



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

Friday, December 10, 2021
WELL WORK PLUGGING PERMIT
Horizontal Plugging

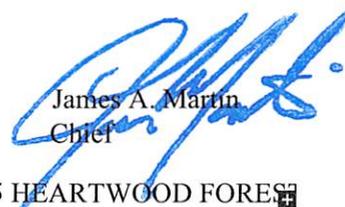
SWN PRODUCTION COMPANY, LLC
POST OFFICE BOX 12359
SPRING, TX 773914954

Re: Permit approval for 832255 HEARTWOOD FORESTLAND FUND
47-085-09891-00-00

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.

Upon completion of the plugging well work, the above named operator will reclaim the site according to the provisions of WV Code 22-6-30. Please be advised that form WR-38, Affidavit of Plugging and Filling Well, 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: 832255 HEARTWOOD FORESTLAND
Farm Name: HEARTWOOD FORESTLAND
U.S. WELL NUMBER: 47-085-09891-00-00
Horizontal Plugging
Date Issued: 12/10/2021

PERMIT CONDITIONS

West Virginia Code § 22-6-11 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. All pits must be lined with a minimum of 20 mil thickness synthetic liner.
2. In the event of an accident or explosion causing loss of life or serious personal injury in or about the well or while working on the well, the well operator or its contractor shall give notice, stating the particulars of the accident or explosion, to the oil and gas inspector and the Chief within twenty-four (24) hours.
3. Well work activities shall not constitute a hazard to the safety of persons.

WW-4B
Rev. 2/01

1) Date 11/18/21, 2021
2) Operator's
Well No. Heartwood Forestland Fund 3
3) API Well No. 47-005 - 02691

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

APPLICATION FOR A PERMIT TO PLUG AND ABANDON

- 4) Well Type: Oil ___ / Gas x / Liquid injection ___ / Waste disposal ___ /
(If "Gas, Production x or Underground storage ___) Deep ___ / Shallow ___
- 5) Location: Elevation 907' Watershed Indian Creek
District Murphy County Ritchie Quadrangle Harrisville
- 6) Well Operator SWN Production Company, LLC 7) Designated Agent Brittany Woody
Address 1300 Fort Pierpont Dr., Suite 201 Address 1300 Fort Pierpont Dr., Suite 201
Morgantown, WV 26508 Morgantown, WV 26508
- 8) Oil and Gas Inspector to be notified 9) Plugging Contractor
Name Doug Newlon Name NA
Address Inspector Supervisor Address _____

10) Work Order: The work order for the manner of plugging this well is as follows:

See Attachment for 5 1/2" PRODUCTION CASING

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Office of Oil and Gas

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WV Department of
Environmental Protection

Notification must be given to the district oil and gas inspector 24 hours before permitted work can commence.

Work order approved by inspector Doug Newlon Date 11-12-2021

12/10/2021

5 1/2" PRODUCTION CASING

Well Info:

Well Name – Heartwood Forestland Fund 3
API – 47-085-09891
Location – 39.12939, -81.10222
Elevation – 907 ft
Well Casing Record –

Casing Size	Casing Depth	Cement Data
20" conductor	100 ft	Unknown
13-3/8" surface	339 ft	Type 1, 1.26 ft ³ /sack 64 bbls pumped (285 sacks) (20 bbls returned to surface)
9-5/8" intermediate	2311 ft	Type 1, 1.19 ft ³ /sack 185 bbls pumped (868 sacks) (45 bbls returned to surface)
5-1/2" <i>intermediate2 PRODUCTION</i>	6114 ft	Class H, 1.18 ft ³ /sack 147 bbls pumped (701 sacks) (TOC@4480' per CBL)

Perforations –

- 5945' – 5947'

Purpose:

Provide a procedure for safely and effectively plugging & abandoning a well.

Scope:

This procedure pertains to all SWN Production Company, LLC (SWN) personnel and third parties involved in or near the following procedure on a SWN location in the SW Appalachia Division.

HSE:

- Must wear 4-Gas Monitor at all times, powered on, and calibrated up to date
- Complete JSEA, LOTO, and Hot Work documents as needed
- Follow proper PPE requirements per "2015 HSE Handbook". Verify pressure control equipment integrity
- Always express STOP work authority if deemed necessary
- Hold pre-job safety meeting

Responsibilities:

Production Engineer(s) – Responsible for providing a working procedure specified for the well that the work is being performed on. Responsible for coordinating work and seeing that it is finished in a timely manner.

Procedure for Setting Downhole Plug:

1. Verify all HSE requirements are understood and followed.
2. Verify proper documentation is included in working procedure.
3. Check for pressure on 5-1/2" casing and bleed off as necessary.
4. NU to outer casing valve to fill the hole with produced water and continue to monitor and keep the hole full of fluid as work progresses.
5. ND 2-1/16" gate valve and tubinghead adaptor flange.
6. MIRU plugging rig with JU head and 7-1/16" frac valve. Remove BPV and pull tubing hanger.
7. **Perf Plug:** TIH work string to 5977 ft, tag CIBP and pick up work string 2 ft. Pump tubing capacity, pump 32 bbls of 6% gel, spot cement plug from 5977 ft - 5727 ft (28 sacks Class A, with added celloflake at 1/4 lb/sk). TOOH work string to 4000 ft, WOC and flush tubing to ensure cement is clear of pipe.
8. Check TOC @ 5727 ft, reset plug if needed, if not then TOOH work string.
9. Check for pressure on 9-5/8" casing and bleed off as necessary.
10. Find free point on 5-1/2" casing and cut/shoot casing (previous operator ran CBL and picked TOC @ 4480'). POOH 5-1/2" casing.
11. **Casing cut plug1:** TIH work string to 4530 ft (or 50 ft below casing cut depth), pump 129 bbls of 6% gel, then spot cement plug from 4530 ft - 4225 ft (115 sacks Class A). TOOH work string to 2500 ft, WOC and flush tubing to ensure cement is clear of pipe.
12. Check TOC @ 4225 ft, reset plug if needed, if not then TOOH work string to 2775 ft.
13. **Casing cut plug2:** At 2775 ft, pump 95 bbls of 6% gel, then spot cement plug from 2775 ft - 2211 ft (235 sacks Class A). TOOH work string to 500 ft, WOC and flush tubing to ensure cement is clear of pipe.
14. Check TOC @ 2211 ft, reset plug if needed, if not then TOOH work string to 960 ft.
15. **Elevation plug:** At 960 ft, pump 42 bbls of 6% gel, then spot cement plug from 960 ft - 695 ft (97 sacks Class A).
16. **Surface plug:** TOOH work string to 150 ft, spot cement plug from 150 ft - surface (56 sacks Class A).
17. TOOH work string, top off well with cement, set monument per WVDEP. Cellar will be filled.
18. RDMO equipment, dispose of circulated fluids properly, reclaim per WVDEP.

IF WELL HAPPENS TO HAVE 7" PRODUCTION CASING
INSTEAD OF 5 1/2" PRODUCTION CASING, NOTIFY THE
INSPECTOR AND SEE THE ALTERNATE PROCEDURE ATTACHED.

7" PRODUCTION CASING

Well Info:

Well Name – Heartwood Forestland Fund 3

API – 47-085-09891

Location – 39.12939, -81.10222

Elevation – 907 ft

Well Casing Record –

Casing Size	Casing Depth	Cement Data
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13-3/8" surface	339 ft	Type 1, 1.26 ft ³ /sack 64 bbls pumped (285 sacks) (20 bbls returned to surface)
9-5/8" intermediate	2311 ft	Type 1, 1.19 ft ³ /sack 185 bbls pumped (868 sacks) (45 bbls returned to surface)
7" intermediate2 PRODUCTION	6114 ft	Class H, 1.18 ft ³ /sack 147 bbls pumped (701 sacks) (TOC@4480' per CBL)

Perforations –

- 5945' – 5947'

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- Always express STOP work authority if deemed necessary
- Hold pre-job safety meeting

Responsibilities:

Production Engineer(s) – Responsible for providing a working procedure specified for the well that the work is being performed on. Responsible for coordinating work and seeing that it is finished in a timely manner.

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Procedure for Setting Downhole Plug:

1. Verify all HSE requirements are understood and followed.
2. Verify proper documentation is included in working procedure.
3. Check for pressure on 7" casing and bleed off as necessary.
4. NU to outer casing valve to fill the hole with produced water and continue to monitor and keep the hole full of fluid as work progresses.
5. ND 2-1/16" gate valve and tubinghead adaptor flange.
6. MIRU plugging rig with JU head and 7-1/16" frac valve. Remove BPV and pull tubing hanger.
7. **Perf Plug:** TIH work string to 5977 ft, tag CIBP and pick up work string 2 ft. Pump tubing capacity, pump 53 bbls of 6% gel, spot cement plug from 5977 ft - 5727 ft (46 sacks Class A, with added celloflake at 1/4 lb/sk). TOOH work string to 4000 ft, WOC and flush tubing to ensure cement is clear of pipe.
8. Check TOC @ 5727 ft, reset plug if needed, if not then TOOH work string.
9. Check for pressure on 9-5/8" casing and bleed off as necessary.
10. Find free point on 7" casing and cut/shoot casing (previous operator ran CBL and picked TOC @ 4480'). POOH 7" casing.
11. **Casing cut plug1:** TIH work string to 4530 ft (or 50 ft below casing cut depth), pump 129 bbls of 6% gel, then spot cement plug from 4530 ft - 4225 ft (119 sacks Class A). TOOH work string to 2500 ft, WOC and flush tubing to ensure cement is clear of pipe.
12. Check TOC @ 4225 ft, reset plug if needed, if not then TOOH work string to 2775 ft.
13. **Casing cut plug2:** At 2775 ft, pump 95 bbls of 6% gel, then spot cement plug from 2775 ft - 2211 ft (235 sacks Class A). TOOH work string to 500 ft, WOC and flush tubing to ensure cement is clear of pipe.
14. Check TOC @ 2211 ft, reset plug if needed, if not then TOOH work string to 960 ft.
15. **Elevation plug:** At 960 ft, pump 42 bbls of 6% gel, then spot cement plug from 960 ft - 695 ft (97 sacks Class A).
16. **Surface plug:** TOOH work string to 150 ft, spot cement plug from 150 ft - surface (56 sacks Class A).
17. TOOH work string, top off well with cement, set monument per WVDEP. Cellar will be filled.
18. RDMO equipment, dispose of circulated fluids properly, reclaim per WVDEP.

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4708509891 *PC*

WR-35
Rev (9-11)

State of West Virginia
Department of Environmental Protection
Office of Oil and Gas
Well Operator's Report of Well Work

DATE: 11-28-2012
API #: 47-085-09891

Farm name: Heartwood Forestland Fund 3H Operator Well No.: 832255

LOCATION: Elevation: 907' Quadrangle: Harrisville

District: Murphy County: Ritchie
Latitude: 5405' Feet South of 39 Deg. 10 Min. 00 Sec.
Longitude 13810' Feet West of 81 Deg. 05 Min. 00 Sec.

Company: Chesapeake Appalachia, L.L.C.

Address:	Casing & Tubing	Used in drilling	Left in well	Cement fill up Cu. Ft.
P.O. Box 18496 Oklahoma City, OK 73154-0496	20"	100'	100'	Driven
Agent: <u>Eric Gillespie</u>	13 3/8"	339'	339'	359 Cu. Ft.
Inspector: <u>David Cowan</u>	9 5/8"	2311'	2311'	1038 Cu. Ft.
Date Permit Issued: <u>7-30-2010</u>	5 1/2"	6114'	6114'	4210 Cu. Ft.
Date Well Work Commenced: <u>9-12-2011</u>				
Date Well Work Completed: <u>10-6-2011</u>				
Verbal Plugging:				
Date Permission granted on:				
Rotary <input checked="" type="checkbox"/> Cable <input type="checkbox"/> Rig <input type="checkbox"/>				
Total Vertical Depth (ft): <u>6119'</u>				
Total Measured Depth (ft): <u>6119' Vertical well per M Williams</u>				
Fresh Water Depth (ft.): <u>200'</u>				
Salt Water Depth (ft.): <u>None</u>				
Is coal being mined in area (N/Y)? <u>N</u>				
Coal Depths (ft.): <u>None</u>				
Void(s) encountered (N/Y) Depth(s) <u>N</u>				

968 54

OPEN FLOW DATA (If more than two producing formations please include additional data on separate sheet)

Producing formation Marcellus Pay zone depth (ft) 5,945'-5,947'

Gas: Initial open flow _____ MCF/d Oil: Initial open flow _____ Bbl/d

Final open flow Not Tested MCF/d Final open flow _____ Bbl/d

Time of open flow between initial and final tests _____ Hours

Static rock Pressure _____ psig (surface pressure) after _____ Hours

Second producing formation _____ Pay zone depth (ft) _____

Gas: Initial open flow _____ MCF/d Oil: Initial open flow _____ Bbl/d

Final open flow _____ MCF/d Final open flow _____ Bbl/d

Time of open flow between initial and final tests _____ Hours

Static rock Pressure _____ psig (surface pressure) after _____ Hours

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DEC 06 2012

WV Department of
Environmental Protection

I certify under penalty of law that I have personally examined and am familiar with the information submitted on this document and all the 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.

Marlene Williams
Signature

12-10-2012
Date

12/10/2021

VERTICAL PILOT HOLE

Formation/Lithology	Top Depth, MD (ft)	Top Depth, TVD (ft)	Bottom Depth, MD (ft)	Bottom Depth, TVD (ft)
SS	0		692	692
SHALE	692	692	720	720
SS/SHALE	720	720	790	790
LS	790	790	810	810
SS	810	810	1050	1050
SHALE	1050	1050	1110	1110
SS	1110	1110	1170	1170
SHALE	1170	1170	1318	1318
SS	1318	1318	1350	1350
SHALE	1350	1350	1380	1380
SS	1380	1380	1500	1500
SHALE/SS	1500	1500	1738	1738
BIG LIME	1738	1738	1915	1915
BIG INJUN	1915	1915	1961	1961
SHALE/SS	1961	1961	2012	2012
SS	2012	2012	2610	2610
SHALE/SS	2610	2610	2634	2634
SS/SHALE	2634	2634	3840	3840
LS	3840	3840	3870	3870
SS	3870	3870	4920	4920
RHINESTREET	4920	4920	5797	5797
MIDDLESEX	5797	5797	5884	5884
GENESEO	5884	5884	5894	5894
TULLY	5894	5894	5907	5907
MARCELLUS	5907	5907	5961	5961
ONONDAGA	5961	5961	6119	6119
TD	6119	6119		

4708509891

Form IR-11A

State of West Virginia
Office of Oil and Gas

INSPECTORS REPORT

Operator: Chesapeake
API Number: 47-085-09891

Findings:

Checked Rig - drilling intermediate
Possible cement 95% Sunday evening
Location stable in good shape clean
work area

[Signature]
Oil & Gas Inspector

9-16-11
Date

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Office of Oil & Gas
SEP 23 2011
WV Department of
Environmental Protection

12/10/2021

Form IR-11A

State of West Virginia
Office of Oil and Gas

INSPECTORS REPORT

Operator: Chesapeake
API Number: 47-085-09291

Findings:

Intermediate string
958 2311' - 86852 200# gal/ahour
2 local 1/2 gal/hr CTS
10 BBL Return

Daniel Cunn
Oil & Gas Inspector

9-18-11
Date

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Form IR-11A

State of West Virginia
Office of Oil and Gas

INSPECTORS REPORT

Operator: Chesapeake

API Number: 47-085-09891

Findings:

Dig trap - site stable good slope
drilling bit hole @ 4200'
using dividers tool

David W. Cowan

David W. Cowan

Oil & Gas Inspector

9-22-11

Date

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12/10/2021

4708509891

85-09891H

WW - 2B
(Rev. 8/10)

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

3 393

1) Well Operator Chesapeake Appalachia, L.L.C. 494477557 085 Ritchie Murphy Harrisville
Operator ID County District Quadrangle

2) Operator's Well Number: 832255 3) Elevation: 902'

4) Well Type: (a) Oil _____ or Gas XX
(b) If Gas: Production XX / Underground Storage _____
Deep XX / Shallow _____

5) Proposed Target Formation(s): Marcellus Proposed Target Depth: 5917'

6) Proposed Total Depth: TVD 6210' TMD 12500 Feet Formation at Proposed Total Depth: Helderberg

7) Approximate fresh water strata depths: 200'

8) Approximate salt water depths: None

9) Approximate coal seam depths: None

10) Approximate void depths, (coal, Karst, other): None that we are aware of.

11) Does land contain coal seams tributary to active mine? No

12) Describe proposed well work in detail _____

Drill down the the Helderberg, core and run logs. Plug back to the base of the Marcellus with cement #5440' stimulate and produce the Marcellus.

13) CASING AND TUBING PROGRAM

TYPE	SPECIFICATIONS			FOOTAGE INTERVALS		CEMENT
	Size	Grade	Weight per ft	For Drilling	Left in Well	Fill -up (Cu. Ft.)
Conductor	20"	LS		80'	80'	CTS
Fresh Water	13 3/8"	J-55	54.5#	350'	350'	CTS
Coal	9 5/8"	J-55	40#	2300'	2300'	CTS
Intermediate	7"	P-110	20#	If Needed	If Needed	If needed/as needed
Production	5 1/2"	P-110	20#	12,500'	12,500'	As needed
Tubing	2 3/8"		to approx. 6190'			
Liners						

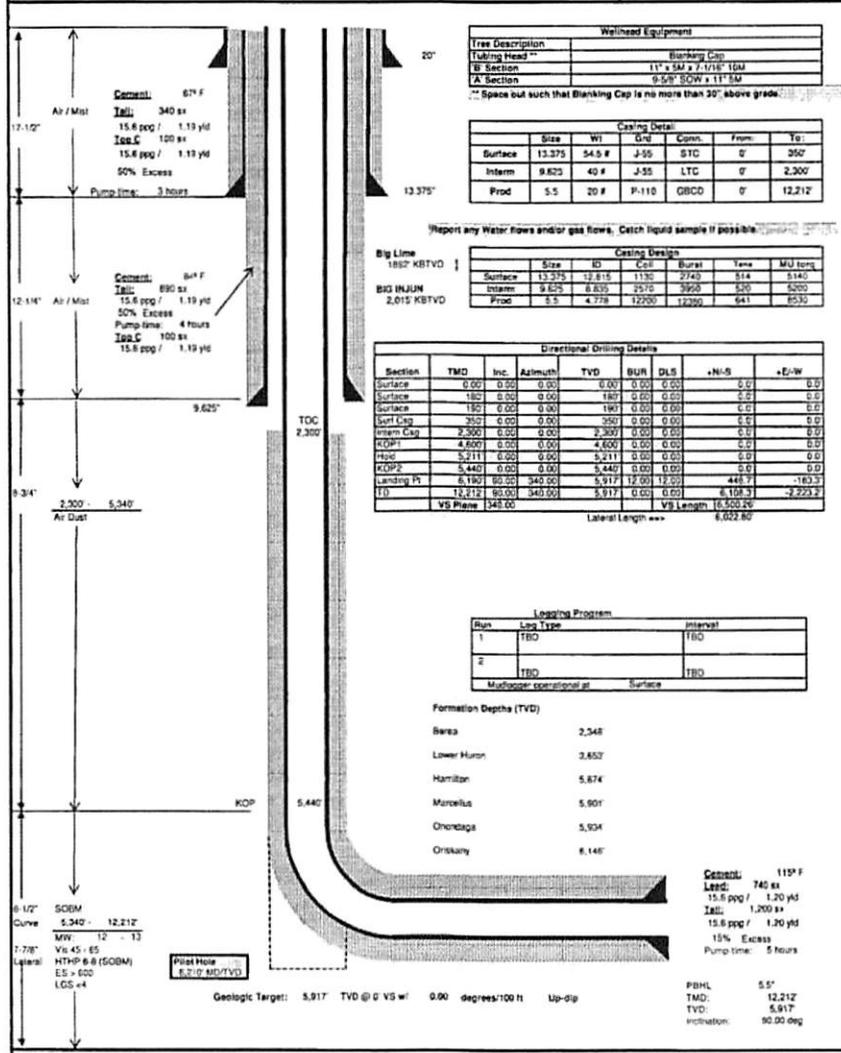
Packers: Kind _____
Sizes _____
Depths Set _____

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MAR 24 2011
WV Department of
Environmental Protection

JAC
3-22-11

12/10/2021

		Well Name: Heartwood Forestland Fund 3H	Drilling Rig: N/A
Drilling Engineer: Lacey Sharp		Formation: Marcellus	Directional Drilling: N/A
Superintendent: N/A	County, State: Richia, WV	Drilling Mud: N/A	Cement Surface: N/A
Asset Manager: N/A	Surface Latitude: 39.129570	Surface Longitude: -81.102440	Cement Longstrings: N/A
Geologist: N/A	BH Latitude: 39.14527	BH Longitude: -81.11066	Wellhead: N/A
Land: N/A	KB Elevation: 522	Ground Elevation: 907	AFE #: N/A



Gyro the 1st well on the pad at KOP.
Ensure all Surveys are referenced to Grid North!!

Drawn by: **Lacey Sharp**
Date: **3/21/011**

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4708509891P



Well Summary

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NOV 19 2021
Well RC#: 4001157774

HEARTWOOD FORESTLAND FUND 3

Well API Number 47085098910000		Surface Legal Location		Field UNASSIGNED FIELD		License # WV Department of Environmental Protection	
Spud Date 9/12/2011		Rig Release Date 10/6/2011		Well Configuration Type HORIZONTAL		Total Depth (ftKB) 6,119.0	
Original KB Elevation (ft) 922.00	Ground Elevation (ft) 907.00	CF Elev (ft)	TH Elev (ft)	KB Elevation (ft)	KB-Ground Distance (ft) 15.00	KB-CF (ft)	KB-TH (ft)
Contact Name		Contact Name		Contact Name		Contact Name	

Directions To Well
Well Readiness: Take the Ellenboro exit off of Route 50. Turn left off the exit and take Rt. 16 south. Follow truck route for 10.6 miles and turn right on Rt. 17 Gillespie Rd. go on Gillespie for 3.4 miles and turn left on location road. SiteView: From Ellenboro Rt.50 take Rt. 16 south and follow truck route for 10.6 miles and turn right on Rt. 17 Gillespie Rd. go on Gillespie for 3.4 miles and turn left on location road.

Wellhead and Christmas Tree Systems

Type	Make	WP (psi)	Service

Wellbores

Wellbore Name	Parent Wellbore	Profile	Min KO Depth (ftKB)
HEARTWOOD FORESTLAND FUND 3H		VERTICAL	

Casing Strings

Csg Des	Run Date	OD (in)	ID (in)	W/Len (lb/ft)	Grade	Set Depth (ftKB)
Conductor	6/30/2011	20.000	19.124	94.00	J-55	100.00
Surface	9/13/2011	13.375	12.615	54.50	J-55	339.41
Intermediate	9/19/2011	9.625	8.835	40.00	J-55	2,311.18
Intermediate 2	10/1/2011	7.000	6.184	29.00	P-110	6,114.00

Cement

Surface Casing Cement, Casing, 6/13/2011 00:00

Cementing Company BJ Services Company			
Top Depth (ftKB) 20.0	Bottom Depth (ftKB) 339.4	Full Return? Yes	Cement Volume Return (bbl) 20.0
Fluid Description type 1 with additives, 15.2 ppg	Fluid Type Lead	Amount (sacks) 285	Class Type 1

Intermediate Casing Cement, Casing, 9/19/2011 00:00

Cementing Company BJ Services Company			
Top Depth (ftKB) 20.0	Bottom Depth (ftKB) 2,311.2	Full Return? No	Cement Volume Return (bbl) 45.0
Fluid Description type 1 cement with additives	Fluid Type LEAD	Amount (sacks) 868	Class Type 1

Intermediate Casing 2 Cement, Casing, 10/1/2011 00:00

Cementing Company BJ Services Company			
Top Depth (ftKB) 4,480.0	Bottom Depth (ftKB) 6,114.0	Full Return? No	Cement Volume Return (bbl) 0.0
Fluid Description 50/50 Class H + additives	Fluid Type LEAD	Amount (sacks) 701	Class Class H

Other In Hole

Des	Top (ftKB)	Btm (ftKB)	Run Date	Pull/Mill Date
Bridge Plug - Permanent	5,977.0	5,979.0	2/21/2012	
Back Pressure Valve	5.0	7.0	8/25/2012	

Zones

Zone Name	Wellbore	Top (ftKB)	Btm (ftKB)
HEARTWOOD FORESTLAND FUND 3H A	HEARTWOOD FORESTLAND FUND 3H	5,945.0	5,947.0

Perforations

Date	Type	Top (ftKB)	Btm (ftKB)	Linked Zone	Shot Dens (shots/ft)	Phasing (°)	Current Status
2/22/2012		5,945.0	5,947.0	HEARTWOOD FORESTLAND FUND 3H A	6.0	60	

Stimulations Summary

Type	Stim/Treat Company	Frac Crew	Stim/Treat Supervisor	Job
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Stimulation Stage: <intrefno>, <depthtop>-<depthbtm>

Stimulation Stage #	Start Date	Zone	Top Depth (ftKB)	Bottom Depth (ftKB)
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Pumping Summary

Stg Int	Interval Type	Top Depth (ftKB)	Bottom Depth (ftKB)	Clean Volume (bbl)
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Logs

Date	Top (ftKB)	Btm (ftKB)	Type	Cased?

12/10/2021

4708509891P



Well Summary

HEARTWOOD FORESTLAND FUND 3

Well RC#: 400115774

Tubing Strings										
Tubing Description							Run Date		Set Depth (ftKB)	
Item Des	OD (in)	ID (in)	Wt (lb/ft)	Grade	Jts	Len (ft)	Top (ftKB)	Btm (ftKB)		

Rod Strings										
Rod Description							Run Date		Set Depth (ftKB)	
Item Description	OD Nominal (in)	Weight/Length (lb/ft)	Grade	Joints	Length (ft)	Top Depth (ftKB)	Bottom Depth (ftKB)			

Rod Pumps									
Make			Model			Serial Number			
Pump Bore (in)	API Pump Type	API Barrel Type	API Anchor Type	Seat Assy Type	Barrel Length (ft)	Nom Plunger Len (ft)	Upper Ext Len (ft)	Lwr Ext Len (ft)	
Plung OD Cir (in)	Seating Assembly Description		Seat Assy Sz (in)	API Barrel Material	API Plunger Material	Gas Anc OD (in)	Gas Anchor Length (ft)		
Traveling Valve Ball Material	Traveling Valve Seat Material		Standing Valve Ball Material			Standing Valve Seat Material			

Swabs					
Date	Swab Comp	Completion/Zone	Total Vol (bbl)	Total Oil (bbl)	Total BSW (bbl)

Jobs				
Start Date	End Date	Job Type	Job Subtype	Summary
		Retirement Plug & Abandon	Plug & Abandon	planning
9/12/2011	10/6/2011	Development Drill & Complete	Drilling	
1/6/2012	8/25/2012	Development Drill & Complete	Completion	

Attachments	
Des	

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12/10/2021

WW-4A
Revised 6-07

1) Date: _____
2) Operator's Well Number
Heartwood Forestland Fund 3

3) API Well No.: 47 - 085 - 09891

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS
NOTICE OF APPLICATION TO PLUG AND ABANDON A WELL

4) Surface Owner(s) to be served:	5) (a) Coal Operator
(a) Name <u>State of WV, Department of Commerce/Division of Natural Resources</u>	Name <u>State of WV, Department of Commerce/Division of Natural Resources</u>
Address <u>324 4th Avenue South</u>	Address <u>324 4th Avenue South</u>
<u>Charleston, WV 25305</u>	<u>Charleston, WV 25305</u>
(b) Name _____	(b) Coal Owner(s) with Declaration
Address _____	Name _____
	Address _____
(c) Name _____	Name _____
Address _____	Address _____
6) Inspector <u>Doug Newlon</u>	(c) Coal Lessee with Declaration
Address <u>Inspector Supervisor</u>	Name _____
Telephone <u>(304) 932-8049</u>	Address _____

TO THE PERSONS NAMED ABOVE: You should have received this Form and the following documents:

- (1) The application to Plug and Abandon a Well on Form WW-4B, which sets out the parties involved in the work and describes the well its and the plugging work order; and
- (2) The plat (surveyor's map) showing the well location on Form WW-6.

The reason you received these documents is that you have rights regarding the application which are summarized in the instructions on the reverses side. However, you are not required to take any action at all.

Take notice that under Chapter 22-6 of the West Virginia Code, the undersigned well operator proposes to file or has filed this Notice and Application and accompanying documents for a permit to plug and abandon a well with the Chief of the Office of Oil and Gas, West Virginia Department of Environmental Protection, with respect to the well at the location described on the attached Application and depicted on the attached Form WW-6. Copies of this Notice, the Application, and the plat have been mailed by registered or certified mail or delivered by hand to the person(s) named above (or by publication in certain circumstances) on or before the day of mailing or delivery to the Chief.

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NOV 19 2021

WV Department of
Environmental Protection

Well Operator SWN Production Company, LLC
 By: Brittany Woody
 Its: Senior Regulatory Analyst
 Address 1300 Fort Pierpont Dr., Suite 201
Morgantown, WV 26508
 Telephone 304-84-1610

Brittany Woody

Subscribed and sworn before me this 18th day of November, 2021

My Commission Expires May 6 2023

Oil and Gas Privacy Notice



The Office of Oil and Gas processes your personal information, such as name, address and phone number, for 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.

12/10/2021

SURFACE OWNER WAIVER

4708509891P

Operator's Well
Number

Heartwood Forestland Fund 3

INSTRUCTIONS TO SURFACE OWNERS NAMED ON PAGE WW4-A

The well operator named on page WW-4A is applying for a permit from the State to plug and abandon a well. (Note: If the surface tract is owned by more than three persons, then these materials were served on you because your name appeared on the Sheriff's tax ticket on the land or because you actually occupy the surface tract. In either case, you may be the only owner who will actually receive these materials.) See Chapter 22 of the West Virginia Code. Well work permits are valid for 24 months. If you do not own any interest in the surface tract, please forward these materials to the true owner immediately if you know who it is. Also, please notify the well operator and the Office of Oil and Gas.

**NOTE: YOU ARE NOT REQUIRED TO FILE ANY COMMENT.
WHERE TO FILE COMMENTS AND OBTAIN ADDITIONAL INFORMATION:**

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

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Time Limits and methods for filing comments. The law requires these materials to be served on or before the date the operator files his Application. You have **FIVE (5) 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.

Comments must be in writing. Your comments must 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.

The Chief has the power to deny or condition a well work permit based on comments on the following grounds:

- 1) The proposed well work will constitute a hazard to the safety of persons.
- 2) The soil erosion and sediment control plan is not adequate or effective;
- 3) Damage would occur to publicly owned lands or resources;
- 4) The proposed well work fails to protect fresh water sources or supplies;
- 5) The applicant has committed a substantial violation of a previous permit or a substantial violation of one or more of the rules promulgated under Chapter 22, and has failed to abate or seek review of the violation..."

If you want a copy of the permit as it is issued or a copy of the order denying the permit, you should request a copy from the Chief.

VOLUNTARY STATEMENT OF NO OBJECTION

I hereby state that I have read the instructions to surface owners and that I have received copies of a Notice and Application For A Permit To Plug And Abandon on Forms WW-4A and WW-4B, and a survey plat.

I further state that I have no objection to the planned work described in these materials, and I have no objection to a permit being issued on those materials.

FOR EXECUTION BY A NATURAL PERSON
ETC.

FOR EXECUTION BY A CORPORATION,

Signature

Date

Name SWN Production Company, LLC
By Brittany Woody
Its Senior Regulatory Analyst Date _____

Signature Brittany Woody Date 11/18/21
12/10/2021

WW-4B

4708509891P

API No. 47-085-09891
Farm Name _____
Well No. Heartwood Forestland Fund 3

**INSTRUCTIONS TO COAL OPERATORS
OWNERS AND LESSEE**

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The well operator named on the obverse side of WW-4 (B) is about to abandon the well described in the enclosed materials and will commence the work of plugging and abandoning said well on the date the inspector is notified. Which date shall not be less than five days after the day on which this notice and application so mailed is received, or in due course should be received by the Department of Environmental Protection Office of Oil & Gas.

This notice and application is given to you in order that your respective representatives may be present at the plugging and filling of said well. You are further notified that whether you are represented or not the operator will proceed to plug and fill said well in the manner required by Section 24, Article 6, Chapter 22 of the Code and given in detail on obverse side of this application.

NOTE: If you wish this well to be plugged according to 22-6-24(d) then as per Regulation 35CSR4-13.9 you must complete and return to this office on form OB-16 "Request by Coal Operator, Owner, or Lessee for plugging" prior to the issuance of this plugging permit.

WAIVER

The undersigned coal operator ____/ owner ____/ lessee ____/ of the coal under this well location has examined this proposed plugging work order. The undersigned has no objection to the work proposed to be done at this location, provided, the well operator has complied with all applicable requirements of the West Virginia Code and the governing regulations.

Date: _____

~~SWN Production Company, LLC~~

By: Brittany Woody

Its Senior Regulatory Analyst

12/10/2021

4708509891P

7020 3160 0001 8050 8391

U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only

For delivery information, visit our website at www.usps.com™.

OFFICIAL USE

Certified Mail Fee	
\$	
Extra Services & Fees (check box, add fee as appropriate)	
<input type="checkbox"/> Return Receipt (hardcopy)	\$ _____
<input type="checkbox"/> Return Receipt (electronic)	\$ _____
<input type="checkbox"/> Certified Mail Restricted Delivery	\$ _____
<input type="checkbox"/> Adult Signature Required	\$ _____
<input type="checkbox"/> Adult Signature Restricted Delivery	\$ _____
Postage	

Postmark
Here

State of WV, Department of Commerce/DNR
324 4th Avenue South
Charleston, WV 25303

See Reverse for Instructions

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WV Department of
Environmental Protection

12/10/2021

4708509891P

WW-9
(5/16)

API Number 47 - 085 - 09891
Operator's Well No. Heartwood Forestland Fund 3

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
OFFICE OF OIL AND GAS
FLUIDS/ CUTTINGS DISPOSAL & RECLAMATION PLAN

Operator Name SWN Production Company, LLC OP Code 494494833

Watershed (HUC 10) Indian Creek Quadrangle Harrisville

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 Any well effluent will be contained in tanks before disposing off-site

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 (if selected provide a completed form WW-9-GPP)
- Underground Injection (UIC Permit Number TBD pending selection of plugging contractor)
- Reuse (at API Number _____)
- Off Site Disposal (Supply form WW-9 for disposal location)
- Other (Explain _____)

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Will closed loop system be used? If so, describe: N/A

Drilling medium anticipated for this well (vertical and horizontal)? Air, freshwater, oil based, etc. N/A

-If oil based, what type? Synthetic, petroleum, etc. N/A

Additives to be used in drilling medium? N/A

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

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

-Landfill or offsite name/permit number? _____

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 April 1, 2016, 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 18th day of November, 2021

Elizabeth R Day
My commission expires Nov 6 2023



Operator's Well No. _____

Proposed Revegetation Treatment: Acres Disturbed ONE Prevegetation pH 5.5

Line Two Tons/acre or to correct to pH 6.5

Fertilizer type 10-20-20

Fertilizer amount 500 lbs/acre

Mulch 50 Bales 2.5 Tons/acre

Seed Mixtures

Temporary		Permanent	
Seed Type	lbs/acre	Seed Type	lbs/acre
		Orchard Grass	30%
		Rye (annual @BT)	35%
		Timothy (Climax)	25%
		Clover (Med.Red)	10%

Attach:

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

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Photocopied section of involved 7.5 topographic sheet.

WV Department of
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Plan Approved by: Douglas Newb

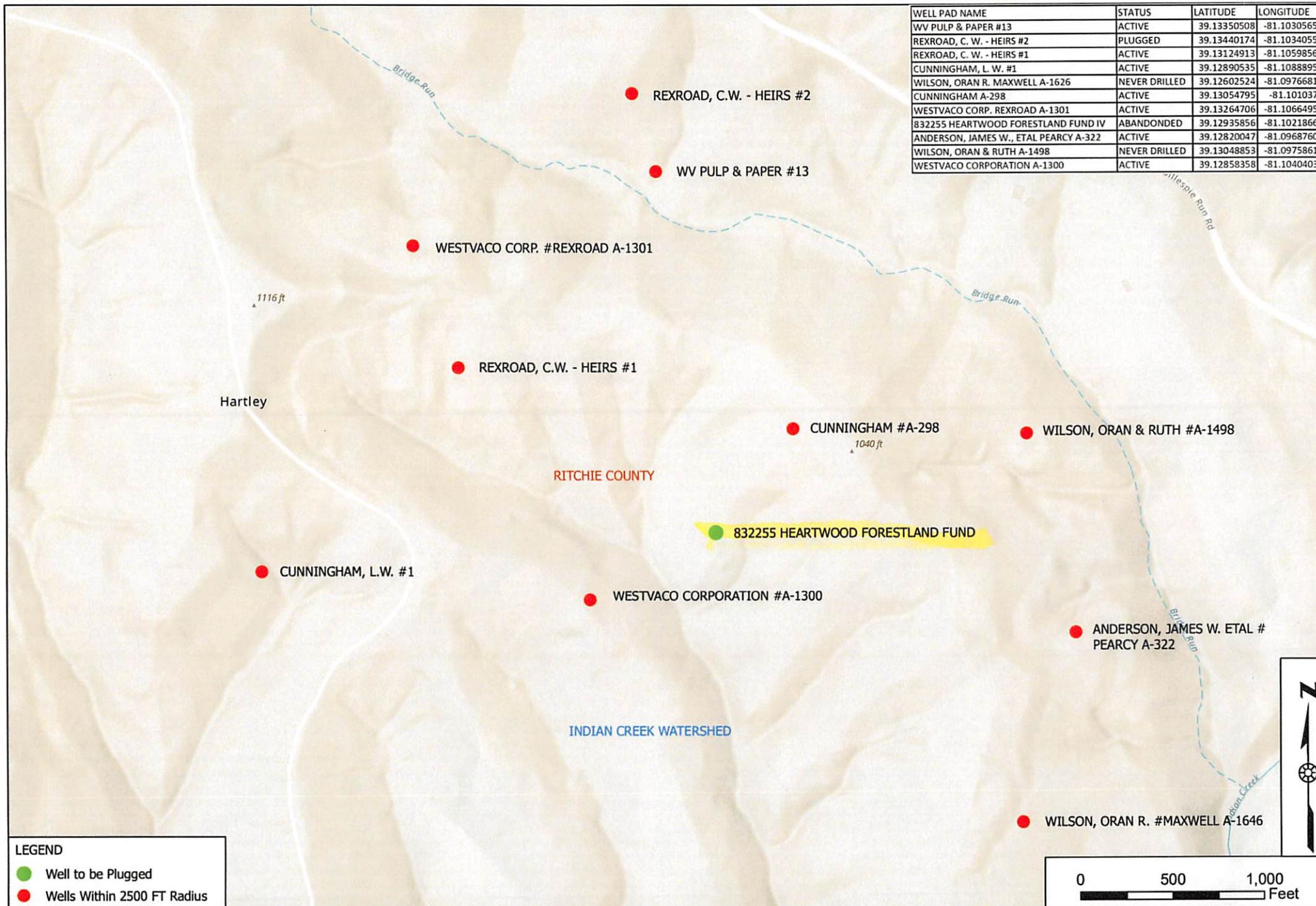
Comments: _____

seed & Mulch disturbed areas
Remove Berm around Pad

Title: Oil & Gas Inspector Supervisor Date: 11-17-2021

Field Reviewed? Yes No

4708509891P



WELL PAD NAME	STATUS	LATITUDE	LONGITUDE
WV PULP & PAPER #13	ACTIVE	39.13350508	-81.10305658
REXROAD, C. W. - HEIRS #2	PLUGGED	39.13440174	-81.10340558
REXROAD, C. W. - HEIRS #1	ACTIVE	39.13124913	-81.10598567
CUNNINGHAM, L. W. #1	ACTIVE	39.12890535	-81.10888957
WILSON, ORAN R. MAXWELL A-1626	NEVER DRILLED	39.12602524	-81.09766818
CUNNINGHAM A-298	ACTIVE	39.13054795	-81.1010374
WESTVACO CORP. REXROAD A-1301	ACTIVE	39.13264706	-81.10664958
832255 HEARTWOOD FORESTLAND FUND IV	ABANDONED	39.12935856	-81.10218664
ANDERSON, JAMES W., ETAL PEARCY A-322	ACTIVE	39.12820047	-81.09687603
WILSON, ORAN & RUTH A-1498	NEVER DRILLED	39.13048853	-81.09758619
WESTVACO CORPORATION A-1300	ACTIVE	39.12858358	-81.10404033



6		
5		
4		
3		
2		
1		

NO. DATE DESCRIPTION

PREPARED FOR:

SEAL:

PREPARED BY:

2361 DAVENSON RUN ROAD
CLARKSBURG, WV 26301
WWW.ASCENTCONSULTINGENGINEERS.COM
(304) 933-2462

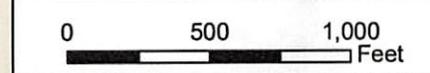
PROJECT NUMBER:	2699	DRAWN:	MVW
DATE:	11/8/2021	CHECKED:	AW
SCALE:	1:6,000	APPROVED:	

TITLE: **WELL PLUGGING MAP**

PLAN STATUS: 1

LEGEND

- Well to be Plugged
- Wells Within 2500 FT Radius



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Environmental Protection

WW-7
8-30-06



West Virginia Department of Environmental Protection
Office of Oil and Gas
WELL LOCATION FORM: GPS

API: 47-085-09891 WELL NO.: 3

FARM NAME: Heartwood Forestland Fund

RESPONSIBLE PARTY NAME: SWN Production Company, LLC

COUNTY: Ritchie DISTRICT: Murphy

QUADRANGLE: Harrisville

SURFACE OWNER: State of WV, Department of Commerce/Division of Natural Resources

ROYALTY OWNER: State of WV, Department of Commerce/Division of Natural Resources

UTM GPS NORTHING: 4331135.92

UTM GPS EASTING: 491167.92 GPS ELEVATION: 907'

The Responsible Party named above has chosen to submit GPS coordinates in lieu of preparing a new well location plat for a plugging permit or assigned API number on the above well. The Office of Oil and Gas will not accept GPS coordinates that do not meet the following requirements:

1. Datum: NAD 1983, Zone: 17 North, Coordinate Units: meters, Altitude: height above mean sea level (MSL) – meters.
2. Accuracy to Datum – 3.05 meters
3. Data Collection Method:

Survey grade GPS : Post Processed Differential _____
Real-Time Differential

Mapping Grade GPS _____ : Post Processed Differential _____
Real-Time Differential _____

4. Letter size copy of the topography map showing the well location.

I the undersigned, hereby certify this data is correct to the best of my knowledge and belief and shows all the information required by law and the regulations issued and prescribed by the Office of Oil and Gas.

Brittany Wbody
Signature

Senior Regulatory Analyst
Title

11/18/21
Date

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11/10/2016

PLUGGING PERMIT CHECKLIST

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Plugging Permit

- WW-4B
- WW-4B signed by inspector
- WW-4A
- SURFACE OWNER WAIVER or PROOF THAT APPLICATION WAS SENT BY REGISTERED OR CERTIFIED MAIL
- COAL OWNER/COAL OPERATOR/COAL LESSEE WAIVERS or PROOF THAT APPLICATION WAS SENT BY REGISTERED OR CERTIFIED MAIL
- WW-9 PAGE 1 (NOTARIZED)
- WW-9 PAGE 2 with attached drawing of road, location, pit and proposed area for land application
- WW-9 GPP PAGE 1 and 2 if well effluent will be land applied
- RECENT MYLAR PLAT OR WW-7
- WELL RECORDS/COMPLETION REPORT
- TOPOGRAPHIC MAP OF WELL, SHOWING PIT IF PIT IS USED
- MUST HAVE VALID BOND IN OPERATOR'S NAME
- CHECK FOR \$100 IF PIT IS USED



Stansberry, Wade A <wade.a.stansberry@wv.gov>

Plugging Vertical Well Work Permit (API: 47-085-09891)

1 message

Stansberry, Wade A <wade.a.stansberry@wv.gov>

Fri, Dec 10, 2021 at 1:18 PM

To: Brittany Woody <Brittany_Woody@swn.com>, liz_gee@swn.com, Douglas Newlon <douglas.c.newlon@wv.gov>, Arlene Mossor <amossor@wvassessor.com>

I have attached a copy of the newly issued well [permit](#) numbers:

47-085-09891- 832255 - HEARTWOOD FORESTLAND FUND

This will serve as your copy.

Thank you,

Wade A. Stansberry

Environmental Resource Specialist 3

West Virginia Department of Environmental Protection

Office of Oil & Gas

601 57th St. SE

Charleston, WV 25304

(304) 926-0499 ext. 41115

(304) 926-0452 fax

Wade.A.Stansberry@wv.gov

2 attachments

 **IR-8 Blank.pdf**
183K

 **47-085-09891 - Copy.pdf**
5587K

12/10/2021