to allow for open hole logging and confirming Marcellus interval formation characteristics. If casing is run, it will be run to total depth of the hole and cemented per regulatory requirements. If the well is determined to be dry and abandoned, it will be plugged per regulatory requirements for plugging and abandoning.

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. In some instances, additional toe prep may be performed by pumping additional water in the toe of the well prior to perforating and pumping Stage 1 to ensure that the toe guns/toe sleeves are fully open prior to pumping stage 1. The well is produced through surface facilities consisting of high pressure production unites, horizontal separation units, water and oil storage tanks. Max press and anticipated max rate- 9000 lbs @ 100 barrels a minute.

21) Total Area to be disturbed, including roads, stockpile area, pits, etc., (acres): 26.10

22) Area to be disturbed for well pad only, less access road (acres): 11.77

23) Describe centralizer placement for each casing string:

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

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

See Attachment ***

25) Proposed borehole conditioning procedures:

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

*Note: Attach additional sheets as needed.

Southwestern Energy Company

Proposed Drilling Program

Well: BROWNEE LAND VENTURES BRK 6
 Field: PANHANDLE FIELD \\
 County: BROOKE
 SHL: 40.3881 Latitude -80.5648 Longitude
 BHL: 40.3881 Latitude -80.5648 Longitude
 KB Elev: 1,011 ft MSL

Re-entry Rig: TBD
 Prospect: Marcellus Shale
 State: WV
 KB: 26 ft AGL
 GL Elev: 985 ft MSL



NO COAL VOID ANTICIPATED

PROD TOC Tail @ 3,800' MD

TUBULAR DETAIL

Casing String	Casing Size (in)	Weight (Min)	Grade (Min)	Planned Interval	
				From	To
Conductor	20	94.0 #	J-55	0'	126'
Surface	13.375	48.0 #	H-40	0'	426'
Inter/Coal	9.625	36.0 #	J-55	0'	1,100'
Production	5.5	20.0 #	P-110 HP	0'	5,344'

CEMENT DETAIL

	Sacks	Class	Density
Conductor:	151	A	19.3
Surface:	394	A	15.6
Intermediate:	731	A	15.6
Production:	300	A	15.6-16.0

Freshwater Depth - 376' TVD
 Coal Depth - 441' TVD
 Saltwater Depth - 471' TVD
 TVD - 5,344'
 TMD - 5,344'

126' to 446'
Air/Mist

446' to 1,120'
Air/Mist

1,120' to 5,000'
Air/Mist

5,000' to 5,344'
12.0-12.5 ppg

TD @ 5,344'
12.0-12.5 ppg

5,344' Target Center

Marcellus 5,201' MD
 Onondaga 5,244' TVD
 Well TD 5,344' TVD

CEMENT ADDITIVES

INTERVAL	SCHLUMBERGER PRODUCT NAME	BJ PRODUCT NAME	NEXTIER PRODUCT NAME	PRODUCT USE	CHEMICAL NAME	CAS-Number
SURFACE (FRESHWATER) up to 3%	XXXXXXXXXX	INTEGRA SEAL	CJ600	LOST CIRC MATERIAL	CELLOPHANE FLAKES	9005-81-6
	S001	A-7P	CJ110	ACCELERATOR	CALCIUM CHLORIDE	10043-52-4
COAL PROTECTION up to 3%	XXXXXXXXXX	INTEGRA SEAL	CJ600	LOST CIRC MATERIAL	CELLOPHANE FLAKES	9005-81-6
	S001	A-7P	CJ110	ACCELERATOR	CALCIUM CHLORIDE	10043-52-4
INTERMEDIATE	D020	BENTONITE	CJ020	EXTENDER	BENTONITE	1302-78-9
	D047	FP 28L	XXXXXXXXXX	LIQUID ANTIFOAM AGENT	POLYPROPYLENE GLYCOL	25322-69-4
	XXXXXXXXXX	INTEGRA SEAL	CJ600	LOST CIRC MATERIAL	CELLOPHANE FLAKES	9005-81-6
	CemNet	XXXXXXXXXX	XXXXXXXXXX	LOST CIRC MATERIAL	COATED FIBERGLASS FIBERS	PROPRIETARY
	SUGAR	SUGAR	CJ795	CMT RETARDER	SUCROSE	57-50-1
	S001	A-7P	CJ110	ACCELERATOR	CALCIUM CHLORIDE	10043-52-4
PRODUCTION	XXXXXXXXXX	XXXXXXXXXX	CJ111	ACCELERATOR	SODIUM CHLORIDE	7440-23-5
	XXXXXXXXXX	SS-11W	CJ880	SURFACTANT	NONIONIC SURFACTANT	6540-99-4
	D047	FP 28L	XXXXXXXXXX	LIQUID ANTIFOAM AGENT	POLYPROPYLENE GLYCOL	25322-69-4
	XXXXXXXXXX	XXXXXXXXXX	CJX157011	SOLID ANTIFOAM AGENT	FULLERS EARTH(ATTAPULGITE)	8031-18-3
	XXXXXXXXXX	XXXXXXXXXX	CJ540	HP FLUID LOSS ADDITIVE	ALIPHATIC AMIDE POLYMER	PROPRIETARY
	D255	XXXXXXXXXX	XXXXXXXXXX	MED TEMP FLUID LOSS ADDITIVE	POLYACRILIC POLYMER	PROPRIETARY
	XXXXXXXXXX	XXXXXXXXXX	CJ213	RETARDER	CHRYSTALLINE SILICA	14808-60-7
	XXXXXXXXXX	FL-66	CJ501	LOW TEMP FLUID LOSS ADD	POWDERED POLYSACCHARIDE	PROPRIETARY
	XXXXXXXXXX	BENTONITE	CJ020	EXTENDER	BENTONITE	1302-78-9
	D208	ASA-301	XXXXXXXXXX	VISCOSIFIER/ANTI- SETTLING AGENT	REFINED POLYMER/ CHRYSTALLINE SILICA	PROPRIETARY
D198	R-3		CEMENT RETARDER	LIGNIN	8068-51-6	
SUGAR	SUGAR	CJ795	CEMENT RETARDER	SUCROSE	57-50-1	

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02/11/2022

WW-9
(4/16)

API Number 47 - 009 - _____
Operator's Well No. Brownlee Land Ventures BRK 6

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) Harmon Creek Quadrangle Weirton

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 Various Approved Facilities)
- Reuse (at API Number At the next anticipated well)
- Off Site Disposal (Supply form WW-9 for disposal location)
- Other (Explain recovery and solidification on site)

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

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

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

Additives to be used in drilling medium? Attachment 3B

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

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

-Landfill or offsite name/permit number? Meadowfill SWF- 1032, Short Creek SWF-1034, Carbon Limestone MSWL018781, Wetzel County 1021 Apex Sanitary Landfill 06-08438, Brooke Co SWF-7073,

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

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

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

Company Official Signature *Brittany Woody*

Company Official (Typed Name) Brittany Woody

Company Official Title Senior Regulatory Analyst

Subscribed and sworn before me this 14 day of October, 20 21

James M. Mitchell Notary Public

My commission expires 10/01/2024

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02/14/2022

SWN Production Co., LLC

Proposed Revegetation Treatment: Acres Disturbed 26.10 Prevegetation pH _____

Lime as determined by pH test min 2 Tons/acre or to correct to pH 11.77

Fertilizer type 10-20-20

Fertilizer amount 600/500 lbs/acre

Mulch Hay/Straw Tons/acre

Seed Mixtures

Temporary

Permanent

Seed Type lbs/acre

Seed Type lbs/acre

Attachment 3C

Attach:

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

Photocopied section of involved 7.5' topographic sheet.

Plan Approved by: Bancy Shilp

Comments: _____

Title: Oil & Gas Inspector

Date: 10-12-21

Field Reviewed? Yes No

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Attachment 3A

CLOSED LOOP SYSTEM

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

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

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

AIR DRILLING INTERVALS

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

LIQUIDS DRILLING (FRESHWATER, BRINE, SOBM)

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

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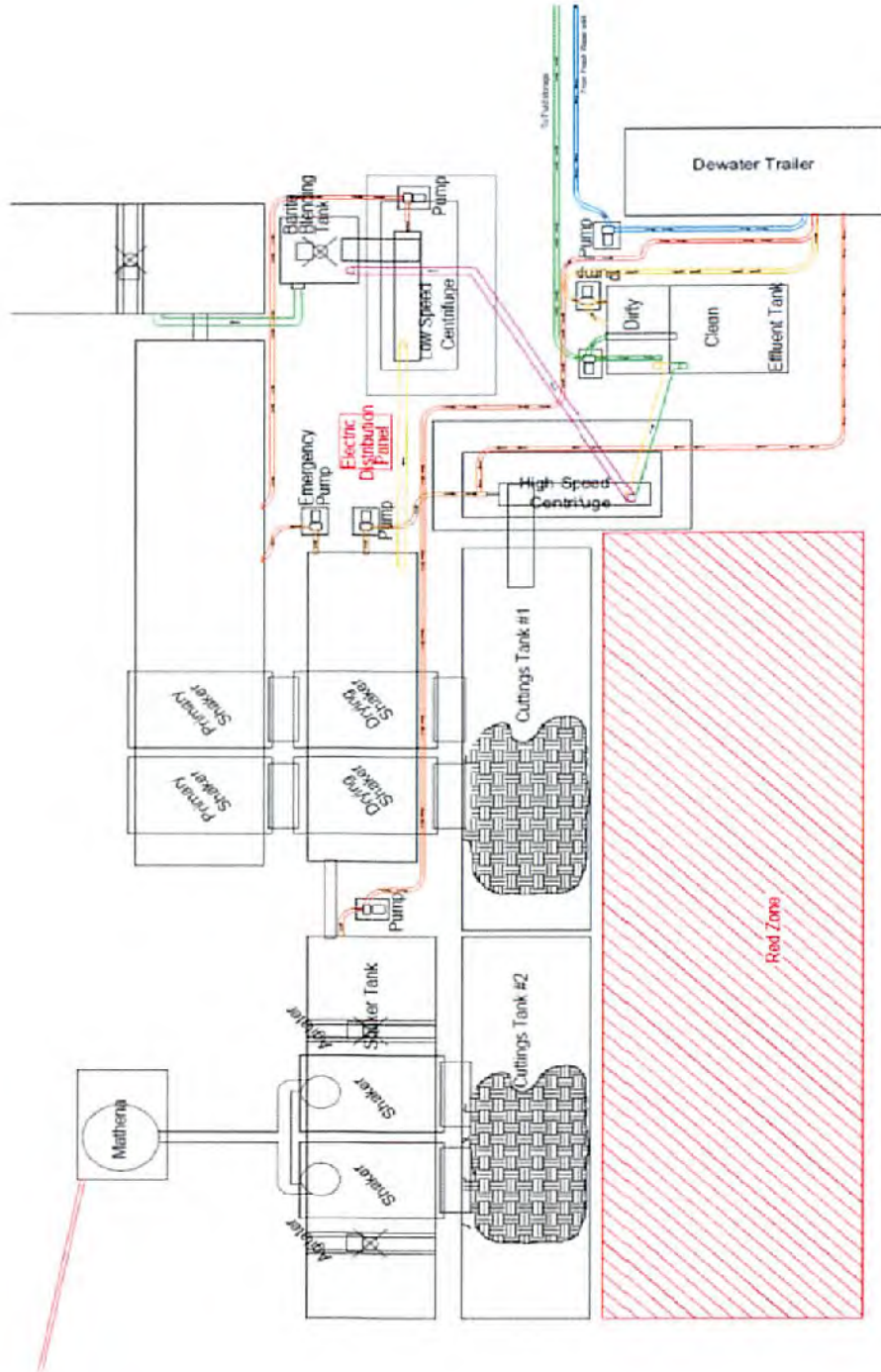
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EXAMPLE SCHEMATIC FOR CLOSED LOOP SOLIDS CONTROL SYSTEM



Solids Control Layout



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Attachment 3B

Drilling Mediums

Surface/Coal(if present)/Freshwater Intervals:

Air

Freshwater (if needed based on conditions)

Intermediate/Coal (if present):

Air

Production Hole:

Air

Synthetic Oil (Base Fluid for mud system)

Barite

Calcium Chloride

Lime

Organophilic Bentonite

Primary and Secondary Emulsifiers

Gilsonite

Calcium Carbonate

Friction Reducers

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WVD Seeding Specification



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

NON-ORGANIC PROPERTIES		
Seed Mixture: ROW Mix	SWN Supplied	
Orchardgrass	40%	
Timothy	15%	
Annual Ryegrass	15%	
Brown Top Millet	5%	
Red Top	5%	
Medium Red Clover	5%	All legumes are innoculated at 5x normal rate
White Clover	5%	
Birdsfoot Trefoil	5%	
Rough Bluegrass	5%	
Apply @ 100lbs per acre April 16th- Oct. 14th		Apply @ 200lbs per acre Oct. 15th- April 15th PLUS 50lbs per acre of Winter Wheat

SOIL AMENDMENTS	
10-20-20 Fertilizer	*Apply @ 500lbs per Acre
Pelletized Lime	Apply @ 2 Tons per Acre
*unless otherwise dictated by soil test results	

Seeding Calculation Information:
1452' of 30' ROW/LOD is One Acre
871' of 50' ROW/LOD is One Acre
622' of 70' ROW/LOD is One Acre

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

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

ORGANIC PROPERTIES		
Seed Mixture: SWN Production Organic Mix	SWN Supplied	
Organic Timothy	50%	
Organic Red or White Clover	50%	
OR		
Organic Perennial Ryegrass	50%	
Organic Red or White Clover	50%	
Apply @ 100lbs per acre April 16th- Oct. 14th		Apply @ 200lbs per acre Oct. 15th- April 15th
Organic Fertilizer @ 200lbs per Acre		Pelletized Lime @ 2 Tons per Acre

WETLANDS (delineated as jurisdictional wetlands)		
Seed Mixture: Wetland Mix	SWN Supplied	
VA Wild Ryegrass	20%	
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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MARCELLUS WELL DRILLING PROCEDURES AND WELL SITE SAFETY PLAN



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

API NO. 47-XXX-XXXXX
WELL NAME: Brownlee Land Ventures BRK 6
Weirton QUAD
Weirton DISTRICT
Brooke COUNTY, WEST VIRGINIA

Submitted by:

Name: Brittany Woody

Date: 9/28/2021

Title: Senior Regulatory Analyst

SWN Production Co., LLC

Approved by:

Name: _____

Date: _____

Title: _____

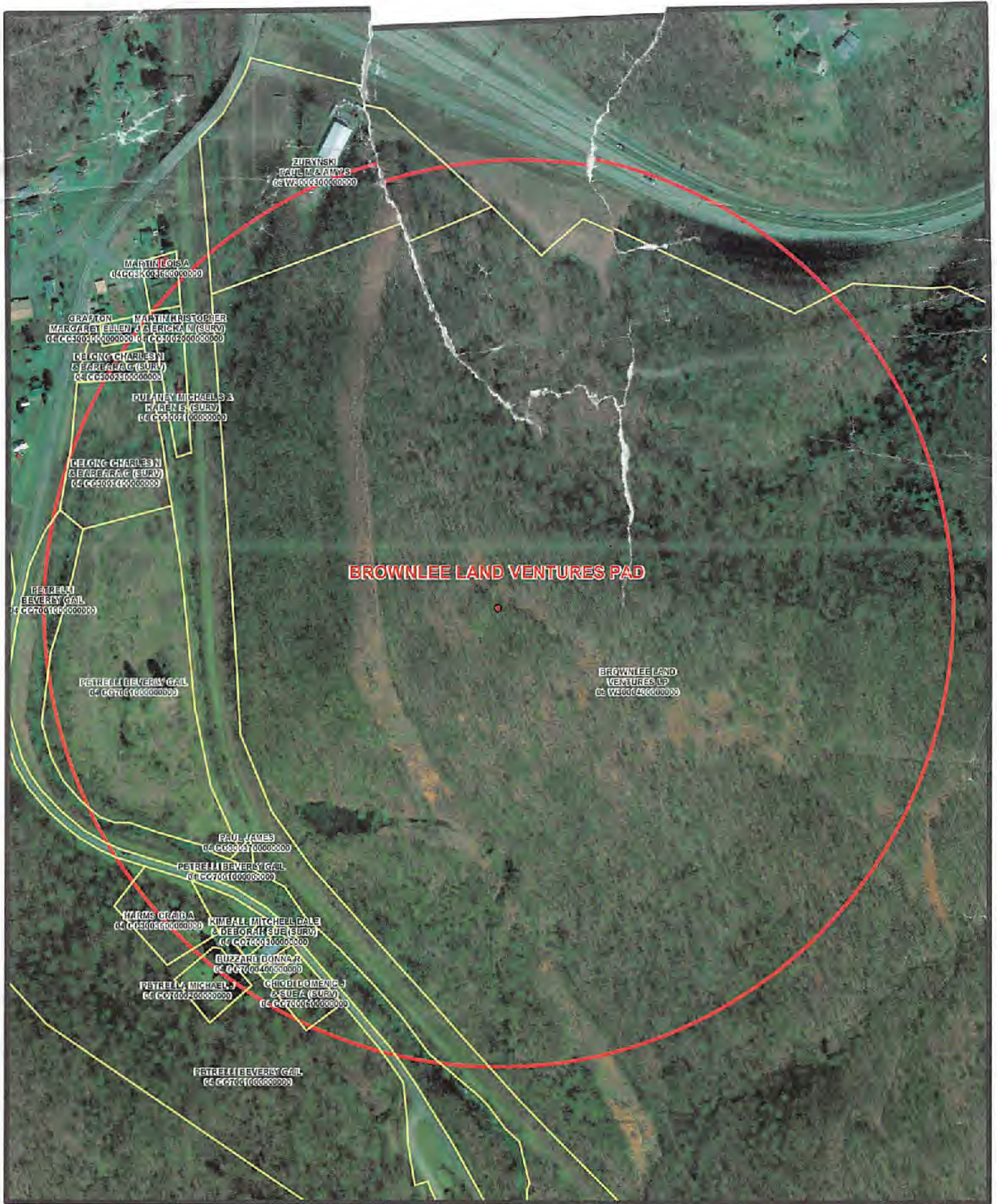
Approved by:

Name: _____

Date: _____

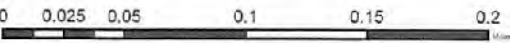
Title: _____

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BROWNLEE LAND VENTURES PAD

N
1 in = 417 ft



Coordinate System: NAD 1983 UTM Zone 17N
Units: Meter

- Spring
- Parcel
- Water Well
- 1500' Buffer
- Pond

Pre-Drill Water Sources/Landowners
Well Pad: Brownlee Land Ventures Pad
County: Brooke

SWN *Drill* *V+*
Southwestern Energy®

Date: 9/20/2021 Author: willish

Coordinates: 49 299210 80 584903

Area of Review

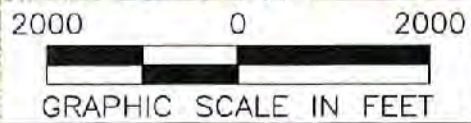
API	Operator	Status	Latitude	Longitude	Vertical TD	Producing Formation	Producing Zones Not Perforated
4700900137	SWN Production Company, LLC	Cancelled	40.382518	-80.553701	5210	Marcellus	N/A
4700900145	SWN Production Company, LLC	Cancelled	40.388101	-80.564772	5210	Marcellus	N/A
009-90050	No Information Available	No Information Available	No Information Available	No Information Available	No Information Available	No Information Available	N/A
009-90049	No Information Available	No Information Available	No Information Available	No Information Available	No Information Available	No Information Available	N/A
009-90048	No Information Available	No Information Available	No Information Available	No Information Available	No Information Available	No Information Available	N/A
009-90051	No Information Available	No Information Available	No Information Available	No Information Available	No Information Available	No Information Available	N/A
009-90052	No Information Available	No Information Available	No Information Available	No Information Available	No Information Available	No Information Available	N/A
009-90055	No Information Available	No Information Available	No Information Available	No Information Available	No Information Available	No Information Available	N/A

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 Environmental Protection



CIVIL & ENVIRONMENTAL CONSULTANTS, INC.
120 GENESIS BOULEVARD
BRIDGEPORT, WY 26330
304-933-3119

GRID NORTH
UTM ZONE DATUM 2011 17 48 17



NOTES ON SURVEY

1. SURFACE AND ROYALTY OWNER INFORMATION AND WELL BOUNDARIES SHOWN HEREIN 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 HEREIN.
3. ALL INSETS ARE GRID NORTH UNLESS OTHERWISE INDICATED.

LEGEND:

- PROPOSED SURFACE HOLE / BOTTOM HOLE
- EXISTING / PROPOSED WELLHEAD
- LPL★ LANDING POINT LOCATION
- ◡ FLOOD PLAIN
- PUBLIC ROAD
- MULTIPLE ROAD OR RAIL CROSSING
- HAZARD BOUNDARY
- PROPOSED PATH

02/11/2022

WELL OPERATOR: SWN PRODUCTION COMPANY, LLC	WELL (FARM) NAME: BROWNLEE LAND VENTURES BRK	WELL # 6	SERIAL # XXXX
ADDRESS: P.O. BOX 1300 JANE LEW, WY 26378	COUNTY - CODE BROOKE - 009	DISTRICT; WEIRTON	
SURFACE OWNER: BROWNLEE LAND VENTURES LP	USGS 7 1/2 QUADRANGLE MAP NAME WEIRTON, WY		

Latitude: 40°25'00"

SURFACE HOLE 6456'



CIVIL & ENVIRONMENTAL CONSULTANTS, INC.
120 GENESIS BOULEVARD
BRIDGEPORT, WV 26330
304-933-3119

Table with 5 columns: LINE, BEARING, DISTANCE, DESCRIPTION, MONUMENT. Contains data for lines L1 and L2.

HANCOCK COUNTY
BROOKE COUNTY

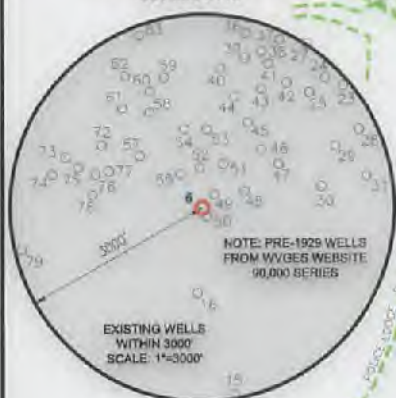
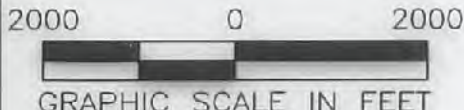


Table with 2 columns: SURFACE HOLE LOCATION (SHL), GEODAPHIC (NAD83), UTM (NAD83, ZONE 17, FEET), UTM (NAD83, ZONE 17, METERS).



WELL RESTRICTIONS

- List of 6 well restrictions including distances from buildings, streams, and other wells.

NOTES ON SURVEY

- Notes on survey including boundaries shown, tax parcel maps, and grid north.

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. 991



Tables for Well Bore Table for Surface Owners and Adjoining Owners Table with columns for Tract, Surface Owner, and Tax Parcel.

COMPANY: SWN Production Company, LLC

Table with well details: (+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS, WVDEP OFFICE OF OIL & GAS, MINIMUM DEGREE OF ACCURACY: 1/2500, SURVEY GRADE GPS OF ELEVATION: (NAVD 88, US FT), OPERATOR'S WELL #: 6, API WELL #: 47 STATE, 009 COUNTY, 00328 PERMIT.

Table with well type and formation details: WELL TYPE: OIL, WASTE DISPOSAL, PRODUCTION, DEEP, GAS, LIQUID INJECTION, STORAGE, SHALLOW; WATERSHED: HARMON CREEK; DISTRICT: WEIRTON; COUNTY: BROOKE; SURFACE OWNER: BROWNLEE LAND VENTURES LP; OIL & GAS ROYALTY OWNER: BROWNLEE LAND VENTURES LP; DRILL, DRILL DEEPER, REDRILL, FRACTURE OR STIMULATE, PLUG OFF OLD FORMATION, PERFORATE NEW FORMATION; CONVERT, PLUG & ABANDON, CLEAN OUT & REPLUG, OTHER CHANGE (SPECIFY) 02/11/2022; TARGET FORMATION: MARCELLUS; ESTIMATED DEPTH: 5,344 TVD TMD.

Table with well operator and designated agent information: WELL OPERATOR: SWN PRODUCTION COMPANY, LLC; ADDRESS: P.O. BOX 1300; CITY: JANE LEW; STATE: WV; ZIP CODE: 26378; DESIGNATED AGENT: BRITTANY WOODY; ADDRESS: P.O. BOX 1300; CITY: JANE LEW; STATE: WV; ZIP CODE: 26378.

Table with legend and revisions: LEGEND: PROPOSED SURFACE HOLE / BOTTOM HOLE, EXISTING / PRODUCING WELLHEAD, EXISTING WATER WELL, EXISTING SPRING, SURVEYED BOUNDARY, DRILLING UNIT, LEASE BOUNDARY, PROPOSED PATH; REVISIONS; DATE: 10-13-2021; DRAWN BY: K.E.S.; SCALE: 1" = 2000'; DRAWING NO: 310-136; WELL LOCATION PLAT.

Longitude: 80°32'30"



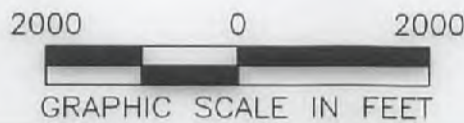
CIVIL & ENVIRONMENTAL CONSULTANTS, INC.
120 GENESIS BOULEVARD
BRIDGEPORT, WV 26330
304-933-3119

LINE	BEARING	DISTANCE	DESCRIPTION	MONUMENT
L1	S 74°18'55" E	3,963.22'	SHL TO LANDMARK	1/2" IRON PIPE FOUND
L2	S 72°02'56" E	3,355.24'	SHL TO LANDMARK	1/2" IRON PIPE FOUND

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



SURFACE HOLE LOCATION (SHL):	
GEOGRAPHIC (NAD83):	
LATITUDE: 40.388148°	
LONGITUDE: -80.564823°	
UTM (NAD83, ZONE 17, FEET):	
NORTHING: 14,868,376.826	
EASTING: 1,761,595.708	
UTM (NAD83, ZONE 17, METERS):	
NORTHING: 4,470,930.198	
EASTING: 5,36,935.446	



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.
4. ALL INSETS ARE GRID NORTH UNLESS OTHERWISE DEPICTED.



NOTE: ANY UTILITIES OR IMPROVEMENTS SHOWN ON THIS PLAT ARE FROM REASONABLE VISUAL OBSERVATIONS. NO UTILITY COMPANIES WERE CONTACTED FOR UTILITY LINE LOCATIONS.

LEGEND:	
	PROPOSED SURFACE HOLE / BOTTOM HOLE
	EXISTING / PRODUCING WELLHEAD
	ABANDONED WELL
	PLUGGED & ABANDONED WELL
	LPLx LANDING POINT LOCATION
	DRILLING UNIT
	LEASE BOUNDARY
	HARDLINE BOUNDARY
	UPP 2 >> UPPER POINT PLEASANT PATH
	MAR 2 >> MARCELLUS PATH
	TPLx TURNING POINT LOCATION

COMPANY:			
OPERATOR'S		BROWNLEE LAND VENTURES BRK	
WELL #:		47-001-00328 6	
DISTRICT:	WEIRTON	COUNTY:	BROOKE
		STATE:	WV
SWN PRODUCTION COMPANY, LLC SURFACE HOLES			
1. "BROWNLEE LAND VENTURES BRK 6"			02/11/2022
REVISIONS:		DATE: 10-13-2021	
		DRAWN BY: K.E.S.	
		SCALE: 1" = 2000'	
		DRAWING NO: 310-136	
		INTERNAL WELL PLAT	

WW-6A1
(5/13)

Operator's Well No. BROWNLEE LAND VENTURES BRK 6H

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

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

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

Lease Name or Number	Grantor, Lessor, etc.	Grantee, Lessee, etc.	Royalty	Book/Page
See Exhibit "A"				

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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: *Bridget Brainerd*
 Its: Landman - SW Appalachia

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EXHIBIT "A"

4700900328

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
Brownlee Land Ventures BRK 6H
Brooke County, West Virginia

#	TMP	LESSOR	LESSEE	ROYALTY	BK/PG
1)	06-00W3-0004-0000	BROWNLEE LAND VENTURES LP, a Limited Partnership, represented herein by Andrea M. Brownlee, Partner of Brownlee Land Ventures, L.P. and as President of Brownlee Land & Cattle Co., General Partner of Brownlee Land Ventures, L.P.	SWN Production Company, LLC	18.00%	52/183

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

Date of Notice Certification: 10/19

API No. 47- 009 -
Operator's Well No. Brownlee Land Ventures BRK 61
Well Pad Name: Brownlee Land Ventures

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>536935.446</u>
County:	<u>009- Brooke</u>		Northing:	<u>4470930.198</u>
District:	<u>Weirton</u>	Public Road Access:	<u>Park Drive</u>	
Quadrangle:	<u>Weirton</u>	Generally used farm name:	<u>Brownlee Land Ventures</u>	
Watershed:	<u>Harmon Creek</u>			

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

Pursuant to West Virginia Code § 22-6A, the Operator has attached proof to this Notice Certification that the Operator has properly served the required parties with the following: *PLEASE CHECK ALL THAT APPLY <input type="checkbox"/> 1. NOTICE OF SEISMIC ACTIVITY or <input checked="" type="checkbox"/> NOTICE NOT REQUIRED BECAUSE NO SEISMIC ACTIVITY WAS CONDUCTED <input checked="" type="checkbox"/> 2. NOTICE OF ENTRY FOR PLAT SURVEY or <input type="checkbox"/> NO PLAT SURVEY WAS CONDUCTED <input checked="" type="checkbox"/> 3. NOTICE OF INTENT TO DRILL or <input type="checkbox"/> NOTICE NOT REQUIRED BECAUSE NOTICE OF ENTRY FOR PLAT SURVEY WAS CONDUCTED or <input type="checkbox"/> WRITTEN WAIVER BY SURFACE OWNER (PLEASE ATTACH) <input checked="" type="checkbox"/> 4. NOTICE OF PLANNED OPERATION <input checked="" type="checkbox"/> 5. PUBLIC NOTICE <input checked="" type="checkbox"/> 6. NOTICE OF APPLICATION		OOG OFFICE USE ONLY <input type="checkbox"/> RECEIVED/ NOT REQUIRED <input type="checkbox"/> RECEIVED <input type="checkbox"/> RECEIVED/ NOT REQUIRED <input type="checkbox"/> RECEIVED <input type="checkbox"/> RECEIVED <input type="checkbox"/> RECEIVED
RECEIVED Office of Oil and Gas OCT 20 2021 WV Department of Environmental Protection		

Required Attachments:

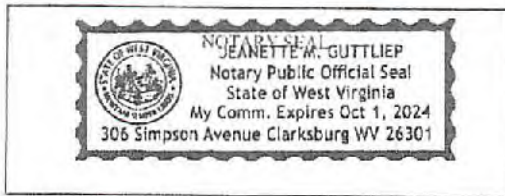
The Operator shall attach to this Notice Certification Form all Notice Forms and Certifications of Notice that have been provided to the required parties and/or any associated written waivers. For the Public Notice, the operator shall attach a copy of the Class II Legal Advertisement with publication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

02/11/2022

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>1300 Fort Pierpont Dr., Suite 201</u>
By:	<u>Brittany Woody</u>		<u>Morgantown, WV 26508</u>
Its:	<u>Senior Regulatory Analyst</u>	Facsimile:	<u>304-884-1690</u>
Telephone:	<u>304-884-1610</u>	Email:	<u>Brittany_Woody@swn.com</u>



Subscribed and sworn before me this 14 day of October 2021
Jeanette M. Guttliet Notary Public
 My Commission Expires 10/01/2024

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 of your personal information, please contact DEP's Chief Privacy Officer at depprivacyofficer@wv.gov.

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WW-6A
(9-13)

API NO. 47-609 **4700900328**
OPERATOR WELL NO. Brownlee Land Ventures RR#
Well Pad Name: Brownlee Land Ventures

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

Notice of:

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

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Office of Oil and Gas
OCT 20 2021
WV Department of
Environmental Protection

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: Brownlee Land Ventures ✓
Address: PO Box 51
West Middletown PA 15379
Name: _____
Address: _____

COAL OWNER OR LESSEE
Name: Brownlee Land Ventures ✓
Address: PO Box 51
West Middletown PA 15379
 COAL OPERATOR
Name: _____
Address: _____

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

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

SURFACE OWNER(s) (Impoundments or Pits)
Name: _____
Address: _____

OPERATOR OF ANY NATURAL GAS STORAGE FIELD
Name: _____
Address: _____

*Please attach additional forms if necessary

02/11/2022

Notice is hereby given:

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

This Notice Shall Include:

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

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

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

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

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

Well Location Restrictions

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

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

Water Well Testing:

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

Water Testing Laboratories:

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

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

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

Written Comment:

Pursuant to West Virginia Code § 22-6A-11(a), all persons described in subsection (b), section ten of this article may file written comments with the secretary as to the location or construction of the applicant's proposed well work within thirty days after the application is filed with the secretary. All persons described in West Virginia Code § 22-6A-10(b) may file written comments as to the location or construction of the applicant's proposed well work to the Secretary at:

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

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.

WW-6A
(8-13)

API NO. 47-009 - 00328
OPERATOR WELL NO. Brownlee Land Ventures, DBA
Well Pad Name: Brownlee Land Ventures

Notice is hereby given by:

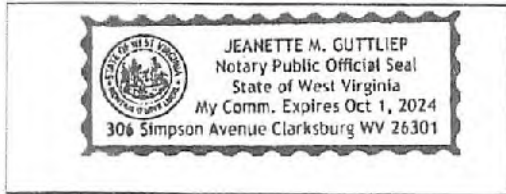
Well Operator: SWN Production Co., LLC
Telephone: 304-884-1610
Email: Brittany_Woody@swn.com

Brittany Woody

Address: 1300 Fort Pierpont Dr., Suite 201
Morgantown, WV 26508
Facsimile: 304-884-1690

Oil and Gas Privacy Notice:

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



Subscribed and sworn before me this 14 day of October 2021
Jeanette M. Guttliet Notary Public
My Commission Expires 10/01/2024

RECEIVED
Office of Oil and Gas
OCT 20 2021
WV Department of
Environmental Protection

02/11/2022

WW-6A3
(1/12)Operator Well No. Brownlee Land Ventures

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: 9/16/2021 **Date of Planned Entry:** 9/23/2021

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: Brownlee Land Ventures LP ✓
 Address: PO Box 51
West Middletown, PA 15379

Name: _____
 Address: _____

Name: _____
 Address: _____

COAL OWNER OR LESSEE

Name: Brownlee Land Ventures LP ✓
 Address: PO Box 51
West Middletown, PA 15379

MINERAL OWNER(s)

Name: Brownlee Land Ventures LP ✓
 Address: PO Box 51
West Middletown, PA 15379

*please attach additional forms if necessary

Notice is hereby given:

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

State: West Virginia
 County: Brooke
 District: Weirton
 Quadrangle: Weirton

Approx. Latitude & Longitude: 40.388219, -80.564892
 Public Road Access: Park Drive
 Watershed: Harmon Creek
 Generally used farm name: Brownlee

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

Notice is hereby given by:

Well Operator: SWN PRODUCTION COMPANY, LLC
 Telephone: 304-884-1810
 Email: Brittany_Woody@swn.com

Address: 1300 Fort Pierpont Dr., Suite 201
Morgantown, WV 26508
 Facsimile: 304-884-1690

Oil and Gas Privacy Notice:

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

02/11/2022

**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: 09/23/2021 **Date Permit Application Filed:** 10/18

RECEIVED
Office of Oil and Gas

OCT 20 2021

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

WV Department of
Environmental Protection

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: Brownlee Land Ventures
Address: P.O. Box 51
West Middletown, PA 15379

Name: Brownlee Land Ventures
Address: P.O. Box 51
West Middletown, PA 15379

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: 4,470,930.188
County: Brooke Northing: 536,935.446
District: Weirton Public Road Access: Park Drive
Quadrangle: Weirton Generally used farm name: Brownlee Land Ventures BRK
Watershed: Harmon Creek

This Notice Shall Include:

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

Notice is hereby given by:

Well Operator: SWN Production Company, LLC
Address: P.O. Box 1300
Jane Lew, WV 26378
Telephone: 304-884-1875
Email: Justin_Booth@swn.com
Facsimile: _____

Authorized Representative: Justin Booth
Address: 1300 Fort Pierpont Drive, Suite 201
Morgantown, WV 26508
Telephone: 304-884-1675
Email: Justin_Booth@swn.com
Facsimile: _____

Oil and Gas Privacy Notice:

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

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

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

Date of Notice: 08/23/2021 Date Permit Application Filed: 10/18

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

CERTIFIED MAIL RETURN RECEIPT REQUESTED HAND DELIVERY

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

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

Name: Brownlee Land Ventures
Address: P.O. Box 51
West Middleton, PA 15379

Name: Brownlee Land Ventures
Address: P.O. Box 51
West Middleton, PA 15379

Notice is hereby given:

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

State: West Virginia UTM NAD 83 Easting: 4,470,930.198
County: Brooke Northing: 536,935.446
District: Weirton Public Road Access: Park Drive
Quadrangle: Weirton Generally used farm name: Brownlee Land Ventures BRK
Watershed: Harmon Creek

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 57th Street, SE, Charleston, WV 25304 (304-926-0450) or by visiting www.dep.wv.gov/oil-and-gas/pages/default.aspx.

Well Operator: SWN Production Company, LLC
Telephone: 304-884-1675
Email: Justin_Booth@swn.com

Address: P.O. Box 1300
Jane Lew, WV 26376
Facsimile: _____

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 depprivacvofficer@wv.gov.



4700900328

WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
Division of Highways

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

D. Alan Reed, P.E.
State Highway Engineer

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

September 21, 2021

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

Subject: DOH Permit for the Brownlee Land Ventures Pad, Brooke County

Brownlee Land Ventures BRK 6H Well Site

Dear Mr. Martin,

This well site will be accessed from a DOH permit #06-2021-0459 which has been issued to Southwestern Energy for access to the State Road for a well site located off Brooke County Route 13/1 SLS MP 0.09.

This operator is in compliance with §22-6A-20 of the WV Code. Operator has signed a STATEWIDE OIL AND GAS ROAD MAINTENANCE BONDING AGREEMENT and provided the required Bond. This operator is currently in compliance with the DOH OIL AND GAS POLICY dated October 1, 2018. This letter is valid for permitting purposes for one year from the date of this letter.

Very Truly Yours,

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

RECEIVED
Office of Oil and Gas
OCT 20 2021

RECEIVED
Office of Oil and Gas
OCT 20 2021
WV Department of
Environmental Protection

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

02/11/2022

Attachment VI Frac Additives

Product Name	Product Use	Chemical Name	CAS Number
Al-303 (U.S. Well Services)	Mixture	Ethylene glycol	107-21-1
		Cinnamaldehyde	104-55-2
		Butyl cellosolve	111-76-2
		Formic acid	64-18-6
		Polyether	Proprietary
		Acetophenone, thiourea, formaldehyde polymer	68527-49-1
AP ONE (U.S. Well Services)	Breaker	Ammonium persulfate	7727-54-0
Bactron K-139 (Champion Technologies)	Biocide	Glutaraldehyde	111-30-8
		Quaternary Ammonium Compounds, Benzyl-C12-15-Alkyldimethyl, Chlorides	68424-85-1
		Ethanol	64-17-5
Bactron K-219 (Champion Technologies)	Biocide	Methanol	67-56-1
		Quaternary Ammonium Compounds, Benzyl-C12-15-Alkyldimethyl, Chlorides	68424-85-1
CarboNRT	Tracer	Ceramic Proppant	66402-68-4
EC6486A (Nalco Champion)	Scale inhibitor	Amlne Triphosphate	Proprietary
		Ethylene Glycol	107-21-1
EC6734A (Champion Technologies)	Biocide	Hydrogen Peroxide	7722-84-1
		Acetic Acid	64-19-7
		Peroxyacetic Acid	79-21-0
Ecano-C1200 (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
FDP-S1176-15 (Halliburton)	Friction Reducer	Polyacrylate	Proprietary
		Hydrotreated light petroleum distillate	64742-47-8
FLOJET DR900 LPP (SWN Well Services)	Friction Reducer	Distillates (petroleum) hydrotreated light	64674-47-8
		Ethylene Glycol	107-21-1
		Alcohols, C12-16, Exoxylated propoxylated	68213-24-1
		Fatty Alcohols ethoxylated	Proprietary
		Water	7732-18-5
FLOJET DRP 1130X (SWN Well Services)	Friction Reducer	Proprietary	Proprietary
FR-76 (Halliburton)	Friction Reducer	Hydrotreated light petroleum distillate	64742-47-8
		Inorganic Salt	Proprietary
GYPTRON T-390 (Champion Technologies)	Scale Inhibitor	Methanol	67-56-1
		Nonylphenol Ethoxylate	Proprietary
HAI-150E (Halliburton)	Corrosion Inhibitor	No hazardous substance	N/A
HCL (SWN Well Services)	Hydrochloric Acid	Hydrochloric Acid	7647-01-0
		Water	7732-18-5
LP-55 MC (Halliburton)	Scale Inhibitor	Organic phosphonate	Proprietary
		Ammonium Chloride	12125-02-9
OPTI-FLEX (U.S. Well Services)	Viscosifying Agent	Distillates, petroleum, hydrotreated light	64742-47-8
Plexslic 930	Friction Reducer	Copolymer of 2-propenamide	Proprietary
		Hydrotreated Distillate	64742-47-8
		Sodium Chloride	7647-14-5
		Alcohols, C12-16, Exoxylated	68551-12-2
		Oleic Acid Diethanolamide	93-83-4
Plexslic 958	Friction Reducer	Ammonium Chloride	12125-02-9
		Petroleum Distillate	64742-47-8
		Sodium Chloride	7647-14-5
		Ammonium Chloride	12125-02-9
		N,N-bis (2-hydroxyethyl) oleamide	93-83-4
Plexslic 957	Friction Reducer	Petroleum Distillate	64742-47-8
		Ammonium Chloride	12125-02-9
		Oleic Acid Diethanolamide	93-83-4
		Alcohols, C12-16, Exoxylated	68551-12-2
		Water	7732-15-5
WFRA-2000 (U.S. Well Services)	Anionic Friction Reducer	Hydrotreated light distillate (petroleum)	64742-47-8
		Propenoic acid, polymer with propenamide	9003-06-9
Plexslic 655 NM	Scale Inhibitor	Diethylenetriamine penta (methylene phosphonic acid)	15827-30-8
Plexslic 922	no data available	Copolymer of 2-propenamide	69418-26-1
		Distillates (petroleum), hydrotreated light	64742-47-8
		Ammonium chloride ((NH4)Cl)	12125-02-9
		Oleic Acid Diethanolamide	93-83-4
Telcide PS50A	Biocidal product	Tetrakis (hydroxymethyl) phosphonium sulphate	55566-30-8
		Acrylic acid terpolymer containing carboxylate phosphonate and sulfonate groups	397256-50-7
LD-2950	Friction Reducer	Hydrotreated light petroleum distillate	64742-47-8
		Ethoxylated alcohol	Proprietary
Legend LD-7750W	Scale Control	Poly (oxy-1,2-ethanediyl) alpha.-tridecyl-.omega.-hydroxy-, branched	59011-36-5
		Methanol	67-56-1
MC MX 8-4743	Specialty Product	Phosphonic Acid Salt	Proprietary
		Sodium Nitrate	7632-48-2

APPROVED
WVDEP OOG

2/8/2022

BROWNLEE WELL PAD PERMIT AND CONSTRUCTION DRAWINGS SWN PRODUCTION COMPANY, LLC

LAT/LONG: N 40.387635° W -80.559537°
(APPROXIMATE CENTER OF PROJECT)

SHEET INDEX

- | | |
|-------------------------------------|------------------------------------|
| 1. COVER SHEET | 16. WELL PAD SUBGRADE GRADING PLAN |
| 2. GENERAL NOTES AND SPECIFICATIONS | 17. ACCESS ROAD PROFILE |
| 3. MATERIAL QUANTITIES | 18. ACCESS ROAD PROFILE |
| 4. BORING LOGS | 19. ACCESS ROAD CROSS SECTIONS |
| 5. BORING LOGS | 20. WELL PAD CROSS SECTIONS |
| 6. SITE SAFETY PLAN | 21. AUXILIARY PAD CROSS SECTIONS |
| 7. SITE SAFETY PLAN | 22. DETAILS |
| 8. EXISTING CONDITIONS PLAN | 23. DETAILS |
| 9. OVERALL GRADING AND LAYOUT PLAN | 24. DETAILS |
| 10. GRADING AND LAYOUT PLAN | 25. DETAILS |
| 11. GRADING AND LAYOUT PLAN | 26. DETAILS |
| 12. GRADING AND LAYOUT PLAN | 27. DETAILS |
| 13. GRADING AND LAYOUT PLAN | 28. DETAILS |
| 14. CUTFILL MAP | 29. DETAILS |
| 15. WELL PAD FINISHED GRADING PLAN | 30. RECLAMATION PLAN |

SITE LOCATIONS	NSRS11.WV-NF (NORTH ZONE)		UTM83-17 (FEET)	
	LATITUDE	LONGITUDE	NORTHING	EASTING
ACCESS ROAD ENTRANCE	40.386479	-80.552784	68864.23	1675216.77
CENTROID OF WELL PAD	40.388219	-80.564892	689537.64	1671851.35

L.O.D. AREAS	
DESCRIPTION	ACRES
ACCESS ROAD	10.94
WELL PAD, AUXILIARY PAD AND BMPs	11.77
TOPSOIL STOCKPILES	3.39
TOTAL	26.10

THE ENTIRE LOD IS THE BROWNLEE LAND VENTURES, LP PROPERTY (DEED BOOK 209 PAGE 81/)



LOCATION MAP

WEIRTON 7.5' QUADRANGLE MAP, 2019

SCALE IN FEET

1 INCH = 1000 FEET

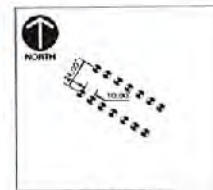


VICINITY MAP

BROOKE COUNTY ROAD MAP

SCALE IN FEET

1 INCH = 2000 FEET



WELL HEAD LAYOUT
10' DIAM - 1' DEPT

WELL RESTRICTIONS CHECKLIST	
AT LEAST 100 FEET FROM PAD AND LID (INCLUDING ANY ELS CONTROL FEATURE) TO ANY EXISTING, STORAGE LAKE, POND, RESERVOIR OR WETLAND	YES
AT LEAST 30 FEET FROM PAD AND LID (INCLUDING ANY ELS CONTROL FEATURE) TO ANY NATURALLY PRODUCING MOUNTAIN STREAM	YES
AT LEAST 100 FEET FROM PAD AND LID (INCLUDING ANY ELS CONTROL FEATURE) TO ANY GROUNDWATER INTAKE OR PUBLIC WATER SUPPLY	YES
AT LEAST 750 FEET FROM ANY EXISTING WATER WELL OR DEVELOPED SPRING TO WELL HEADS/PILES	YES
AT LEAST 400 FEET FROM AN OCCUPIED DWELLING STRUCTURE TO CENTER OF PAD	YES
AT LEAST 50 FEET FROM AN OCCUPIED BUILDING LARGER THAN 500 SQUARE FEET TO THE CENTER OF THE PAD	YES

LOCAL EMERGENCY SERVICES		
	NAME	TELEPHONE NO.
AMBULANCE		911
HOSPITAL EMERGENCY ROOM	WEIRTON MEDICAL CENTER	304.737.6000
FIRE DEPARTMENT		911
POLICE DEPARTMENT		911
POISON CONTROL CENTER	WEST VIRGINIA POISON CENTER	(800) 222-1222

FLOOD PLAN CONDITIONS	
DO SITE CONSTRUCTION ACTIVITIES TAKE PLACE IN FLOODPLAIN	NO
PERMIT NEEDED FROM COUNTY FLOODPLAIN COORDINATOR	NO
FED-RAS STUDY COMPLETED	N/A
FLOODPLAIN SHOWN ON DRAWINGS	N/A
FIRM MAP NUMBER(S) FOR SITE	164000011R
ACRAGE OF CONSTRUCTION IN FLOODPLAIN	0.00 AC

PROJECT OWNERS/CLIENT
SWN PRODUCTION COMPANY, LLC
1300 FORT PERKINS DRIVE, SUITE 201
MORGANTOWN, WV 26508
P.O. BOX 184, YORK
CONTACT: KALAB TAYLOR

WVDEP
DISTRICT SIX
PH: (304) 643-4300
CONTACT: DISTRICT ENGINEER
TONY CLARK

CIVIL ENGINEER
CONSULTANTS, INC.
333 BALDWIN ROAD
PITTSBURGH, PA 15205
PH: (412) 452-2328
CONTACT: BRIAN LAHTZ, P.E.

STATE ENGINEER
WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION (WVDEP)
PH: (304) 643-3024

NATIONAL RESPONSE CENTER
PH: (800) 424-6822



PLAN REPRODUCTION WARNING
THE PLANS HAVE BEEN CREATED ON A 22" X 34" SHEET. FOR REDUCTIONS, REFER TO GRAPHIC SCALE.
THE PLANS HAVE BEEN CREATED FOR FULL COLOR PLOTTING. ANY SET OF THE PLANS THAT IS NOT PLOTTED IN FULL COLOR SHALL NOT BE CONSIDERED ADEQUATE FOR CONSTRUCTION PURPOSES.
WARNING - INFORMATION MAY BE LOST IN COPYING AND/OR SHALL SCALE PLOTTING.

REVISION RECORD

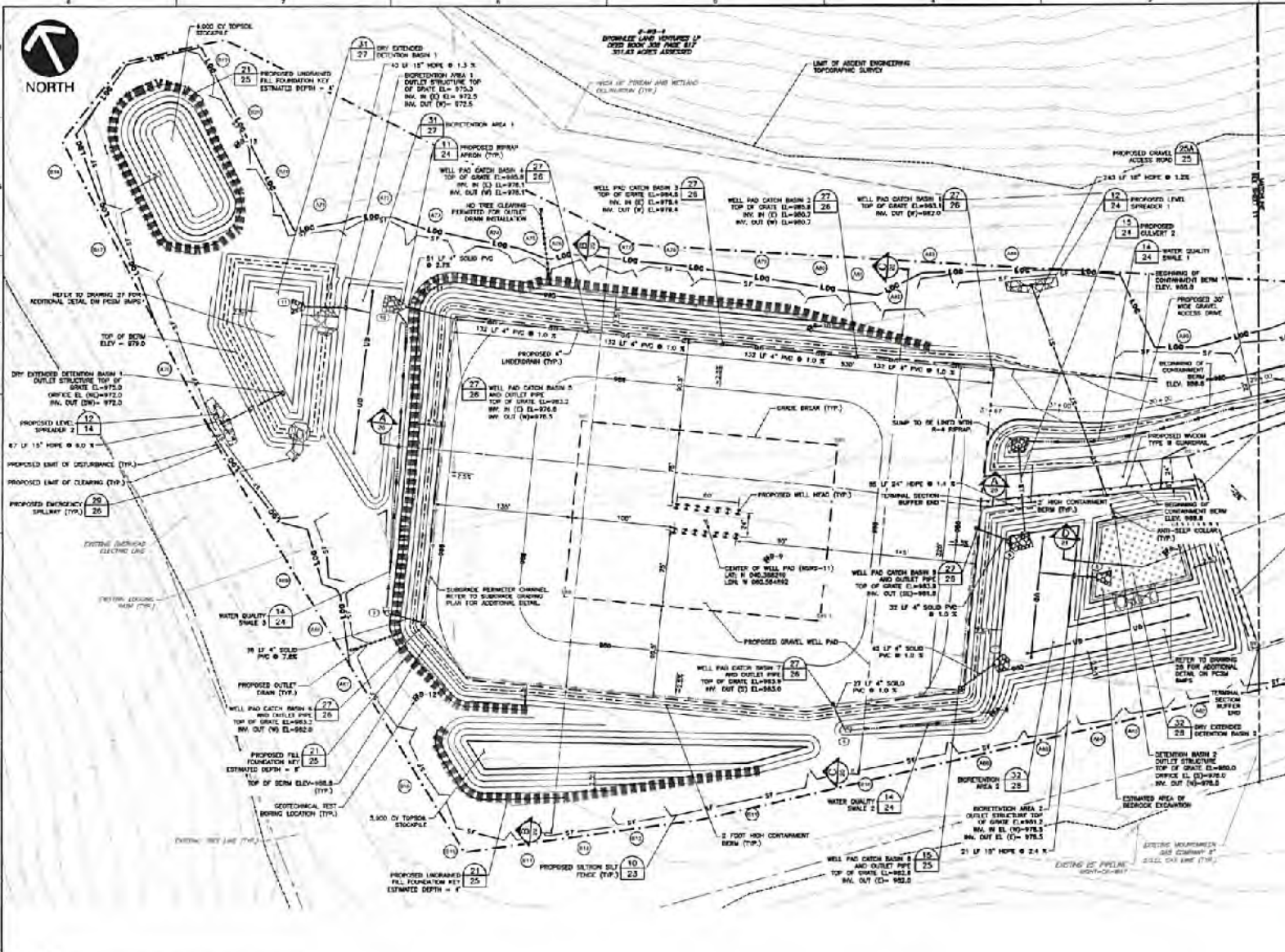
SWN PRODUCTION COMPANY, LLC
BROWNLEE WELL PAD
CITY OF WEIRTON
BROOKE COUNTY, WEST VIRGINIA

Civil & Environmental Consultants, Inc.
333 Baldwin Road - Pittsburgh, PA 15205
412-452-2328 - 800-356-2324
www.cesinc.com

COVER SHEET

DATE: 02/08/2022
DRAWN BY: J. LAHTZ
CHECKED BY: J. LAHTZ
APPROVED BY: J. LAHTZ





LEGEND

	SURVEYED PROPERTY LINE
	EXISTING TAX PARCEL LINE
	EXISTING EDGE OF GRAVEL
	EXISTING EDGE OF PAVEMENT
	EXISTING STREAM
	EXISTING TREE LINE
	EXISTING OVERHEAD ELECTRIC LINE
	STREAM AND WETLAND DELINEATION BOUNDARY
	EXISTING FENCE LINE
	EXISTING GAS LINE
	EXISTING GAS LINE RIGHT-OF-WAY
	EXISTING CATCH BASIN
	EXISTING INLET/OUTLET
	EXISTING INTERMEDIATE CONTOUR
	LIMIT OF TOPOGRAPHIC SURVEY
	EXISTING STRUCTURE
	PROPOSED INDEX CONTOUR
	PROPOSED INTERMEDIATE CONTOUR
	PROPOSED SPOT ELEVATION
	PROPOSED EDGE OF GRAVEL PADS
	PROPOSED EDGE OF ACCESS ROAD
	PROPOSED GAS WELL
	PROPOSED BASE
	PROPOSED ASPHALT PAVEMENT
	PROPOSED SUBGRADE
	PROPOSED LIMIT OF DISTURBANCE
	PROPOSED STABILIZED CONSTRUCTION ENTRANCE
	PROPOSED STATION SET FENCE
	PROPOSED CHANNEL
	PROPOSED LEVEL SPREADER
	PROPOSED STORM PIPE
	PROPOSED CONTAINMENT BERM
	PROPOSED RIPRAP APRON
	PROPOSED UNDERDRAIN
	PROPOSED EMERGENCY SPILLWAY
	PROPOSED SUBGRADE PREMIER CHANNEL
	RIPRAP APRON
	SWIFFER ID
	TEST BOARD LOCATION
	CROSS SECTION LOCATION
	PROPOSED KEY DRAIN WITH FLOW DIRECTION
	PROPOSED FILL FOUNDATION KEY
	PROPOSED INTERMEDIATE KEY
	PROPOSED OUTLET DRAIN
	ESTIMATED AREA OF BEDROCK EXPOSURE

- REFERENCE**
- EXISTING CONTOURS AND FEATURES WITHIN THE AREA INDICATED PROVIDED BY ASCENT ENGINEERING & CONSULTING TO DEC, INC. ON 1/11/2021. EXISTING CONTOURS BEYOND THIS LIMIT OBTAINED FROM PUBLICLY AVAILABLE WEST VIRGINIA STATE GIS DATA CLEARING MODEL, ACCESSIBLE FEBRUARY 2021.
 - STREAM AND WETLAND INVESTIGATION COMPLETED BY ASCENT ENGINEERING & CONSULTING RESULTS SHOWN HEREIN PROVIDED TO DEC, INC. ON 1/8/2021.
 - SURVEYED PROPERTY LINES BASED ON FIELD SURVEY COMPLETED BY DEC, INC. JANUARY 2021.
 - MOUNTAINER SAC COMPANY PERMITS RIGHT OF WAY INFORMATION PROVIDED BY MOUNTAINER SAC COMPANY ON 3/23/2021.

BARRIER ID TABLE

NO.	DESCRIPTION
1	14\"/>
2	21\"/>
3	24\"/>

APPROVED WVDEP OOG
2/8/2022

SCALE IN FEET
0 20 40 60 80



REVISION RECORD

NO.	DATE	DESCRIPTION

SWN PRODUCTION COMPANY, LLC
BROWNLEE WELL PAD
CITY OF WEIRTON
BROOKE COUNTY, WEST VIRGINIA

Civil & Environmental Consultants, Inc.
333 Baldwin Road Pittsburgh, PA 15225
412-422-2324 1-800-385-2324
www.civil.com

SWN PRODUCTION COMPANY, LLC
BROWNLEE WELL PAD
CITY OF WEIRTON
BROOKE COUNTY, WEST VIRGINIA

GRADING AND LAYOUT PLAN
DATE: APRIL 2021 (REVISED BY: [Signature])
SCALE: 1"=40' (AS SHOWN)
PROJECT NO.: [Number]
DRAWN BY: [Name]
CHECKED BY: [Name]

DRAWING NO. **13**
SHEET 13 OF 38

BROWNLEE WELL PAD PERMIT AND CONSTRUCTION DRAWINGS SWN PRODUCTION COMPANY, LLC

LAT/LONG: N 40.387635° W -80.559537°
(APPROXIMATE CENTER OF PROJECT)

SHEET INDEX

1. COVER SHEET	13. WELL PAD SUBGRADE GRADINGS PLAN
2. GENERAL NOTES AND SPECIFICATIONS	17. ACCESS ROAD PROFILE
3. MATERIAL QUANTITIES	18. ACCESS ROAD CROSS SECTIONS
4. BORING LOGS	19. ACCESS ROAD CROSS SECTIONS
5. BORING LOGS	20. WELL PAD CROSS SECTIONS
6. SITE SAFETY PLAN	21. AUXILIARY PAD CROSS SECTIONS
7. SITE SAFETY PLAN	22. DETAILS
8. EXISTING CONDITIONS PLAN	23. DETAILS
9. OVERALL GRADING AND LAYOUT PLAN	24. DETAILS
10. GRADING AND LAYOUT PLAN	25. DETAILS
11. GRADING AND LAYOUT PLAN	26. DETAILS
12. GRADING AND LAYOUT PLAN	27. DETAILS
13. GRADING AND LAYOUT PLAN	28. DETAILS
14. CUT/FILL MAP	29. DETAILS
15. WELL PAD FINISHED GRADING PLAN	30. RECLAMATION PLAN

LOCAL EMERGENCY SERVICES

	NAME	TELEPHONE NO.
AMBULANCE		911
HOSPITAL EMERGENCY ROOM	WEIRTON MEDICAL CENTER	304-797-6000
FIRE DEPARTMENT		911
POLICE DEPARTMENT		911
POISON CONTROL CENTER	WEST VIRGINIA POISON CENTER	800-222-1222

FLOOD PLAIN CONDITIONS

DO SITE CONSTRUCTION ACTIVITIES TAKE PLACE IN FLOODPLAIN	NO
PERMIT NEEDED FROM COUNTY FLOODPLAIN COORDINATOR	NO
FLOOD STUDY COMPLETED	N/A
FLOODPLAIN SHOWN ON DRAWINGS	N/A
FIRM MAP NUMBER(S) FOR SITE	5420001148
ACREAGE OF CONSTRUCTION IN FLOODPLAIN	0.00 AC

PROJECT OWNER/APPLICANT
SWN PRODUCTION COMPANY, LLC
1300 FORT BELFLOUNT DRIVE, SUITE 201
MORGANTOWN, WV 26505
PH: (304) 854-1898
CONTACT: KALAB TAYLOR

CIVIL ENGINEER
CIVIL & ENVIRONMENTAL CONSULTANTS, INC.
333 SALDWIN ROAD
PITTSBURGH, PA 15205
PH: (412) 457-2334
CONTACT: BRIAN LAVITZ, P.E.

WVDEP
DISTRICT SIX
PH: (304) 842-4000
CONTACT: DISTRICT ENGINEER TONY CLARK

SPILL HOTLINE
WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION (WVDEP)
PH: (800) 642-0074

NATIONAL RESPONSE CENTER
PH: (800) 424-8902



LOCATION MAP
WEIRTON 7.5 QUADRANGLE MAP, 2019
SCALE IN FEET
1 INCH = 1000 FEET

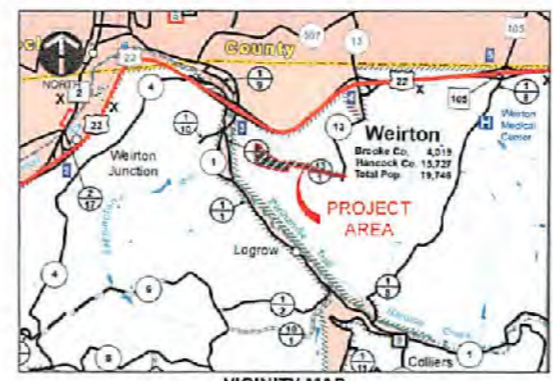
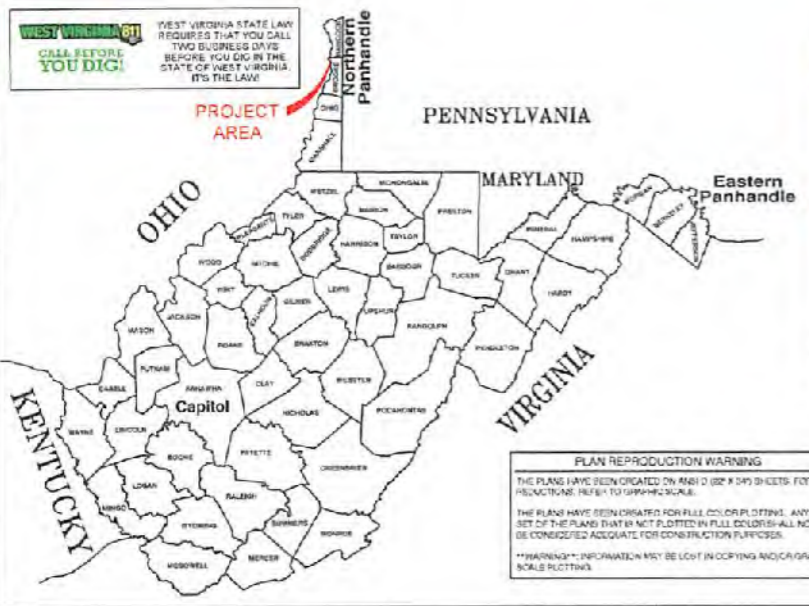
LOCATION COORDINATES

SITE LOCATIONS	NSRS11.WV-WF (NORTH ZONE)		UTMB3-17 (FEET)	
	LATITUDE	LONGITUDE	NORTHING	EASTING
ACCESS ROAD ENTRANCE	40.389479	-80.552784	688864.23	1675216.77
CENTROID OF WELL PAD	40.388219	-80.564892	689537.84	1671851.35

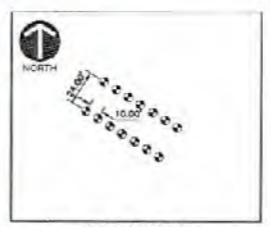
L.O.D. AREAS

DESCRIPTION	ACRES
ACCESS ROAD	10.64
WELL PAD, AUXILIARY PAD AND BMP'S	11.77
TOPSOIL STOCKPILES	3.39
TOTAL	26.10

THE ENTIRE LOD IS THE BROWNLEE LAND VENTURES, LP PROPERTY (DEED BOOK 308 PAGE 317).



VICINITY MAP
BROOKE COUNTY ROAD MAP
SCALE IN FEET
1 INCH = 3000 FEET



WELL HEAD LAYOUT
100' - DIAMETER

WELL RESTRICTIONS CHECKLIST

AT LEAST 100 FEET FROM FAC AND LOD INCLUDING ANY EAS CONTROL FEATURES TO ANY PERSONAL STREAM (AGE, ROAD, RESERVOIR OR WETLAND)	YES
AT LEAST 100 FEET FROM FAC AND LOD INCLUDING ANY EAS CONTROL FEATURES TO ANY NATURALLY PRODUCING TROUT STREAM	YES
AT LEAST 100 FEET FROM FAC AND LOD INCLUDING ANY EAS CONTROL FEATURES TO ANY GRANDPARENT IN TIME OR PUBLIC WATER SUPPLY	YES
AT LEAST 250 FEET FROM AN EXISTING WATER WELL OR DEVELOPED SPRING TO WELL BEING DRILLED	YES
AT LEAST 100 FEET FROM AN OCCUPIED DWELLING STRUCTURE TO CENTER OF PAD	YES
AT LEAST 100 FEET FROM AGRICULTURAL OR BUSINESS LARGER THAN 2500 SQUARE FEET TO THE CENTER OF THE PAD	YES

PLAN REPRODUCTION WARNING
THE PLANS HAVE BEEN CREATED ON ANSI D (24 X 36) SHEETS FOR PRODUCTIONS. PLEASE USE GRAPHICALLY.
THE PLANS HAVE BEEN CREATED FOR FULL COLOR PLOTTING. ANY SET OF THE PLANS THAT IS NOT PLOTTED IN FULL COLOR IS NOT BE CONSIDERED ADEQUATE FOR CONSTRUCTION PURPOSES.
WARNING: INFORMATION MAY BE LOST IN COPYING AND/OR GRAY SCALE PLOTTING.

REVISION RECORD

Civil & Environmental Consultants, Inc.
333 Baldwin Road - Pittsburgh, PA 15205
412-429-2324 - 800-535-0274
www.james.com

SWN PRODUCTION COMPANY, LLC
BROWNLEE WELL PAD
CITY OF WEIRTON
BROOKE COUNTY, WEST VIRGINIA

COVER SHEET

DATE: APRIL 2021
DRAWN BY: [Name]
CHECKED BY: [Name]
PROJECT NO.: [Number]
APPROVAL BY: [Signature]

COPYING NO.: **1**

SHEET 1 OF 30

B.S. 10-12-21



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