

**Dave Hardy** Secretary of Revenue

Dale W. Steager State Tax Commissioner

# STATE TAX DEPARTMENT

	June 28, 2018	0173	2013 101	
The Honorable Mac Warner Secretary of State			(··) (C)	
Building 1, Suite 157-K State Capitol Charleston, West Virginia 25305			A II: 2.	U

Dear Secretary Warner:

Attached are tentative natural resource property valuation variables for the 2019 Tax Year that have been developed by the State Tax Department for use in appraising coal, oil, natural gas, managed timberland and other natural resource properties for ad valorem tax purposes.

The State Tax Department will accept written public comments on all variables until August 1, 2018. Final valuation variables will be filed on or before September 1, 2018.

Public comments concerning the attached variables should be forwarded to the following address:

> West Virginia State Tax Department Property Tax Division Attention: Jeff Amburgey P.O. Box 2389 Charleston, West Virginia 25328-2389

> > Sincerely,

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Dale W. Steager State Tax Commissioner

DWS/ja/j

Attachment

# **OIL AND GAS PROPERTIES ANALYSIS**

Tax Year 2019

June 28, 2018 Dale W. Steager State Tax Commissioner Department of Revenue

# OIL AND GAS

### TY 2019

### Capitalization Rate Analysis and Results:

In developing a capitalization rate for use in valuing specific income-producing properties consideration is given to the three approaches generally employed in estimating a discount rate. As a matter of practicality, the Bands-of-Investment and Summation Technique approaches are utilized in establishing discount rates for producing oil and gas properties. Data for analysis has been derived in accordance with current Legislative Rule Title 110, Series 1J.

Safe Rate	( 3-Month Co	onstant Maturity I	nterest Rate	s )				
	January	December	2017		0.947%	]		
Risk Rate	(Interest diff	ferential between	Loan Rate a	ind 3-Month Co	instant Maturity	y Interest Rates)		
	Loan Rate*			Risk Rate				
	2017	6.097%		5.150%				
		*Prime plus 2%						
						-		
<u>Equity</u>		between Equity F	Rates and 3-	Month Constan		rest Rates)		
	Equity Rate**	-			Risk Rate			
	2017	[12.75%/(1275			16.639%			
	"" Value Line	Investment Surve	ey Analysis					
Composite F	lick Pata	Loop and Eq	uity Potos w	aighted by indu	etry optimated	capital structure.		
Composite r		Equity Rate	uity Mates w	Debt Rate	isiiy esumateu	Composite Risk		
	2017	10.8154%		1.803%		13.282%	***	
	Note: Debt e			Debt	35%	Equity	65%	
		severance tax adj	ustment	DCD	0.95	Equity	0070	
	Encours		ootinont		0.00			
Non Liquidit	v Rate	Interest differe	ntial betwee	n 3-month Con	stant Maturity	Interest Rates and a 1	l year Cor	istant
						ecessary to sell active		
					<u>1yr T</u> Bill	90 day T Bill		Non Liquidity Rate
	January	December	2017		1.201%	0.947%		0.254%
Management	Rate	Charges for the	managemer	nt of investmen	t portfolios.			
	Fixed Rate (b	y Rule)		0.500%				
Property Tax	Rate	Sixty percent (6	0%) of State	average Class	III property ta	x rate.		
		2017		60% of 2.18		1.308%		
		2017						
Inflation Rate	•							

### Capitalization Rate

Since the valuation of oil and gas property is predicated on a three year production , the capitalization rate will be considered in a similar manner.

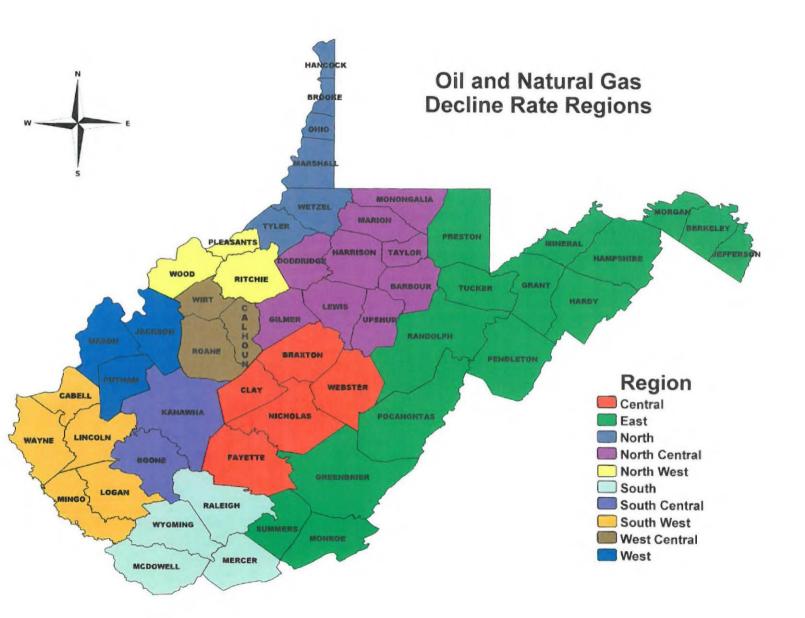
	2017	2016	2015	
Inflation Rate	-2.110%	-2.070%	-0.730%	
Safe Rate	0.947%	0.319%	0.053%	
Composite Risk Rate	13.282%	14.998%	15.186%	
Non Liquidity Rate	0.254%	0.295%	0.269%	
Management Rate	0.500%	0.500%	0.500%	
Property Tax Rate	1.308%	1 308%	1.314%	-
Total	14.181%	15.350%	16.592%	
	50.000%	33.333%	16.667%	
	7.090%	5.117%	2.765%	14.972%

Capitalization Rate Rounded to:

15.00%

# MULTIPLIERS FOR 15.0% MID-YEAR LIFE (ANNUALLY)

YEAR		YEAR	
1	0.932505	21	0.056976
2	0.810874	22	0.049545
3	0.705108	23	0.043082
4	0.613137	24	0.037463
5	0.533163	25	0.032576
6	0.463620	26	0.028327
7	0.403148	27	0.024632
8	0.350563	28	0.021420
9	0.304837	29	0.018626
10	0.265076	30	0.016196
11	0.230501	31	0.014084
12	0.200436	32	0.012247
13	0 174292	33	0.010649
14	0.151558	34	0.009260
15	0.131790	35	0.008052
16	0 114600	36	0.007002
17	0.099652	37	0.006089
18	0.086654	38	0.005295
19	0.075351	39	0.004604
20	0.065523	40	0.004003



	Decline Rates for Natural Gas and Oil Formations: Central						
Central:Braxton, Clay, Fayette, Nicholas, Webster							
Code	Formation	Year 1	Year 2	Year 3 +			
12	Alexander, Benson	-0.31	-0.20	-0.10			
14	Benson	-0.48	-0.08	-0.08			
16	Benson, Balltown+	-0.45	-0.16	-0.12			
17	Gordon +	-0.30	-0.07	-0.07			
18	Big Injun	-0.34	-0.13	-0.13			
19	Big Injun, Big Lime	-0.36	-0.13	-0.13			
22	Big Lime	-0.34	-0.34	-0.13			
26	Ravencliff	-0.40	-0.40	-0.25			
93	4th Sand	-0.42	-0.32	-0.08			
94	50 Foot	-0.34	-0.26	-0.07			
95	Injun/Weir	-0.51	-0.26	-0.09			
96	Maxton	-0.70	-0.27	-0.08			
109	Trenton/Deeper *	-0.41	-0.22	-0.09			
110	Marcellus *	-0.41	-0.22	-0.09			
9	Exception (Median)	-0.41	-0.22	-0.09			
10	Non-Filer	-0.30	-0.07	-0.07			

_	Decline Rates for Natural Gas and Oil Formations: East						
	East: Berkeley, Grant, Greenbrier, Hampshire, Hardy, Jefferson, Mineral, Monroe, Morgan, Pendleton, Pocahontas, Preston, Randolph, Summers, Tucker						
Code	Formation	Year 1	Year 2	Year 3			
1	Oriskany	-0.30	-0.30	-0.19			
14	Benson	-0.31	-0.17	-0.12			
20	Benson +	-0.44	-0.20	-0.08			
21	Benson, Fifth	-0.29	-0.28	-0.09			
32	Brallier +	-0.48	-0.20	-0.05			
33	Elk, Benson	-0.39	-0.21	-0.08			
34	Elk, Benson, Riley	-0.53	-0.19	-0.05			
35	Elk, Benson, Riley +	-0.36	-0.19	-0.11			
36	Elk, Benson, Balltown	-0.34	-0.18	-0.11			
37	Elk, Alexander,Benson	-0.50	-0.07	-0.07			
38	Elk, Alexander,Benson +	-0.40	-0.16	-0.16			
39	Hunterville	-0.31	-0.31	-0.14			
40	Fox, Haverty	-0.36	-0.21	-0.15			
93	4th Sand	-0.42	-0.32	-0.08			
94	50 Foot	-0.34	-0.26	-0.07			
95	Injun/Weir	-0.51	-0.26	-0.09			
96	Maxton	-0.70	-0.27	-0.08			
110	Marcellus	-0.59	-0.22	-0.17			
9	Exception (Median)	-0.41	-0.22	-0.10			
10	Non-Filer	-0.29	-0.07	-0.05			

	Decline Rates for Natural Gas and Oil Formations: North							
North: Brooke, Hancock, Marshall, Ohio, Tyler, Wetzel								
Code	Formation	Year 1	Year 2	Year 3 +				
11	Gordon	-0.47	-0.31	-0.09				
13	Alexander, Benson, Riley	-0.26	-0.16	-0.15				
15	Benson, Riley	-0.18	-0.16	-0.06				
93	4th Sand	-0.42	-0.32	-0.08				
94	50 Foot	-0.34	-0.26	-0.07				
95	Injun/Weir	-0.51	-0.26	-0.09				
96	Maxton	-0.70	-0.27	-0.08				
97	Coalbed Methane (Vertical)	-0.23	-0.08	-0.05				
110	Marcellus	-0.52	-0.23	-0.18				
9	Exception (Median)	-0.39	-0.23	-0.08				
10	Non-Filer	-0.18	-0.16	-0.06				

	Monongalia, Taylor, Ups	shur		
Code		Year 1	Year 2	Year 3
11	Gordon	-0.41	-0.14	-0.12
12	Alexander, Benson	-0.37	-0.19	-0.11
13	Alexander, Benson, Riley	-0.40	-0.28	-0.05
14	Benson	-0.31	-0.17	-0.12
15	Benson, Riley	-0.34	-0.17	-0.14
18	Big Injun	-0.36	-0.16	-0.13
21	Benson, Fifth	-0.31	-0.20	-0.14
28	Weir	-0.34	-0.34	-0.07
29	Weir +	-0.28	-0.28	-0.23
33	Elk, Benson	-0.34	-0.16	-0.11
34	Elk, Benson, Riley	-0.42	-0.27	-0.08
37	Elk, Alexander, Benson	-0.49	-0.23	-0.08
38	Elk, Alexander, Benson +	-0.38	-0.20	-0.12
40	Fox, Haverty	-0.46	-0.16	-0.08
	Rhinestreet	-0.28	-0.03	-0.03
57	Alexander, Benson, Balltown	-0.39	-0.26	-0.08
	Alexander	-0.35	-0.20	-0.10
_	Alexander +	-0.39	-0.22	-0.10
	Alexander, Benson, Riley +	-0.39	-0.35	-0.12
61	Balltown	-0.35	-0.20	-0.10
62	Balltown, Speechley	-0.28	-0.22	-0.10
63	Balltown, Speechley +	-0.30	-0.13	-0.10
64	Benson, Balltown, Speechley	-0.28	-0.22	-0.09
	Benson, Bradford	-0.37	-0.20	-0.10
	Benson, Balltown	-0.29	-0.23	-0.11
	Benson, Riley +	-0.38	-0.14	-0.10
	Benson, Speechley	-0.30	-0.22	-0.14
	Brallier, Elk	-0.42	-0.20	-0.13
	Brallier	-0.40	-0.22	-0.15
	Deeper/Onondaga or Oriskany/Helderberg	-0.24	-0.24	-0.03
	Elk, Alexander	-0.42	-0.22	-0.09
	Elk, Benson +	-0.38	-0.20	-0.12
	Elk	-0.43	-0.12	-0.10
	Elk, Riley	-0.60	-0.35	-0.17
	Fox +	-0.46	-0.18	-0.09
	Haverty, Elk, Benson (No Alexander)	-0.35	-0.16	-0.16
	Haverty	-0.45	-0.15	-0.15
	Riley	-0.44	-0.22	-0.10
	Speechley	-0.30	-0.18	-0.09
	Alexander, Benson, Speechley	-0.39	-0.24	-0.10
	Haverty, Elk, Alexander	-0.47	-0.14	-0.14
	Fifth, Oil	-0.45	-0.25	-0.22
	Bayard All	-0.30	-0.20	-0.05
	Fifth	-0.29	-0.18	-0.12
	Fifth +	-0.25	-0.15	-0.13
	Gordon, Injun All	-0.41	-0.23	-0.23
91	Squaw	-0.37	-0.31	-0.06
92	Injun +	-0.34	-0.22	-0.22
93	4th Sand	-0.42	-0.32	-0.08
	50 Foot	-0.34	-0.26	-0.07
95	Injun/Weir	-0.51	-0.26	-0.09
	Maxton	-0.70	-0.27	-0.08
	Coalbed Methane (Vertical)	-0.23	-0.08	-0.05
	Coalbed Methane (Horizontal)	-0.05	-0.05	-0.32
	Trenton/Deeper *	-0.38	-0.21	-0.11
10	Marcellus	-0.59	-0.29	-0.23
	Exception (Median)	-0.38	-0.21	-0.11
	Non-Filer	-0.23	-0.03	-0.03

North West: Pleasants, Ritchie, Wood						
Code	Formation	Year 1	Year 2	Year 3 +		
2	Huron, Rhinestreet	-0.41	-0.26	-0.07		
4	Huron	-0.42	-0.24	-0.14		
5	Huron, Shales above Huron	-0.39	-0.25	-0.14		
8	Berea	-0.31	-0.15	-0.15		
11	Gordon	-0.38	-0.10	-0.10		
12	Alexander, Benson (No Riley)	-0.34	-0.23	-0.10		
13	Alexander, Benson, Riley	-0.32	-0.20	-0.10		
14	Benson	-0.19	-0.19	-0.10		
44	Rhinestreet, Huron, Shallow Shale	-0.43	-0.28	-0.11		
47	Alexander, Riley, (No Benson)	-0.41	-0.05	-0.05		
48	Rhinestreet, Alexander, Benson, Riley	-0.31	-0.24	-0.10		
49	Weir, Squaw, Big Injun	-0.27	-0.17	-0.07		
50	Rhinestreet	-0.40	-0.27	-0.27		
51	Rhinestreet +	-0.36	-0.21	-0.10		
52	All Upper Devonian (Undiv)	-0.48	-0.33	-0.19		
53	Huron, Chemung	-0.35	-0.11	-0.09		
54	Huron, Hampshire, Pocono	-0.12	-0.12	-0.11		
55	Upper Devonian (Above Huron)	-0.46	-0.33	-0.23		
56	Chemung Sands= Riley, Bradford, Balltown, Speechley, Warren (No Benson or Alexander)	-0.28	-0.18	-0.10		
83	Huron Oil	-0.74	-0.44	-0.40		
93	4th Sand	-0.42	-0.32	-0.08		
94	50 Foot	-0.34	-0.26	-0.07		
95	Injun/Weir	-0.51	-0.26	-0.09		
96	Maxton	-0.70	-0.27	-0.08		
09	Trenton/Deeper *	-0.39	-0.23	-0.13		
10	Marcellus	-0.46	-0.29	-0.13		
9	Exception (Median)	-0.39	-0.23	-0.13		
10	Non-Filer	-0.12	-0.05	-0.05		

	Decline Rates for Natural Gas and Oil Formations: South						
South: McDowell, Mercer, Raleigh, Wyoming							
Code	Formation	Year 1	Year 2	Year 3 +			
8	Berea	-0.34	-0.15	-0.15			
22	Big Lime	-0.31	-0.19	-0.07			
23	Big Lime, Maxton	-0.31	-0.19	-0.07			
24	Big Lime, Ravencliff	-0.29	-0.29	-0.17			
25	Berea +	-0.37	-0.12	-0.08			
26	Ravencliff	-0.40	-0.08	-0.07			
28	Weir	-0.44	-0.20	-0.10			
29	Weir +	-0.28	-0.21	-0.08			
30	Weir, Big Lime	-0.37	-0.19	-0.13			
42	Maxton, Ravencliff	-0.40	-0.08	-0.07			
93	4th Sand	-0.42	-0.32	-0.08			
94	50 Foot	-0.34	-0.26	-0.07			
95	Injun/Weir	-0.51	-0.26	-0.09			
96	Maxton	-0.27	-0.13	-0.09			
97	Coalbed Methane (Vertical)	0.03	0.10	-0.05			
98	Coalbed Methane (Horizontal)	-0.05	-0.05	-0.32			
110	Marcellus *	-0.36	-0.19	-0.09			
9	Exception (Median)	-0.36	-0.19	-0.09			
10	Non-Filer	-0.23	-0.08	-0.05			

Decline Rates for Natural Gas and Oil Formations: South Central South Central: Boone, Kanawha					
Code	Formation	Year 1	Year 2	Year 3 +	
3	Devonian Shale	-0.23	-0.08	-0.05	
4	Huron	-0.31	-0.15	-0.04	
8	Berea	-0.23	-0.14	-0.09	
18	Big Injun	-0.29	-0.25	-0.12	
27	Huron, Shales above Huron	-0.21	-0.08	-0.05	
28	Weir	-0.30	-0.21	-0.14	
29	Weir +	-0.31	-0.25	-0.09	
31	Devonian Shales +	-0.27	-0.07	-0.05	
86	Big Injun-Oil	-0.19	-0.18	-0.10	
93	4th Sand	-0.42	-0.32	-0.08	
94	50 Foot	-0.34	-0.26	-0.07	
95	Injun/Weir	-0.51	-0.26	-0.09	
96	Maxton	-0.70	-0.27	-0.08	
109	Trenton/Deeper *	-0.33	-0.19	-0.08	
110	Marcellus *	-0.33	-0.19	-0.08	
9	Exception (Median)	-0.33	-0.19	-0.08	
10	Non-Filer	-0.19	-0.07	-0.04	

	Decline Rates for Natural Gas and Oil Formations: South West						
South West: Cabell, Lincoln, Logan, Mingo, Wayne							
Code	Formation	Year 1	Year 2	Year 3 -			
3	Devonian Shale	-0.31	-0.15	-0.04			
8	Berea	-0.36	-0.11	-0.11			
18	Big Injun	-0.38	-0.22	-0.04			
22	Big Lime	-0.19	-0.19	-0.19			
43	Berea, Big Lime	-0.18	-0.18	-0.18			
93	4th Sand	-0.42	-0.32	-0.08			
94	50 Foot	-0.34	-0.26	-0.07			
95	Injun/Weir	-0.51	-0.26	-0.09			
96	Maxton	-0.70	-0.27	-0.08			
109	Trenton/Deeper *	-0.38	-0.22	-0.10			
110	Marcellus *	-0.38	-0.22	-0.10			
9	Exception (Median)	-0.38	-0.22	-0.10			
10	Non-Filer	-0.18	-0.11	-0.04			

	Decline Rates for Natural Gas and Oil Formations: West Central West Central: Calhoun, Roane, Wirt			
Code		Year 1	Year 2	Year 3 +
2	Huron, Rhinestreet	-0.49	-0.11	-0.06
4	Huron	-0.33	-0.22	-0.14
27	Huron, Shales above Huron	-0.42	-0.23	-0.12
44	Rhinestreet, Huron, Shallow Shale	-0.51	-0.14	-0.11
45	Devonian Shale, Pocono	-0.25	-0.17	-0.12
46	Pocono	-0.29	-0.25	-0.12
84	Big Injun, Oil	-0.41	-0.41	-0.11
93	4th Sand	-0.42	-0.32	-0.08
94	50 Foot	-0.34	-0.26	-0.07
95	Injun/Weir	-0.51	-0.26	-0.09
96	Maxton	-0.70	-0.27	-0.08
109	Trenton/Deeper *	-0.42	-0.24	-0.10
110	Marcellus *	-0.42	-0.24	-0.10
9	Exception (Median)	-0.42	-0.24	-0.10
10	Non-Filer	-0.25	-0.11	-0.06

	Decline Rates for Natural Gas a	nd Oil Formation	ns: West	t
West: Jackson, Mason, Putnam				
Code	Formation	Year 1	Year 2	Year 3 +
1	Oriskany	-0.40	-0.40	-0.29
2	Huron, Rhinestreet	-0.13	-0.12	-0.03
3	Devonian Shale	-0.31	-0.15	-0.04
4	Huron	-0.29	-0.14	-0.05
5	Huron, Shales above Huron	-0.38	-0.15	-0.06
6	Huron, Berea	-0.29	-0.08	-0.08
7	Berea, Devonian Shale	-0.08	-0.08	-0.08
8	Berea	-0.36	-0.16	-0.16
93	4th Sand	-0.42	-0.32	-0.08
94	50 Foot	-0.34	-0.26	-0.07
95	Injun/Weir	-0.51	-0.26	-0.09
96	Maxton	-0.70	-0.27	-0.08
109	Trenton/Deeper *	-0.35	-0.20	-0.09
110	Marcellus *	-0.35	-0.20	-0.09
9	Exception (Median)	-0.35	-0.20	-0.09
10	Non-Filer	-0.08	-0.08	-0.03

# Industry Operating Expense Survey and Results

This component was determined through a review of responses to a survey distributed by the State Tax Department to producers of all oil and natural gas wells producing in West Virginia and through use of other market data.

# GAS

-	% Working Interest Expenses		
	for Typical Producing Well	=	40%
-	Maximum Operating Expenses	=	\$5,000
-	Coal Bed Methane, Vertical Wells		
	Expenses	=	\$9,000

# OIL

- % Working Interest Expenses		
for Typical Producing Well	=	35%
- Maximum Operating Expenses	=	\$5,750
- Maximum Enhanced Operating		
Expenses	=	\$9,000

# MARCELLUS/UTICA

- % Working Interest Expenses		
for Vertical Producing Well	=	30%
- Maximum Operating Expenses	—	\$30,000

- % Working Interest Expenses		
for Horizontal Producing Well	=	20%
<ul> <li>Maximum Operating Expenses</li> </ul>	=	\$175,000

# HORIZONTAL WELLS (OTHER THAN MARCELLUS/UTICA AND COAL BED METHANE)

- % Working Interest Expenses		
for Horizontal Producing Well	=	30%
- Maximum Operating Expenses	=	\$20,000

Minimum Working Interest Appraisal = \$500 per well

Flat Rate Royalty Multiplier = 5.75

Home Use Only Wells:	Appraised at \$500 per well
Industrial Use Only Wells:*	MCF usage X \$ 2.99/MCF BBL usage X \$50.80/BBL
*(Also includes Department of Envir	onmental Protection reported wells.)

# Non-Filer Valuations

Working Interest	=	150% of previous year's appraisal
Royalty Interest	=	90% of previous year's appraisal

## Valuation

The previously discussed variables are used to establish a future income stream converted to present worth through application of a capitalization rate. The sum of the discounted future net income per year represents a reasonable estimate of market value.

# Lease Rate/Term Survey and Results

The non-producing property value for each county is determined by multiplying the average delay rental by a factor, which represents the average lease term under present economic conditions.

As a result of higher lease terms being inversely proportional to the value of oil and gas (thus counties with little leasing or production activities reflect inflated values) and with the volatile nature of county activity, necessary adjustments in the review have been made.

A compilation of lease terms produced a statewide average of 5 years. This term (5 years) was applied to all county lease rates and compared to the appraisal rates derived from calculations using individual county data as well as regional data. The resulting calculations were reviewed and considered in the assignment of an appraisal rate per acre.

The appraisal rate/acre amounts shown on the next page are preliminary figures, which may change if additional lease data is received. These rates have been applied to all county magisterial districts with either producing wells, lease activity within the past 5 years or both. Tax districts void of activity within the past 5 years have been assigned the minimum value per acre.

OIL & GAS RESERVE RATES FOR TY 2019 COUNTY	CO #	DISTRICT #	TY2018 \$/AC
BARBOUR	1	1	\$60.00
		2	\$1.00
		3	\$60.00
		4	\$60.00
		5	\$60.00
		6	\$1.00
		7	\$60.00
		8	\$60.00
		9	\$60.00
		10	\$60.00
		11	\$60.00
BERKELEY	2	1	\$1.00
		2	\$1.00
		3	\$1.00
		4	\$1.00
		5	\$1.00
		6	\$1.00
		7	\$1.00
		8	\$1.00
BOONE	3	1	\$20.00
		2	\$1.00
		3	\$1.00
		4	\$20.00
		5	\$20.00
		6	\$20.00
		7	\$1.00
		8	\$20.00
		9	\$1.00
BRAXTON	4	1	\$20.00
		2	\$1.00
		3	\$1.00
		4	\$1.00
		5	\$20.00
		6	\$20.00
		7	\$20.00
		8	\$1.00
BROOKE	5	1	\$1.00
		2	\$1.00
		3	\$100.00
		4	\$100.00
		5	\$1.00
		6	\$1.00
		7	\$1.00
		8	\$1.00

COUNTY	CO #	DISTRICT #	TY2018 \$/AC
CABELL	6	1	\$25.00
		2	\$1.00
		3	\$25.00
		4	\$25.00
		5	\$1.00
		6	\$1.00
		7	\$1.00
		8	\$25.00
		9	\$1.00
		10	\$25.00
CALHOUN	7	1	\$30.00
		2	\$1.00
		3	\$30.00
		4	\$30.00
		5	\$30.00
		6	\$30.00
CLAY	8	1	\$20.00
		2	\$1.00
		3	\$20.00
		4	\$20.00
		5	\$20.00
		6	\$20.00
		0	020.00
DODDRIDGE	9	1	\$95.00
DODDINDOL		2	\$95.00
		3	\$95.00
		4	\$95.00
		5	\$95.00
		6	\$95.00
		7	\$95.00
		8	\$95.00
		9	\$1.00
			51.00
FAYETTE	10	1	\$20.00
		2	\$20.00
		3	\$20.00
		4	\$1.00
		5	\$1.00
		6	\$1.00
		7	\$1.00
		8	\$1.00
		9	\$1.00
		10	\$1.00
		11	\$1.00
		12	\$1.00
		13	\$1.00

COUNTY	CO #	DISTRICT #	TY2018 \$/AC
GILMER	11	1	\$25.00
		2	\$25.00
		3	\$25.00
		4	\$1.00
		5	\$1.00
		6	\$25.00
GRANT	12	1	\$1.00
		2	\$1.00
		3	\$1.00
		4	\$1.00
		5	\$1.00
GREENBRIER	13	1	\$1.00
GREENDRIER	13	2	\$1.00
		3	\$1.00
		4	\$1.00
		5	\$1.00
		6	\$1.00
		7	\$1.00
		8	\$1.00
		9	\$1.00
		10	\$1.00
		11	\$1.00
		12	\$1.00
		13	\$1.00
		14	\$1.00
	*	15	\$1.00
		16	\$1.00
		17	\$1.00
		18	\$1.00
HAMPSHIRE	14	1	\$1.00
		2	\$1.00
		3	\$1.00
		4	\$1.00
		5	\$1.00
	4	6	\$1.00
		8	\$1.00
		9	\$1.00 \$1.00
		10	
		10	\$1.00
HANCOCK	15	1	\$25.00
		2	\$1.00
		3	\$25.00
		4	\$25.00
		5	\$1.00
		6	\$1.00

COUNTY	CO #	DISTRICT #	TY2018 \$/AC
HARDY	16	1	\$1.00
		2	\$1.00
		3	\$1.00
		4	\$1.00
		5	\$1.00
		6	\$1.00
HARRISON	17	1	\$90.00
		2	\$1.00
		3	\$1.00
		4	\$1.00
		5	\$90.00
		6	\$1.00
		7	\$90.00
		8	\$1.00
		9	\$90.00
		10	\$1.00
		11	\$90.00
		12	\$90.00
		13	\$1.00
		14	\$90.00
		15	\$90.00
		16	\$1.00
		17	\$1.00
		18	\$90.00
		19	\$1.00
		20	\$90.00
		21	\$1.00
JACKSON	18	1	\$40.00
on on the second s		2	\$40.00
		3	\$1.00
		4	\$40.00
		5	\$1.00
		6	\$40.00
		7	\$40.00
JEFFERSON	19	1	\$1.00
		2	\$1.00
		3	\$1.00
		4	\$1.00
		5	\$1.00
		6	\$1.00
		7	\$1.00
		8	\$1.00
		9	\$1.00
		10	\$1.00

COUNTY	CO #	DISTRICT #	TY2018 \$/AC
KANAWHA	20	1	\$30.00
		2	\$1.00
		3	\$30.00
		4	\$1.00
		5	\$1.00
		6	\$1.00
		7	\$1.00
		8	\$1.00
		9	\$1.00
		10	\$1.00
		11	\$1.00
		12	\$1.00
	-	13	\$1.00
		14	\$1.00
		15	\$30.00
		16	\$30.00
		17	\$1.00
		18	\$1.00
		19	\$30.00
		20	\$1.00
		21	\$1.00
		22	\$1.00
		23	\$30.00
		24	\$30.00
	i	25	\$30.00
		26	\$1.00
		27	\$1.00
		28	\$30.00
		29	\$1.00
		30	\$1.00
		31	\$1.00
LEWIS	21	1	\$35.00
		2	\$35.00
		3	\$35.00
		4	\$35.00
		5	\$1.00
		6	\$35.00
		7	\$1.00
		8	\$1.00
		9	\$1.00
LINCOLN	22	1	\$25.00
		2	\$25.00
		3	\$1.00
		4	\$25.00
		5	\$25.00
		6	\$25.00
		7	\$25.00
		8	\$25.00
		9	\$25.00
		10	\$1.00

COUNTY	CO #	DISTRICT #	TY2018 \$/AC
LOGAN	23	1	\$15.00
		2	\$15.00
		3	\$15.00
		4	\$15.00
		5	\$1.00
		6	\$1.00
		7	\$1.00
		8	\$15.00
		9	\$1.00
MARION	24	1	\$1.00
		2	\$90.00
		3	\$1.00
		4	\$1.00
		5	\$1.00
		6	\$1.00
		7	\$1.00
		8	\$1.00
		9	\$90.00
		10	\$1.00
	-	11	\$90.00
		12	\$90.00
		13	\$1.00
		14	\$1.00
		15	\$1.00
		16	\$90.00
		17	\$1.00
		18	\$90.00
		19	\$90.00
		20	\$1.00
		20	
			\$1.00
		22	\$1.00
MADOUAL	0.5		\$4.00
MARSHALL	25	1	\$1.00
	1	2	\$1.00
		3	\$100.00
		4	\$100.00
		5	\$100.00
		6	\$1.00
		7	\$100.00
		8	\$1.00
		9	\$100.00
		10	\$1.00
		11	\$1.00
		12	\$100.00
		13	\$100.00
		14	\$100.00
		15	\$100.00
		16	\$1.00

COUNTY	CO #	DISTRICT #	TY2018 \$/AC
MASON	26	1	\$1.00
		2	\$25.00
		3	\$25.00
		4	\$25.00
		5	\$25.00
		6	\$25.00
		7	\$1.00
		8	\$1.00
		9	\$1.00
		10	\$25.00
		11	\$1.00
		12	\$1.00
		13	\$1.00
		14	\$25.00
		15	\$25.00
		16	\$25.00
MC DOWELL	27	1	\$20.00
		2	\$1.00
		3	\$20.00
		4	\$20.00
	1	5	\$1.00
		6	\$20.00
		7	\$1.00
	1	8	\$1.00
		9	\$1.00
		10	\$1.00
		11	\$20.00
		12	\$1.00
		13	\$20.00
		14	\$1.00
		15	\$1.00
		16	\$1.00
MERCER	28	1	\$1.00
		2	\$15.00
		3	\$1.00
		4	\$1.00
		5	\$1.00
		6	\$15.00
		7	\$1.00
		8	\$1.00
		9	\$15.00
		10	\$1.00
		11	\$15.00
			\$10.00

MINERAL         29         1         \$1.00           2         \$1.00           3         \$200           4         \$1.00           5         \$1.00           6         \$1.00           6         \$1.00           7         \$1.00           8         \$1.00           9         \$1.00           9         \$1.00           9         \$1.00           9         \$1.00           9         \$1.00           9         \$1.00           9         \$1.00           9         \$1.00           9         \$1.00           9         \$1.00           9         \$20.00           10         \$20.00           10         \$20.00           10         \$20.00           10         \$20.00           11         \$20.00           12         \$1.00           13         \$1.00           14         \$20.00           15         \$1.00           16         \$1.00           17         \$1.00           18         \$1.00           19	COUNTY	CO #	DISTRICT #	TY2018 \$/AC
2         \$1.00           3         \$1.00           4         \$1.00           5         \$1.00           6         \$1.00           7         \$1.00           8         \$1.00           9         \$1.00           10         \$1.00           11         \$1.00           10         \$1.00           11         \$1.00           11         \$1.00           11         \$1.00           11         \$1.00           11         \$1.00           11         \$1.00           11         \$1.00           11         \$1.00           12         \$1.00           13         \$20.00           15         \$20.00           10         \$20.00           11         \$20.00           12         \$1.00           14         \$20.00           15         \$30.00           16         \$31.00           12         \$1.00           14         \$30.00           5         \$30.00           5         \$30.00           6         \$1.00	MINERAL	29	1	\$1.00
4         \$1.00           5         \$1.00           6         \$1.00           7         \$1.00           8         \$1.00           9         \$1.00           10         \$1.00           11         \$1.00           10         \$1.00           11         \$1.00           10         \$1.00           11         \$1.00           11         \$1.00           11         \$1.00           11         \$1.00           11         \$1.00           11         \$1.00           12         \$1.00           3         \$20.00           5         \$20.00           6         \$22.00           6         \$22.00           9         \$20.00           11         \$20.00           11         \$20.00           11         \$20.00           12         \$1.00           13         \$31.00           14         \$30.00           5         \$30.00           6         \$1.00           10         \$1.00      \$1.00         \$1.00				\$1.00
5         \$1.00           6         \$1.00           7         \$1.00           8         \$1.00           9         \$1.00           10         \$1.00           10         \$1.00           10         \$1.00           11         \$1.00           12         \$1.00           33         \$20.00           34         \$20.00           5         \$20.00           6         \$20.00           7         \$20.00           7         \$20.00           11         \$20.00           12         \$1.00           13         \$20.00           14         \$20.00           15         \$30.00           16         \$1.00           17         \$30.00           18         \$30.00           5         \$30.00           5         \$30.00           5         \$30.00           5         \$30.00           5         \$30.00           5         \$30.00           5         \$30.00           5         \$30.00           6         \$1.00 </td <td></td> <td></td> <td>3</td> <td>\$1.00</td>			3	\$1.00
6         \$1.00           7         \$51.00           8         \$11.00           9         \$10.00           10         \$1.00           10         \$1.00           11         \$1.00           12         \$1.00           13         \$20.00           3         \$20.00           4         \$20.00           5         \$20.00           6         \$20.00           7         \$20.00           7         \$20.00           9         \$20.00           11         \$20.00           12         \$1.00           20.01         \$3           10         \$20.00           11         \$20.00           12         \$1.00           13         \$30.00           14         \$30.00           5         \$30.00           5         \$30.00           5         \$30.00           5         \$30.00           5         \$30.00           6         \$1.00           10         \$1.00           11         \$1.00           13         \$1.00		_	4	\$1.00
7         \$1.00           8         \$1.00           9         \$1.00           10         \$1.00           11         \$1.00           11         \$1.00           11         \$1.00           30         1           11         \$1.00           30         1           11         \$1.00           30         1           31         \$20.00           3         \$20.00           5         \$20.00           6         \$20.00           7         \$20.00           11         \$20.00           9         \$20.00           11         \$20.00           11         \$20.00           11         \$20.00           11         \$20.00           11         \$20.00           11         \$20.00           11         \$20.00           11         \$20.00           11         \$20.00           11         \$20.00           11         \$20.00           12         \$1.00           5         \$30.00           5         \$30.00			5	\$1.00
8         \$1.00           9         \$1.00           10         \$1.00           11         \$1.00           10         \$1.00           11         \$1.00           11         \$1.00           12         \$1.00           13         \$20.00           14         \$20.00           15         \$20.00           6         \$20.00           7         \$20.00           8         \$1.00           9         \$20.00           10         \$20.00           11         \$20.00           12         \$1.00           13         \$1.00           14         \$20.00           15         \$3.00           10         \$20.00           11         \$20.00           12         \$1.00           12         \$1.00           12         \$1.00           13         \$1.00           14         \$30.00           5         \$30.00           6         \$1.00           10         \$1.00           10         \$1.00           10         \$1.00			6	\$1.00
9         \$1.00           10         \$1.00           11         \$1.00           11         \$1.00           11         \$1.00           11         \$1.00           12         \$1.00           30         1         \$1.00           31         \$20.00         3         \$20.00           4         \$20.00         5         \$20.00           5         \$20.00         6         \$20.00           6         \$20.00         8         \$1.00           9         \$20.00         8         \$1.00           9         \$20.00         10         \$20.00           10         \$20.00         11         \$20.00           11         \$20.00         12         \$1.00           12         \$1.00         \$20.00         12         \$1.00           12         \$1.00         \$3         \$30.00         \$3         \$30.00           3         \$30.00         \$3         \$30.00         \$3         \$30.00           5         \$30.00         \$3         \$30.00         \$3         \$30.00           6         \$1.00         \$1.00         \$1.00 <td< td=""><td></td><td></td><td>7</td><td>\$1.00</td></td<>			7	\$1.00
10         \$1.00           111         \$1.00           MINGO         30         1         \$1.00           2         \$1.00         2         \$1.00           30         1         \$1.00         2           30         1         \$1.00         2           31         \$20.00         5         \$20.00           5         \$20.00         5         \$20.00           6         \$20.00         10         \$20.00           9         \$20.00         11         \$20.00           10         \$20.00         11         \$20.00           11         \$20.00         11         \$20.00           11         \$20.00         11         \$20.00           11         \$20.00         11         \$20.00           11         \$20.00         11         \$20.00           11         \$20.00         11         \$20.00           11         \$20.00         11         \$20.00           12         \$1.00         \$20.00         \$3         \$30.00           3         \$30.00         \$3         \$30.00         \$3         \$30.00           5         \$30.00			8	\$1.00
MINGO         30         1         \$1.00           MINGO         30         1         \$1.00           2         \$1.00         2         \$1.00           3         \$20.00         4         \$20.00           4         \$20.00         5         \$20.00           5         \$20.00         6         \$20.00           7         \$20.00         8         \$1.00           9         \$22.00         9         \$20.00           10         \$20.00         11         \$20.00           11         \$20.00         12         \$1.00           11         \$20.00         12         \$1.00           11         \$20.00         12         \$1.00           12         \$1.00         \$20.00         12         \$1.00           12         \$1.00         \$20.00         \$3         \$30.00           12         \$1.00         \$3.0.00         \$3         \$30.00           12         \$1.00         \$3.0.00         \$3         \$30.00           5         \$30.00         \$3         \$30.00         \$3           5         \$30.00         \$3         \$30.00         \$3			9	\$1.00
MINGO         30         1         \$1.00           2         \$1.00           3         \$20.00           3         \$20.00           4         \$20.00           5         \$20.00           6         \$20.00           7         \$20.00           8         \$1.00           9         \$20.00           10         \$20.00           11         \$20.00           10         \$20.00           11         \$20.00           11         \$20.00           11         \$20.00           12         \$1.00           12         \$1.00           12         \$1.00           3         \$30.00           4         \$30.00           5         \$33.00           6         \$1.00           6         \$1.00           7         \$30.00           8         \$30.00           9         \$1.00           10         \$1.00           11         \$1.00           12         \$1.00           13         \$1.00           14         \$1.00			10	\$1.00
2         \$1.00           3         \$20.00           4         \$20.00           5         \$20.00           6         \$20.00           7         \$20.00           8         \$1.00           9         \$20.00           10         \$20.00           11         \$20.00           11         \$20.00           11         \$20.00           11         \$20.00           11         \$20.00           11         \$20.00           12         \$1.00           2         \$1.00           3         \$30.00           3         \$30.00           3         \$30.00           4         \$30.00           5         \$30.00           5         \$30.00           6         \$1.00           7         \$30.00           8         \$30.00           9         \$1.00           10         \$1.00           11         \$1.00           12         \$1.00           13         \$1.00           13         \$1.00           14         \$1.00 </td <td></td> <td></td> <td>11</td> <td>\$1.00</td>			11	\$1.00
2         \$1.00           3         \$20.00           4         \$20.00           5         \$20.00           6         \$20.00           7         \$20.00           8         \$1.00           9         \$20.00           10         \$20.00           11         \$20.00           11         \$20.00           11         \$20.00           11         \$20.00           11         \$20.00           11         \$20.00           12         \$1.00           2         \$1.00           3         \$30.00           3         \$30.00           3         \$30.00           4         \$30.00           5         \$30.00           5         \$30.00           6         \$1.00           7         \$30.00           8         \$30.00           9         \$1.00           10         \$1.00           11         \$1.00           12         \$1.00           13         \$1.00           13         \$1.00           14         \$1.00 </td <td></td> <td></td> <td></td> <td></td>				
3         \$20.00           4         \$20.00           5         \$20.00           6         \$20.00           7         \$20.00           8         \$1.00           9         \$20.00           10         \$20.00           11         \$20.00           12         \$1.00           11         \$20.00           12         \$1.00           12         \$1.00           12         \$1.00           3         \$30.00           4         \$30.00           5         \$30.00           6         \$1.00           3         \$30.00           6         \$1.00           7         \$30.00           6         \$1.00           7         \$30.00           8         \$30.00           9         \$1.00           10         \$1.00           11         \$1.00           12         \$1.00           13         \$1.00           14         \$1.00           15         \$1.00           16         \$1.00           17         \$1.00	MINGO	30		
4         \$20.00           5         \$20.00           6         \$20.00           7         \$20.00           8         \$1.00           9         \$20.00           10         \$20.00           11         \$20.00           11         \$20.00           11         \$20.00           11         \$20.00           12         \$1.00           12         \$1.00           12         \$1.00           3         \$30.00           4         \$30.00           5         \$30.00           6         \$1.00           7         \$30.00           8         \$30.00           9         \$1.00           7         \$30.00           8         \$30.00           9         \$1.00           10         \$1.00           11         \$1.00           12         \$1.00           13         \$1.00           14         \$1.00           15         \$1.00           16         \$1.00           16         \$1.00           17         \$1.00 <td></td> <td></td> <td></td> <td></td>				
5         \$20.00           6         \$20.00           7         \$20.00           8         \$1.00           9         \$20.00           10         \$20.00           11         \$20.00           12         \$1.00           11         \$20.00           11         \$20.00           12         \$1.00           12         \$1.00           2         \$1.00           3         \$30.00           4         \$30.00           5         \$30.00           6         \$1.00           7         \$30.00           6         \$1.00           7         \$30.00           8         \$30.00           9         \$1.00           10         \$1.00           11         \$1.00           12         \$1.00           13         \$1.00           14         \$1.00           15         \$1.00           16         \$1.00           15         \$1.00           16         \$1.00           17         \$1.00           18         \$30.00 <td></td> <td></td> <td></td> <td></td>				
6         \$20.00           7         \$20.00           8         \$1.00           9         \$20.00           10         \$20.00           11         \$20.00           11         \$20.00           12         \$1.00           12         \$1.00           12         \$1.00           3         \$30.00           4         \$30.00           5         \$30.00           6         \$1.00           3         \$30.00           5         \$30.00           6         \$1.00           7         \$30.00           8         \$30.00           9         \$1.00           11         \$1.00           12         \$1.00           13         \$1.00           14         \$1.00           15         \$1.00           16         \$1.00           16         \$1.00           16         \$1.00           17         \$1.00           18         \$30.00				
7         \$20.00           8         \$1.00           9         \$20.00           10         \$20.00           11         \$20.00           11         \$20.00           12         \$1.00           12         \$1.00           2         \$1.00           31         1           33         \$30.00           4         \$30.00           4         \$30.00           5         \$30.00           6         \$1.00           7         \$30.00           8         \$30.00           9         \$1.00           10         \$1.00           11         \$1.00           10         \$1.00           11         \$1.00           11         \$1.00           12         \$1.00           13         \$1.00           13         \$1.00           13         \$1.00           14         \$1.00           15         \$1.00           16         \$1.00           16         \$1.00           17         \$1.00           18         \$30.00  <				
8         \$1.00           9         \$20.00           10         \$20.00           11         \$20.00           11         \$20.00           12         \$1.00           12         \$1.00           2         \$1.00           3         \$30.00           2         \$1.00           3         \$30.00           4         \$30.00           5         \$30.00           6         \$1.00           7         \$30.00           8         \$30.00           9         \$1.00           7         \$30.00           8         \$30.00           9         \$1.00           10         \$1.00           11         \$1.00           11         \$1.00           11         \$1.00           11         \$1.00           11         \$1.00           13         \$1.00           14         \$1.00           15         \$1.00           16         \$1.00           16         \$1.00           17         \$1.00           18         \$30.00		+		
9         \$20.00           10         \$20.00           11         \$20.00           11         \$20.00           12         \$1.00           12         \$1.00           2         \$1.00           3         \$30.00           4         \$30.00           4         \$30.00           5         \$30.00           6         \$1.00           7         \$30.00           8         \$30.00           9         \$1.00           10         \$1.00           11         \$1.00           13         \$1.00           14         \$1.00           15         \$1.00           14         \$1.00           15         \$1.00           16         \$1.00           16         \$1.00           17         \$1.00           18         \$30.00				
10         \$20.00           11         \$20.00           12         \$1.00           12         \$1.00           12         \$1.00           12         \$1.00           12         \$1.00           12         \$1.00           12         \$1.00           12         \$1.00           12         \$1.00           12         \$1.00           13         \$30.00           14         \$30.00           15         \$30.00           10         \$1.00           11         \$1.00           10         \$1.00           11         \$1.00           11         \$1.00           11         \$1.00           13         \$1.00           14         \$1.00           15         \$1.00           16         \$1.00           16         \$1.00           17         \$1.00           18         \$30.00				
11         \$20.00           12         \$1.00           12         \$1.00           12         \$1.00           12         \$1.00           12         \$1.00           12         \$1.00           12         \$1.00           12         \$1.00           12         \$1.00           12         \$1.00           13         \$30.00           16         \$1.00           11         \$1.00           11         \$1.00           11         \$1.00           11         \$1.00           11         \$1.00           11         \$1.00           11         \$1.00           11         \$1.00           13         \$1.00           14         \$1.00           15         \$1.00           16         \$1.00           17         \$1.00           18         \$30.00				
12         \$1.00           MONONGALIA         31         1         \$30.00           2         \$1.00         3         \$30.00           3         \$30.00         4         \$30.00           4         \$30.00         5         \$30.00           5         \$30.00         6         \$1.00           6         \$1.00         7         \$30.00           7         \$30.00         8         \$30.00           8         \$30.00         8         \$30.00           9         \$1.00         10         \$1.00           10         \$1.00         \$1.00         \$1.00           11         \$1.00         \$1.00         \$1.00           11         \$1.00         \$1.00         \$1.00           13         \$1.00         \$1.00         \$1.00           15         \$1.00         \$1.00         \$1.00           16         \$1.00         \$1.00         \$1.00           16         \$1.00         \$1.00         \$1.00           18         \$30.00         \$30.00         \$30.00				
MONONGALIA         31         1         \$30.00           2         \$1.00         3         \$30.00           3         \$30.00         4         \$30.00           4         \$30.00         5         \$30.00           5         \$30.00         6         \$1.00           6         \$1.00         7         \$30.00           7         \$30.00         8         \$30.00           8         \$30.00         9         \$1.00           10         \$1.00         10         \$1.00           10         \$1.00         11         \$1.00           11         \$1.00         11         \$1.00           12         \$1.00         13         \$1.00           13         \$1.00         14         \$1.00           15         \$1.00         16         \$1.00           16         \$1.00         16         \$1.00           17         \$1.00         18         \$30.00				
2         \$1.00           3         \$30.00           4         \$30.00           5         \$30.00           6         \$1.00           7         \$30.00           8         \$30.00           9         \$1.00           10         \$1.00           11         \$1.00           12         \$1.00           13         \$1.00           14         \$1.00           15         \$1.00           16         \$1.00           17         \$1.00           18         \$30.00				
3         \$30.00           4         \$30.00           5         \$30.00           6         \$1.00           7         \$30.00           8         \$30.00           9         \$1.00           10         \$1.00           11         \$1.00           12         \$1.00           13         \$1.00           14         \$1.00           15         \$1.00           16         \$1.00           17         \$1.00           18         \$30.00	MONONGALIA	31	1	\$30.00
4       \$30.00         5       \$30.00         6       \$1.00         7       \$30.00         8       \$30.00         9       \$1.00         9       \$1.00         10       \$1.00         11       \$1.00         11       \$1.00         12       \$1.00         13       \$1.00         14       \$1.00         15       \$1.00         16       \$1.00         17       \$1.00         18       \$30.00			2	\$1.00
5         \$30.00           6         \$1.00           7         \$30.00           8         \$30.00           9         \$1.00           10         \$1.00           11         \$1.00           12         \$1.00           13         \$1.00           14         \$1.00           15         \$1.00           16         \$1.00           17         \$1.00           18         \$30.00			3	\$30.00
6         \$1.00           7         \$30.00           8         \$30.00           9         \$1.00           10         \$1.00           11         \$1.00           12         \$1.00           13         \$1.00           14         \$1.00           15         \$1.00           16         \$1.00           17         \$1.00           18         \$30.00			4	\$30.00
7         \$30.00           8         \$30.00           9         \$1.00           10         \$1.00           11         \$1.00           12         \$1.00           13         \$1.00           14         \$1.00           15         \$1.00           16         \$1.00           17         \$1.00           18         \$30.00		-	5	\$30.00
8         \$30.00           9         \$1.00           10         \$1.00           11         \$1.00           11         \$1.00           12         \$1.00           13         \$1.00           14         \$1.00           15         \$1.00           16         \$1.00           17         \$1.00           18         \$30.00			6	\$1.00
9         \$1.00           10         \$1.00           11         \$1.00           11         \$1.00           12         \$1.00           13         \$1.00           14         \$1.00           15         \$1.00           16         \$1.00           17         \$1.00           18         \$30.00			7	\$30.00
10         \$1.00           11         \$1.00           12         \$1.00           13         \$1.00           14         \$1.00           15         \$1.00           16         \$1.00           17         \$1.00           18         \$30.00		_		\$30.00
11         \$1.00           12         \$1.00           13         \$1.00           14         \$1.00           15         \$1.00           16         \$1.00           17         \$1.00           18         \$30.00				
12     \$1.00       13     \$1.00       14     \$1.00       15     \$1.00       16     \$1.00       17     \$1.00       18     \$30.00				
13         \$1.00           14         \$1.00           15         \$1.00           16         \$1.00           17         \$1.00           18         \$30.00		-		
14         \$1.00           15         \$1.00           16         \$1.00           17         \$1.00           18         \$30.00				
15         \$1.00           16         \$1.00           17         \$1.00           18         \$30.00				
16         \$1.00           17         \$1.00           18         \$30.00				
17         \$1.00           18         \$30.00				
18 \$30.00				
19 \$1.00				
			19	\$1.00

COUNTY	CO #	DISTRICT #	TY2018 \$/AC
MONROE	32	1	\$1.00
		2	\$1.00
		3	\$1.00
		4	\$1.00
		5	\$1.00
		6	\$1.00
		7	\$1.00
		8	\$1.00
		9	\$1.00
MORGAN	33	1	\$1.00
		2	\$1.00
		3	\$1.00
		4	\$1.00
		5	\$1.00
		6	\$1.00
		7	\$1.00
		8	\$1.00
NICHOLAS	34	1	\$1.00
		2	\$15.00
		3	\$15.00
		4	\$15.00
		5	\$1.00
		6	\$1.00
		7	\$15.00
		8	\$1.00
		9	\$1.00
OHIO	35	1	\$1.00
		2	\$1.00
		3	\$100.00
		4	\$100.00
	1	5	\$1.00
		6	\$100.00
		7	\$1.00
		8	\$1.00
		9	\$1.00
		10	\$1.00
PENDLETON	36	1	\$1.00
		2	\$10.00
		3	\$1.00
		4	\$1.00
		5	\$1.00
		6	\$1.00
		7	\$10.00

COUNTY	CO #	DISTRICT #	TY2018 \$/AC
PLEASANTS	37	1	\$45.00
		2	\$45.00
		3	\$45.00
		4	\$45.00
		5	\$45.00
		6	\$1.00
		7	\$45.00
		8	\$45.00
POCAHONTAS	38	1	\$1.00
		2	\$1.00
	-	3	\$1.00
	-	4	\$1.00
		5	\$1.00
		6	\$1.00
		7	\$1.00
	1	8	\$1.00
	1	Ø	91.T¢
PRESTON	39	1	\$30.00
FRESTON	35		
		2	\$30.00
		3	\$30.00
	-	4	\$30.00
		5	\$30.00
		6	\$30.00
		7	\$1.00
		8	\$30.00
		9	\$1.00
		10	\$30.00
		11	\$1.00
		12	\$1.00
		13	\$1.00
		14	\$1.00
		15	\$1.00
		16	\$1.00
		17	\$1.00
		18	\$1.00
		19	\$1.00
		20	\$1.00
PUTNAM	40	1	\$25.00
		2	\$25.00
		3	\$1.00
		4	\$25.00
		5	\$1.00
		6	\$1.00
		7	\$1.00
		8	\$25.00
		9	\$1.00
		10	\$25.00
		11	\$25.00
		12	\$25.00
		13	\$1.00
			<b><i>w</i>1.00</b>

COUNTY	CO #	DISTRICT #	TY2018 \$/AC
RALEIGH	41	1	\$20.00
		2	\$20.00
		3	\$1.00
		4	\$1.00
		5	\$20.00
		6	\$1.00
		7	\$20.00
		8	\$20.00
		9	\$20.00
		10	\$1.00
		11	\$20.00
		12	\$20.00
RANDOLPH	42	1	\$20.00
		2	\$20.00
		3	\$1.00
		4	\$20.00
		5	\$1.00
		6	\$1.00
		7	\$1.00
		8	\$1.00
		9	\$1.00
		10	\$20.00
		11	\$20.00
		12	\$1.00
		13	\$1.00
		14	\$1.00
		15	\$1.00
		16	\$20.00
		17	\$1.00
		18	\$1.00
RITCHIE	43	1	\$75.00
		2	\$1.00
		3	\$75.00
		4	\$1.00
		5	\$75.00
		6	\$1.00
		7	\$75.00
		8	\$1.00
		9	\$1.00
		10	\$75.00

COUNTY	CO #	DISTRICT #	TY2018 \$/AC
ROANE	44	1	\$35.00
		2	\$35.00
		3	\$35.00
		4	\$35.00
		5	\$1.00
		6	\$35.00
		7	\$35.00
		8	\$1.00
	-	9	\$35.00
SUMMERS	45	1	\$1.00
COMMENCE		2	\$1.00
	Î.	3	\$1.00
		4	\$1.00
		5	\$5.00
	-	6	\$1.00
		7	\$1.00
TAYLOR	46	1	\$1.00
		2	\$1.00
		3	\$90.00
		4	\$90.00
		5	\$90.00
		6	\$90.00
		7	\$90.00
TUCKER	47	1	\$15.00
		2	\$15.00
		3	\$1.00
		4	\$1.00
		5	\$15.00
		6	\$1.00
		7	\$1.00
		8	\$1.00
		9	\$15.00
		10	\$1.00
		11	\$15.00
		12	\$1.00
	+ +		

COUNTY	CO #	DISTRICT #	TY2018 \$/AC
TYLER	48	1	\$95.00
		2	\$95.00
		3	\$1.00
	-	4	\$95.00
		5	\$95.00
		6	\$95.00
		7	\$1.00
		8	\$1.00
		9	\$1.00
		10	\$95.00
UPSHUR	49	1	\$70.00
GEGHOR	43	2	\$70.00
	1	3	\$1.00
	-	4	\$70.00
		5	\$70.00
		6	\$70.00
		7	\$70.00
			\$10.00
WAYNE	50	1	\$20.00
		2	\$20.00
		3	\$1.00
		4	\$1.00
		5	\$1.00
		6	\$1.00
		7	\$1.00
		8	\$20.00
		9	\$20.00
		10	\$20.00
		11	\$1.00
		12	\$20.00
WEBSTER	51	1	\$1.00
	U.	2	\$1.00
		3	\$1.00
	1	4	\$15.00
		5	\$15.00
		6	\$15.00
		7	\$1.00

COUNTY	CO #	DISTRICT #	TY2018 \$/AC
WETZEL	52	1	\$95.00
		2	\$95.00
		3	\$95.00
		4	\$95.00
		5	\$95.00
		6	\$1.00
		7	\$1.00
		8	\$95.00
		9	\$1.00
		10	\$1.00
		11	\$1.00
		12	\$95.00
		13	\$1.00
WIRT	53	1	\$35.00
		2	\$35.00
		3	\$35.00
		4	\$1.00
		5	\$35.00
		6	\$35.00
		7	\$35.00
		8	\$35.00
DOOM	54	1 ,	\$40.00
		2	\$40.00
		3	\$40.00
	_	4	\$40.00
		5	\$1.00
	_	6	\$40.00
		7	\$40.00
		8	\$40.00
		9	\$40.00
		10	\$1.00
		11	\$40.00
		12	\$40.00
		13	\$1.00
		14	\$1.00
	-		
WYOMING	55	1	\$20.00
		2	\$20.00
		3	\$20.00
		4	\$20.00
		5	\$20.00
	_	6	\$1.00
		7	\$20.00
		8	\$1.00
		9	\$1.00
		10	\$20.00

# MANAGED TIMBER PROPERTY ANALYSIS

Tax Year 2019

June 28, 2018 Dale W. Steager State Tax Commissioner Department of Revenue

MANAGED TIMBERLAND APPRAISAL RATES TAX YEAR 2019								
		(t	based on n	narket 2013	-2017)			
			Rates	S Per Acre	•			
Class II Parcels		<u>Grade 1</u>		<u>Grade 2</u>	<u>(</u>	Grade 3		
Region 1		\$240		\$150		\$50		
Region 2		\$235		\$145		\$50		
Region 3		\$280 \$300		\$175 \$105		\$50 \$50		
Region 4 Region 5		\$300 \$215		\$195 \$140		\$50 \$50		
Class III/IV Parce	els							
		<u>Grade 1</u>		<u>Grade 2</u>	<u>c</u>	Grade 3		
Region 1		\$225		\$150		\$75		
Region 2		\$225		\$150		\$75		
Region 3		\$245		\$155		\$75		
Region 4		\$265		\$170		\$75		
Region 5		\$225		\$150		\$75		
Region 1 =		abell, Hanco yler, Wetze			Mason, Ohio,	Pleasants,		
Region 2 =		alhoun, Cla bane, Taylor			Harrison, Lewis	, Marion, Monongalia,		
Region 3 =		Greenbrier, M Tucker, Up			lleton, Pocahor inties	ntas, Preston,		
Region 4 =	Berkeley, (	Grant, Ham	oshire, Haro	dy, Jeffersor	n, Mineral and I	Morgan Counties		
Region 5 =		yette, Kanav ummers, W		_	cDowell, Merce punties	er, Mingo		
		ŀ	larvest Vo	lumes per /	Acre			
Harvest Interval								
<u>Grades</u>		<u>35 yrs.</u>	<u>45 yrs.</u>	<u>55 yrs.</u>	<u>80 yrs.</u>	Total		
- Site Index 75 or i	more	4.6 cords		2.6 cords	3.3 cords	10.5 cords		
		1.5 Mbf		4.4 Mbf	8.6 Mbf	14.5 Mbf		
<b>e</b> :	_							
- Site Index 65 - 7	5	3.3 cords		7.0 cords		14.9 cords		
		1.0 Mbf		3.2 <u>Mbf</u>	5.5 Mbf	9.7 Mbf		
- Site Index less th	an 65		3.1 cords		15.4 cords	19 5 00540		
			0.8 Mbf		3.7 Mbf	18.5 cords 4.5 Mbf		

Estimation of Required Rate of Return: Class II Rates					
	n of Require		teturn: Class II	Rates	_
Sale Rate of P	leium (5 rear i-Bi	(Kate)			
Year	Rate	W/A %	W/A Rate		
2017	1.9100	33.33%	0.6366		
2016	1.3383	26.67%	0.3569		
2015	1.5292	20.00%	0.3058		
2014	1.6410	13.33%	0.2187	1,596	0/
2013	1.1725	6.67%	0.0782	1.596	%
Nonliquidity	Rate				
	s vs. 3 Month T-Bills)				
Year	Rate	W/A %	W/A Rate		
2017	0.2542	33.33%	0.0847		
2016	0.2950	26.67%	0.0787		
2015	0.2683	20.00% 13.33%	0.0537		
2014 2013	0.0883 0.0733	13.33% 6.67%	0.0118 0.0049	0.234	%
2015	0.0755	0.07 %	0.0043	0.234	70
Risk Rate (3 Year	0 yr T-bills vs 5 y Rate	r T-bills) W/A %	W/A Rate		
2017	0.9850	6.67%	0.0657		
2016	1.2592	13.33%	0.1679		
2015	1.3117	20.00%	0.2623		
2014 2013	1.6992 2.2758	26.67% 33.33%	0.4532 0.7585	1.708	%
2013	2.2758				
2013				1.708 0.500	%
2013	2.2758 Factor of 0.5% Component				
2013 Management <u>Property Tax</u>	2.2758 Factor of 0.5% Component				
2013 Management <u>Property Tax</u> (60% of Class II	2.2758 Factor of 0.5% Component Rate)	33.33%	0.7585		
2013 Management Property Tax (60% of Class II Year 2017	2.2758 Factor of 0.5% <u>Component</u> Rate) <u>Rate</u> 0.714	33.33% W/A % 33.33%	0.7585 W/A Rate 0.2380		
2013 Management Property Tax (60% of Class II Year 2017 2016	2.2758 Factor of 0.5% Component Rate) Rate 0.714 0.708	33.33% W/A % 33.33% 26.67%	0.7585 W/A Rate 0.2380 0.1888		
2013 Management Property Tax (60% of Class II Year 2017 2016 2015	2.2758 Factor of 0.5% Component Rate) Rate 0.714 0.708 0.714	33.33% W/A % 33.33% 26.67% 20.00%	0.7585 W/A Rate 0.2380 0.1888 0.1428		
2013 Management Property Tax 60% of Class IF 2017 2016 2015 2014	2.2758 Factor of 0.5% Component Rate) Rate 0.714 0.708 0.714 0.714 0.714	33.33% W/A % 33.33% 26.67% 20.00% 13.33%	0.7585 W/A Rate 0.2380 0.1888 0.1428 0.0952	0.500	%
2013 Management Property Tax (60% of Class II Year 2017 2016 2015 2014 2013	2.2758 Factor of 0.5% Component Rate) Rate 0.714 0.708 0.714 0.708 0.714 0.708	33.33% W/A % 33.33% 26.67% 20.00%	0.7585 W/A Rate 0.2380 0.1888 0.1428		%
2013 Management Property Tax (60% of Class II Year 2017 2016 2015 2014 2013 Inflation Rate	2.2758 Factor of 0.5% Component Rate) Rate 0.714 0.708 0.714 0.714 0.714 0.708 	33.33% W/A % 33.33% 26.67% 20.00% 13.33%	0.7585 W/A Rate 0.2380 0.1888 0.1428 0.0952	0.500	%
2013 Management Property Tax (60% of Class II Year 2017 2016 2015 2014 2013 Inflation Rate (Bureau of Labor	2.2758 Factor of 0.5% Component Rate) Rate 0.714 0.708 0.714 0.708 0.714 0.708 0.714 0.708  Statistics)	33.33% W/A % 33.33% 26.67% 20.00% 13.33% 6.67%	0.7585 W/A Rate 0.2380 0.1888 0.1428 0.0952 0.0472	0.500	%
2013 Management Property Tax (60% of Class II Year 2017 2016 2015 2014 2013 Inflation Rate (Bureau of Labor Year	2.2758 Factor of 0.5% Component Rate) Rate 0.714 0.708 0.714 0.708 0.714 0.708 0.714 0.708 0.714 0.708  Statistics) Rate	33.33% W/A % 33.33% 26.67% 20.00% 13.33% 6.67% W/A %	0.7585 W/A Rate 0.2380 0.1888 0.1428 0.0952 0.0472 W/A Rate	0.500	%
2013 Management Property Tax (60% of Class II Year 2017 2016 2015 2014 2013 Inflation Rate (Bureau of Labor Year 2017	2.2758 Factor of 0.5% Component Rate) Rate 0.714 0.708 0.714 0.708 0.714 0.708 0.714 0.708 2.110	33.33% W/A % 33.33% 26.67% 20.00% 13.33% 6.67% W/A % 6.67%	0.7585 W/A Rate 0.2380 0.1888 0.1428 0.0952 0.0472 W/A Rate 0.1407	0.500	%
2013 Management Property Tax (60% of Class II Year 2017 2016 2015 2014 2013 Inflation Rate (Bureau of Labor Year 2017 2016	2.2758 Factor of 0.5% Component Rate) 0.714 0.714 0.708 0.714 0.714 0.708 2.110 2.070	33.33% W/A % 33.33% 26.67% 20.00% 13.33% 6.67% W/A % 6.67% 13.33%	0.7585 W/A Rate 0.2380 0.1888 0.1428 0.0952 0.0472 W/A Rate 0.1407 0.2759	0.500	%
2013 Management Property Tax (60% of Class II Year 2017 2016 2015 2014 2013 Inflation Rate (Bureau of Labor Year 2017 2016 2017 2016 2015	2.2758 Factor of 0.5% Component Rate) 0.714 0.714 0.708 0.714 0.714 0.708 2.110 2.070 0.730	33.33% W/A % 33.33% 26.67% 20.00% 13.33% 6.67% W/A % 6.67% 13.33% 33.33%	0.7585 W/A Rate 0.2380 0.1888 0.1428 0.0952 0.0472 W/A Rate 0.1407 0.2759 0.2433	0.500	%
2013 Management Property Tax (60% of Class II Year 2017 2016 2015 2014 2013 Inflation Rate (Bureau of Labor Year 2017 2016 2017 2016 2017 2016 2013	2.2758 Factor of 0.5% Component Rate) Rate 0.714 0.708 0.714 0.708 0.714 0.708 2.110 2.070 0.730 0.760	W/A %           33.33%           26.67%           20.00%           13.33%           6.67%           W/A %           6.67%           13.33%           26.67%           33.33%           26.67%           20.00%           33.33%           26.67%	0.7585 <b>W/A Rate</b> 0.2380 0.1888 0.1428 0.0952 0.0472 <b>W/A Rate</b> 0.1407 0.2759 0.2433 0.2027	0.500	%
2013 Management Property Tax (60% of Class II Year 2017 2016 2015 2014 2013 Inflation Rate (Bureau of Labor Year 2017 2016 2017 2016 2015	2.2758 Factor of 0.5% Component Rate) 0.714 0.714 0.708 0.714 0.714 0.708 2.110 2.070 0.730	33.33% W/A % 33.33% 26.67% 20.00% 13.33% 6.67% W/A % 6.67% 13.33% 33.33%	0.7585 W/A Rate 0.2380 0.1888 0.1428 0.0952 0.0472 W/A Rate 0.1407 0.2759 0.2433	0.500	%
2013 Management Property Tax (60% of Class II 2017 2016 2015 2014 2013 Inflation Rate (Bureau of Labor Year 2017 2016 2017 2016 2017 2016 2017 2016 2017 2016 2017 2016 2017 2016 2013	2.2758 Factor of 0.5% Component Rate 0.714 0.708 0.714 0.708 Statistics) Rate 2.110 2.070 0.730 0.760 1.500	W/A %           33.33%           26.67%           20.00%           13.33%           6.67%           W/A %           6.67%           13.33%           26.67%           20.00%	0.7585 W/A Rate 0.2380 0.1888 0.1428 0.0952 0.0472 W/A Rate 0.1407 0.2759 0.2433 0.2027 0.3000	0.500	%
2013 Management Property Tax (60% of Class II Year 2017 2016 2015 2014 2013 Inflation Rate (Bureau of Labor Year 2017 2016 2017 2016 2017 2016 2017 2018 2017 2018 2017 2018 2017 2018 2017 2018 2019 TOTAL REQU	2.2758 Factor of 0.5% Component Rate) Rate 0.714 0.708 0.714 0.708 0.714 0.708 2.110 2.070 0.730 0.760	33.33% W/A % 33.33% 26.67% 20.00% 13.33% 6.67% 13.33% 33.33% 26.67% 13.33% 33.33% 26.67% 13.33% 33.33% 26.67% 13.33% 26.67% 20.00%	0.7585 W/A Rate 0.2380 0.1888 0.1428 0.0952 0.0472 W/A Rate 0.1407 0.2759 0.2433 0.2027 0.3000	0.500	%

# Stumpage Prices:

	Sawtimber	<u>Pulpwood</u>
Stumpage Price Adjustment Factor	0.00%	0.87%

			1.0000	1.0000	1.0000	1.0000
<u>SAWTI</u>	MBER	Current	\$/MBF at age	\$/MBF at age	\$/MBF at age	\$/MBF at age
	Region	\$/MBF	35	45	55	80
	Region 1	190.77	190.77	190.77	190.77	190.77
	Region 2	188.74	188.74	188.74	188.74	188.74
	Region 3	219.20	219.20	219.20	219.20	219.20
	Region 4	224.17	224.17	224.17	224.17	224.17
	Region 5	174.96	174.96	174.96	174.96	174.96
			1.3542	1.4767	1.6103	1.9997
PULPW	<u>OOD:</u>		\$/cd at age	\$/cd at age	\$/cd at age	\$/cd at age
	Region	\$/Cord	35	45	55	80
	Region 1	6.58	8.91	9.72	10.60	13.16
	Region 2	6.11	8.28	9.03	9.85	12.23
	Region 3	4.90	6.63	7.23	7.89	9.79
	Region 4	9.78	13.24	14.44	15.75	19.55
	Region 5	6.15	8.33	9.08	9.90	12.29

### Management Costs:

Region	\$/acre (1)
1	3.25
2	3.25
3	3.25
4	3.25
5	3.25
State	

### **Tax Rates:**

Effective Federal Income Tax Rate	<u>21.00%</u>
Effective WV State Income Tax Rate (6.5% * (121))	<u>5.14%</u>
Effective WV Severance Tax Rate (1.5% * (121)	<u>1.19%</u>

# Yield (Volumes) (80 year rotation)

Productivity Grades	Site Index	Yield - MBF	Y	ield - Cords
Grade I	75 or more		14.5	10.5
Grade II	65-74		9.7	14.9
Grade III	less than 65		4.5	18.5

Estimation	of Require	d Rate of F	Return: Class I	VI & IV	Blende	d Rate
	turn (5 Year T-Bil			T		
Year	Rate	W/A %	W/A Rate			
2017	1.9100	33.33%	0.6366			
2016	1.3383	26.67%	0.3569			
2015	1.5292	20.00%	0.3058			
2014	1.6410	13.33%	0.2187		4 - 00	
2013	1.1725	6.67%	0.0782		1.596	%
Nonliquidity R	ate					
	s. 3 Month T-Bills)					
Year	Rate	W/A %	W/A Rate			
2017	0.2542	33.33%	0.0847			
2016 2015	0.2950 0.2683	26.67% 20.00%	0.0787 0.0537			
2015	0.2883	13.33%	0.0118			
2013	0.0733	6.67%	0.0049		0.234	%
Risk Rate (30	yr T-bills vs 5 yı	r T-bills)				
Year	Rate	W/A %	W/A Rate			
2017	0.9850	6.67%	0.0657			
2016	1.2592	13.33%	0.1679			
2015	1.3117	20.00%	0.2623			
2014	4 0000					
ZU 144	1.699Z	26.67%	0.4532			
2013	1.6992 2.2758	26.67% 33.33%	0.4532 0.7585		1.708	%
	2.2758				1.708 0.500	%
2013 Management F <u>Property Tax C</u>	2.2758 actor of 0.5% omponent					
2013 Management F Property Tax <u>C</u> 60% of Blended II	2.2758 actor of 0.5% omponent &IV Rates)	33.33%	0.7585			
2013 Management F Property Tax C 60% of Blended II Year	2.2758 actor of 0.5% omponent &IV Rates) Rate	33.33% W/A %	0.7585 W/A Rate			
2013 Management F Property Tax C 60% of Blended II Year 2017	2.2758 actor of 0.5% omponent &IV Rates) Rate 1.308	33.33% <b>W/A %</b> 33.33%	0.7585 W/A Rate 0.4360			
2013 Management F Property Tax C 60% of Blended II Year	2.2758 actor of 0.5% omponent &IV Rates) Rate	33.33% W/A %	0.7585 W/A Rate			
2013 Management F Property Tax C 60% of Blended II Year 2017	2.2758 actor of 0.5% omponent &IV Rates) Rate 1.308 1.308 1.314	33.33% <b>W/A %</b> 33.33%	0.7585 W/A Rate 0.4360			
2013 Management F Property Tax C 60% of Blended II Year 2017 2016	2.2758 actor of 0.5% omponent &IV Rates) Rate 1.308 1.308	33.33% <b>W/A %</b> 33.33% 26.67%	0.7585 W/A Rate 0.4360 0.3488			
2013 Management F Property Tax C (60% of Blended II Year 2017 2016 2015	2.2758 actor of 0.5% omponent &IV Rates) Rate 1.308 1.308 1.314	<b>W/A %</b> 33.33% 26.67% 20.00%	0.7585 W/A Rate 0.4360 0.3488 0.2628			%
2013 Management F Property Tax C (60% of Blended II Year 2017 2016 2015 2014	2.2758 actor of 0.5% omponent &IV Rates) Rate 1.308 1.308 1.314 1.314	<b>W/A %</b> 33.33% 26.67% 20.00% 13.33%	0.7585 W/A Rate 0.4360 0.3488 0.2628 0.1752		0.500	%
2013 Management F Property Tax C (60% of Blended II Year 2017 2016 2015 2014 2013 Inflation Rate: (Bureau of Labor S	2.2758 actor of 0.5% omponent &IV Rates) Rate 1.308 1.308 1.308 1.314 1.314 1.314 1.314 tatistics)	<b>W/A %</b> 33.33% 26.67% 20.00% 13.33% 6.67%	0.7585 W/A Rate 0.4360 0.3488 0.2628 0.1752 0.0876		0.500	%
2013 Management F Property Tax C 60% of Blended II Year 2017 2016 2015 2014 2013 nflation Rate:	2.2758 actor of 0.5% <u>omponent</u> &IV Rates) <u>Rate</u> 1.308 1.308 1.314 1.314 1.314 1.314 tatistics) <u>Rate</u>	<b>W/A %</b> 33.33% 26.67% 20.00% 13.33% 6.67% <b>W/A %</b>	0.7585 W/A Rate 0.4360 0.3488 0.2628 0.1752		0.500	%
2013 Management F Property Tax C 60% of Blended II Year 2017 2016 2015 2014 2013 Inflation Rate: Bureau of Labor S Year 2017	2.2758 actor of 0.5% omponent &IV Rates) Rate 1.308 1.308 1.308 1.314 1.314 1.314 1.314 tatistics)	<b>W/A %</b> 33.33% 26.67% 20.00% 13.33% 6.67%	0.7585 W/A Rate 0.4360 0.3488 0.2628 0.1752 0.0876 W/A Rate 0.1407		0.500	%
2013 Management F Property Tax C 60% of Blended II Year 2017 2016 2015 2014 2013 2014 2013 Milation Rate: Bureau of Labor S Year	2.2758 actor of 0.5% <u>omponent</u> &IV Rates) <u>Rate</u> 1.308 1.308 1.314 1.314 1.314 1.314 tatistics) <u>Rate</u>	<b>W/A %</b> 33.33% 26.67% 20.00% 13.33% 6.67% <b>W/A %</b>	0.7585 W/A Rate 0.4360 0.3488 0.2628 0.1752 0.0876 W/A Rate		0.500	%
2013 Management F Property Tax C (60% of Blended II Year 2017 2016 2015 2014 2013 Inflation Rate: Bureau of Labor S Year 2017	2.2758 actor of 0.5% <u>omponent</u> &IV Rates) <u>Rate</u> 1.308 1.308 1.314 1.314 1.314 1.314 tatistics) <u>Rate</u> 2.110	W/A % 33.33% 26.67% 20.00% 13.33% 6.67% W/A % 6.67%	0.7585 W/A Rate 0.4360 0.3488 0.2628 0.1752 0.0876 W/A Rate 0.1407		0.500	%
2013 Management F Property Tax C (60% of Blended II Year 2017 2016 2015 2014 2013 Inflation Rate: Bureau of Labor S Year 2017 2017 2013	2.2758 actor of 0.5% <u>omponent</u> &IV Rates) <u>Rate</u> 1.308 1.308 1.314 1.314 1.314 1.314 tatistics) <u>Rate</u> 2.110 2.070	W/A %         33.33%         26.67%         20.00%         13.33%         6.67%         W/A %         6.67%         13.33%	0.7585 <b>W/A Rate</b> 0.4360 0.3488 0.2628 0.1752 0.0876 <b>W/A Rate</b> 0.1407 0.2759		0.500	%
2013 Management F Property Tax C (60% of Blended II Year 2017 2016 2015 2014 2013 Inflation Rate: Bureau of Labor S Year 2017 2016 2015	2.2758 actor of 0.5% <u>omponent</u> &IV Rates) <u>Rate</u> 1.308 1.308 1.314 1.314 1.314 1.314 tatistics) <u>Rate</u> 2.110 2.070 0.730	W/A %           33.33%           26.67%           20.00%           13.33%           6.67%           W/A %           6.67%           13.33%           33.33%	0.7585 <b>W/A Rate</b> 0.4360 0.3488 0.2628 0.1752 0.0876 <b>W/A Rate</b> 0.1407 0.2759 0.2433		0.500	%
2013 Management F Property Tax C (60% of Blended II Year 2017 2016 2015 2014 2013 Inflation Rate: (Bureau of Labor S Year 2017 2016 2017 2016 2013	2.2758 actor of 0.5% omponent &IV Rates) Rate 1.308 1.308 1.314 1.314 1.314 1.314 tatistics) Rate 2.110 2.070 0.730 0.760 1.500	W/A %           33.33%           26.67%           20.00%           13.33%           6.67%           W/A %           6.67%           13.33%           26.67%           20.00%	W/A Rate           0.4360           0.3488           0.2628           0.1752           0.0876           W/A Rate           0.1407           0.2759           0.2433           0.2027           0.3000		0.500 1.310 (1.163)	%
2013 Management F Property Tax C (60% of Blended II Year 2017 2016 2015 2014 2013 Inflation Rate: (Bureau of Labor S Year 2017 2016 2013 Inflation Rate: (Bureau of Labor S Year 2017 2016 2013 Inflation Rate: (Bureau of Labor S Year 2017 2016 2013 Inflation Rate: 2017 2014 2017 2016 2013 Inflation Rate: 2017 2014 2017 2014 2017 2016 2013 Inflation Rate: 2017 2014 2017 2014 2017 2016 2014 2017 2016 2014 2017 2014 2017 2016 2014 2017 2016 2014 2013 Inflation Rate: 2017 2016 2013 Inflation Rate: 2017 2016 2014 2013 Inflation Rate: 2017 2016 2014 2017 2016 2013 Inflation Rate: 2017 2016 2017 2014 2017 2016 2017 2016 2013 Inflation Rate: 2017 2016 2017 2017 2016 2017 2016 2017 2016 2017 2016 2017 2016 2017 2016 2017 2016 2017 2016 2015 2014 2013 Inflaton Rate: 2014 2013 Inflat REQUIF	2.2758 actor of 0.5% <u> omponent</u> &IV Rates) <u> Rate</u> 1.308 1.308 1.314 1.314 1.314 1.314 tatistics) <u> Rate</u> 2.110 2.070 0.730 0.760	33.33% W/A % 33.33% 26.67% 20.00% 13.33% 6.67% 13.33% 33.33% 26.67% 13.33% 33.33% 26.67% 20.00% ETURN (REAL	W/A Rate           0.4360           0.3488           0.2628           0.1752           0.0876           W/A Rate           0.1407           0.2759           0.2433           0.2027           0.3000		0.500	%

Stumpage Prices:					
		Sawtimber	Pulpwood		
Stumpage Price Adjustment F	actor	0.00%	0.87%		
		1.0000	1.0000	1.0000	1.0000
SAWTIMBER	Current	\$/MBF at age	\$/MBF at age	\$/MBF at age	\$/MBF at age
Region	\$/MBF	35	45	55	80
Region 1	190.77	190.77	190.77	190.77	190.77
Region 2	188.74	188.74	188.74	188.74	188.74
Region 3	219.21	219.21	219.21	219.21	219.21
Region 4	224.16	224.16	224.16	224.16	224.16
Region 5	174.95	174.95	174.95	174.95	174.95
		1.3542	1.4767	1.6103	1.9997
PULPWOOD:		\$/cd at age	\$/cd at age	\$/cd at age	\$/cd at age
Region	\$/Cord	35	45	55	80
Region 1	6.58	8.91	9.72	10.60	13.16
Region 2	6.11	8.28	9.03	9.84	12.22
Region 3	4.90	6.63	7.23	7.89	9.79
Region 4	9.78	13.24	14.44	15.74	19.55
Region 5	6.15	8.33	9.08	9.90	12.29

# Management Costs:

Region	\$/acre (1)
1	3.25
2	3.25
3	3.25
4	3.25
5	3.25
State	

# Tax Rates:

Πđ	163.	
	Effective Federal Income Tax Rate	21.00%
	Effective WV State Income Tax Rate (6.5% * (1	21)) <u>5.14%</u>
	Effective WV Severance Tax Rate (1.5% * (1	35) <u>1.19%</u>

# Yield (Volumes) (80 year rotation)

Productivity Grades	Site Index	Yield - MBF	Yie	eld - Cords
Grade I	75 or more		14.5	10.5
Grade II	65-74		9.7	14.9
Grade III	less than 65		4.5	18.5

w	est Virginia Wgt/Avg	g Managed Timbe	erland Stumpage	Prices
REGION 1 - Sawtimber				
Year	Volume	\$/MBF	W/A%	\$/MBF
2017	21,212.89	213.81	33.33%	71.27
2016	11,080.07	170.93	26.67%	45.58
2015	12,561.80	192.85	20.00%	38.57
2014	12,162.06	176.34	13.33%	23.51
2013	19,017.77	177.45	6.67%	11.84
	76,034.59	MA A 1 B		190.77
REGION 1 - Pulpwood *				
Year	Volume	\$/CORD	W/A%	\$/CORD
2017	3,802.40	5.81	33.33%	1.94
2016	240.00	2.70	26.67%	0.72
2015	7,218.90	15.03	20.00%	3.01
2014	464.40	5.40	13.33%	0.72
2013	6,102.20	2.96	6.67%	0.20
	17,827.90			6.58
EGION 2 - Sawtimber				
Year	Volume	\$/MBF	W/A%	\$/MBF
2017	57,210.90	203.96	33.33%	67.99
2016	41,475.00	185.68	26.67%	49.51
2015	26,487.65	175.25	20.00%	35.05
2014	22,001.80	182.47	13.33%	24.33
2013	25,896.85	177.79	6.67%	11.86
	173,072.20			188.74
EGION 2 - Pulpwood				
Year	Volume	\$/CORD	W/A%	\$/CORD
2017	5,606.50	6.84	33.33%	2.28
2016	25,517.30	4.17	26.67%	1.11
2015	42,863.30	5.97	20.00%	1.19
2014	2,168.10	5.04	13.33%	0.67
2013	119,279.40	12.83	6.67%	0.86
	195,434.60			6.11
EGION 3 - Sawtimber				
Year	Volume	\$/MBF	W/A%	\$/MBF
2017	112,269.80	212.95	33.33%	70.98
2016	136,304.30	191.34	26.67%	51.02
2015	135,967.80	207.12	20.00%	41.42
2014	91,467.44	280.52	13.33%	37.40
2013	161,397.70	275.63	6.67%	18.38
	637,407.04			219.21
EGION 3 - Pulpwood				
Year	Volume	\$/CORD	W/A%	\$/CORD
2017	143,565.20	7.86	33.33%	2.62
2016	169,606.30	1.92	26.67%	0.51
2015	184,907.30	3.85	20.00%	0.77
2014	170,736.30	3.57	13.33%	0.48
2013	153,197.40	7.78	6.67%	0.52
	822,012.50			4.90

Year         Volume         \$/CORD         W/A%         \$/CORD           2017         3,813.30         11.16         33.33%         3.72           2016         4,538.50         11.14         26.67%         2.97           2015         6,137.40         7.22         20.00%         1.44           2014         7.765.20         8.16         13.33%         1.09           2013         15,488.60         8.32         6.67%         0.55           37,743.00         9.78	2017         15,073,14         238.37         33.33%         79.46           2016         9,925,16         170.26         26.67%         45.40           2015         6,644.42         223.42         20.00%         44.68           2013         12,820.20         211.47         6.67%         14.10           49.483.82         224.16           2016         4,538.50         11.14         26.67%         2.97           2016         4,538.50         11.14         26.67%         2.97           2016         6,137.40         7.22         20.00%         1.44           2014         7.765.20         8.16         13.33%         1.09           2013         15,488.60         8.32         6.67%         0.55           37,743.00         9.78         0.55         37,743.00         9.78           2016         23,026.02         150.53         26.67%         40.14           2015         37,714.40         160.15         20.00%         32.03           2014         21,661.40         265.95         13.33%         35.46           2013         31,859.00         198.20         6.67%         13.21           159,633.96         1	2017         15,073,14         238,37         33,339           2016         9,925,16         170,26         26,679           2015         6,644,42         223,42         20,009           2014         5,020,90         303,89         13,339           2013         12,820,20         211,47         6,67%           49,483,82         49,483,82         49,483,82         49,483,82           REGION 4 - Pulpwood           Year         Volume         \$/CORD         W/A%           2017         3,813,30         11,16         33,339           2016         4,538,50         11,14         26,67%           2015         6,137,40         7,22         20,00%           2014         7,765,20         8,16         13,339           2013         15,488,60         8,32         6,67%	79.46 45.40 44.68 40.52 14.10
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	2016         9,925.16         170.26         26.67%         45.40           2015         6,644.42         223.42         20.00%         44.68           2013         12,820.20         211.47         6.67%         14.10           49,483.82         224.16         224.16         224.16           Colored         Year         Volume         S/CORD         W/A%         S/CORD           2017         3,813.30         11.16         33.33%         3.72         20.16         4,538.50         11.14         26.67%         2.97           2015         6,137.40         7.22         20.00%         1.44         20.14         7.765.20         8.16         13.33%         1.09           2013         15,488.60         8.32         6.67%         0.55         37.743.00         9.78           SGION 5 - Sawtimber           2017         45,373.14         162.33         33.33%         54.11           2016         23.026.02         150.53         26.67%         40.14           2015         37.714.40         160.15         20.00%         32.03           2014         21.661.40         265.95         13.33%         55.46           2013	2016         9,925.16         170.26         26.679           2015         6,644.42         223.42         20.009           2014         5,020.90         303.89         13.339           2013         12,820.20         211.47         6.67%           49,483.82	45.40 44.68 40.52 14.10
2014         5,020.90         303.89         13.33%         40.52           2013         12,820.20         211.47         6.67%         14.10           49,483.82         224.16           GION 4 - Pulpwood         Year         Volume         \$/CORD         W/A%         \$/CORD           2017         3,813.30         11.16         33.33%         3.72         2016         4,538.50         11.14         26.67%         2.97           2015         6,137.40         7.22         20.00%         1.44         7.765.20         8.16         13.33%         1.09           2013         15,488.60         8.32         6.67%         0.55         37.743.00         9.78           SION 5 - Sawtimber           Year         Yolume         \$/MBF         W/A%         \$/MBF           2017         45,373.14         162.33         33.33%         54.11           2016         23,026.02         150.53         26.67%         40.14           2015         37.714.40         160.15         20.00%         32.03           2014         21.661.40         265.95         13.33%         35.46           2013         31,859.00         198.20         6.67%	2014         5,020.90         303.89         13.33%         40.52           2013         12,820.20         211.47         6.67%         14.10           49,483.82         224.16           SGION 4 - Pulpwood         Year         Volume         \$/CORD         W/A%         \$/CORD           2017         3.813.30         11.16         33.33%         3.72         2016         4,538.50         11.14         26.67%         2.97           2015         6,137.40         7.22         20.00%         1.44         2014         7.765.20         8.16         13.33%         1.09         2013         15,488.60         8.32         6.67%         0.55         37.743.00         9.78           SGION 5 - Sawtimber           Year         Volume         \$/MBF         W/A%         \$/MBF           2017         45,373.14         162.33         33.33%         54.11           2016         23.026.02         150.53         26.67%         40.14           2015         37.714.40         160.15         20.00%         32.03           2014         21.661.40         265.95         13.33%         35.46           2013         31,859.00         198.20	2014         5,020.90         303.89         13.339           2013         12,820.20         211.47         6.67%           49,483.82         49,483.82         49,483.82           REGION 4 - Pulpwood           Year         Volume         \$/CORD         W/A%           2017         3,813.30         11.16         33.33%           2016         4,538.50         11.14         26.67%           2015         6,137.40         7.22         20.00%           2014         7,765.20         8.16         13.33%           2013         15,488.60         8.32         6.67%	40.52 14.10
2013         12,820.20         211.47         6.67%         14.10           GION 4 - Pulpwood         Year         Volume         \$/CORD         W/A%         \$/CORD           2017         3,813.30         11.16         33.33%         3.72           2016         4,538.50         11.14         26.67%         2.97           2015         6,137.40         7.22         20.00%         1.44           2014         7.765.20         8.16         13.33%         1.09           2013         15,488.60         8.32         6.67%         0.55           37,743.00         9.78         9.78           GION 5 - Sawtimber           Year         Volume         \$/MBF         W/A%         \$/MBF           2017         45,373.14         162.33         33.33%         54.11           2016         23,026.02         150.53         26.67%         40.14           2015         37,714.40         160.15         20.00%         32.03           2014         21,661.40         265.95         13.33%         35.46           2013         31,859.00         198.20         6.67%         13.21           159,633.96         174.95         17	2013         12,820.20         211,47         6.67%         14.10           49,483.82         224.16           EGION 4 - Pulpwood         Year         Volume         \$/CORD         W/A%         \$/CORD           2017         3,813.30         11.16         33.33%         3.72           2016         4,538.50         11.14         26.67%         2.97           2015         6,137.40         7.22         20.00%         1.44           2014         7.765.20         8.16         13.33%         1.09           2013         15.488.60         8.32         6.67%         0.55           37.743.00         9.78         9.78           GION 5 - Sawtimber           2017         45.373.14         162.33         33.33%         54.11           2016         23.026.02         150.53         26.67%         40.14           2015         37.714.40         160.15         20.00%         32.03           2013         31.859.00         198.20         6.67%         13.21           159.633.96         174.95         159         33.33%         2.44           2016         2.794.40         5.99         26.67%         1.60	2013         12,820.20         211.47         6.67%           49,483.82         49,483.82           REGION 4 - Pulpwood         Year         Volume         \$/CORD         W/A%           2017         3,813.30         11.16         33.33%           2016         4,538.50         11.14         26.67%           2015         6,137.40         7.22         20.00%           2014         7.765.20         8.16         13.33%           2013         15,488.60         8.32         6.67%	14.10
$\begin{tabular}{ c c c c c c c c c c c c c c c c c c c$	Year         Volume         \$/CORD         W/A%         \$/CORD           2017         3,813.30         11.16         33.33%         3.72           2016         4,538.50         11.14         26.67%         2.97           2015         6,137.40         7.22         20.00%         1.44           2014         7,765.20         8.16         13.33%         1.09           2013         15,488.60         8.32         6.67%         0.55           37,743.00         9.78         9.78           2016         23.026.02         150.53         26.67%         40.14           2015         37,714.40         160.15         20.00%         32.03           2014         21,661.40         265.95         13.33%         35.46           2013         31,859.00         198.20         6.67%         13.21           159,633.96         174.95         174.95         159.633.96         174.95           GION 5 - Pulpwood         Year         Yolume         \$/CORD         W/A%         \$/CORD           Year         Yolume         \$/CORD         W/A%         \$/CORD         0.667%         13.21           159,633.96         174.95         160	49,483.82           REGION 4 - Pulpwood           Year         Volume         \$/CORD         W/A%           2017         3,813.30         11.16         33.33%           2016         4,538.50         11.14         26.67%           2015         6,137.40         7.22         20.00%           2014         7,765.20         8.16         13.33%           2013         15,488.60         8.32         6.67%	
GION 4 - Pulpwood         Year         Volume         \$/CORD         W/A%         \$/CORD           2017         3,813.30         11.16         33.33%         3.72           2016         4,538.50         11.14         26.67%         2.97           2015         6,137.40         7.22         20.00%         1.44           2014         7.765.20         8.16         13.33%         1.09           2013         15,488.60         8.32         6.67%         0.55           37.743.00         9.78           GION 5 - Sawtimber           2016         23,026.02         150.53         26.67%         40.14           2015         37.714.40         160.15         20.00%         32.03           2014         21,661.40         265.95         13.33%         35.46           2013         31,859.00         198.20         6.67%         13.21           159.633.96           174.95           SION 5 - Pulpwood           Year         Yolume         \$/CORD         \$/A%         \$/CORD           2017         9.644.70         7.32         33.33%         2.44           2016	Year         Volume         \$/CORD         W/A%         \$/CORD           2017         3,813.30         11.16         33.33%         3.72           2016         4,538.50         11.14         26.67%         2.97           2015         6,137.40         7.22         20.00%         1.44           2014         7,765.20         8.16         13.33%         1.09           2013         15,488.60         8.32         6.67%         0.55           37,743.00         9.78           Sigion 5 - Sawtimber           Year         Volume         \$/MBF         W/A%         \$/MBF           2016         23,026.02         150.53         26.67%         40.14           2015         37,714.40         160.15         20.00%         32.03           2014         21,661.40         265.95         13.33%         35.46           2013         31,859.00         198.20         6.67%         13.21           159.633.96         174.95         174.95           GION 5 - Pulpwood           Year         Yolume         \$/CORD         \$//A%         \$/CORD           2017         9.644.70         7.32         33.33%	Year         Volume         \$/CORD         W/A%           2017         3,813.30         11.16         33.33%           2016         4,538.50         11.14         26.67%           2015         6,137.40         7.22         20.00%           2014         7,765.20         8.16         13.33%           2013         15,488.60         8.32         6.67%	224.16
Year         Volume         \$/CORD         W/A%         \$/CORD           2017         3,813.30         11.16         33.33%         3.72           2016         4,538.50         11.14         26.67%         2.97           2015         6,137.40         7.22         20.00%         1.44           2014         7.765.20         8.16         13.33%         1.09           2013         15,488.60         8.32         6.67%         0.55           37.743.00         9.78           Silon 5 - Sawtimber           Year         Volume         \$/MBF         W/A%         \$/MBF           2017         45,373.14         162.33         33.33%         54.11           2016         23.026.02         150.53         26.67%         40.14           2015         37.714.40         160.15         20.00%         32.03           2014         21,661.40         265.95         13.33%         35.46           2013         31,859.00         198.20         6.67%         13.21           159,633.96         174.95         174.95         174.95           SION 5 - Pulpwood         Year         Yolume         \$/CORD         W/A%         \$/	Year         Volume         \$/CORD         W/A%         \$/CORD           2017         3,813.30         11.16         33.33%         3.72           2016         4,538,50         11.14         26.67%         2.97           2015         6,137.40         7.22         20.00%         1.44           2014         7.765.20         8.16         13.33%         1.09           2013         15,488.60         8.32         6.67%         0.55           37,743.00         9.78           SiGION 5 - Sawtimber           Year         Volume         \$/MBF         W/A%         \$/MBF           2017         45.373.14         162.33         33.33%         54.11           2016         23.026.02         150.53         26.67%         40.14           2015         37.714.40         160.15         20.00%         32.03           2014         21,661.40         265.95         13.33%         35.46           2013         31,859.00         198.20         6.67%         13.21           159,633.96         174.95         174.95         174.95           GION 5 - Pulpwood           Year         Volume         \$/CORD	Year         Volume         \$/CORD         W/A%           2017         3,813.30         11.16         33.33%           2016         4,538.50         11.14         26.67%           2015         6,137.40         7.22         20.00%           2014         7,765.20         8.16         13.33%           2013         15,488.60         8.32         6.67%	
Year         Volume         \$/CORD         W/A%         \$/CORD           2017         3,813.30         11.16         33.33%         3.72           2016         4,538.50         11.14         26.67%         2.97           2015         6,137.40         7.22         20.00%         1.44           2014         7.765.20         8.16         13.33%         1.09           2013         15,488.60         8.32         6.67%         0.55           37.743.00         9.78           Silon 5 - Sawtimber           Year         Volume         \$/MBF         W/A%         \$/MBF           2017         45,373.14         162.33         33.33%         54.11           2016         23.026.02         150.53         26.67%         40.14           2015         37.714.40         160.15         20.00%         32.03           2014         21,661.40         265.95         13.33%         35.46           2013         31,859.00         198.20         6.67%         13.21           159,633.96         174.95         174.95         174.95           SION 5 - Pulpwood         Year         Yolume         \$/CORD         W/A%         \$/	Year         Volume         \$/CORD         W/A%         \$/CORD           2017         3,813.30         11.16         33.33%         3.72           2016         4,538,50         11.14         26.67%         2.97           2015         6,137.40         7.22         20.00%         1.44           2014         7.765.20         8.16         13.33%         1.09           2013         15,488.60         8.32         6.67%         0.55           37,743.00         9.78           Sigion 5 - Sawtimber           Year         Volume         \$/MBF         W/A%         \$/MBF           2017         45.373.14         162.33         33.33%         54.11           2016         23.026.02         150.53         26.67%         40.14           2015         37.714.40         160.15         20.00%         32.03           2014         21,661.40         265.95         13.33%         35.46           2013         31,859.00         198.20         6.67%         13.21           159,633.96         174.95         174.95         174.95           GION 5 - Pulpwood         Year         Yolume         \$/CORD         \$V/A%	Year         Volume         \$/CORD         W/A%           2017         3,813.30         11.16         33.33%           2016         4,538.50         11.14         26.67%           2015         6,137.40         7.22         20.00%           2014         7,765.20         8.16         13.33%           2013         15,488.60         8.32         6.67%	
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$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	$\begin{array}{c c c c c c c c c c c c c c c c c c c $	2014         7,765.20         8.16         13.33%           2013         15,488.60         8.32         6.67%	2.97
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Year         Volume         \$/MBF         W/A%         \$/MBF           2017         45,373.14         162.33         33.33%         54.11           2016         23,026.02         150.53         26.67%         40.14           2015         37,714.40         160.15         20.00%         32.03           2014         21,661.40         265.95         13.33%         35.46           2013         31,859.00         198.20         6.67%         13.21           159,633.96         174.95         174.95           SION 5 - Pulpwood         Year         Volume         \$/CORD         W/A%         \$/CORD           2017         9,644.70         7.32         33.33%         2.44           2016         2,794.40         5.99         26.67%         1.60           2015         2,889.50         4.05         20.00%         0.81           2014         10,191.40         6.19         13.33%         0.83           2013         18,292.60         7.13         6.67%         0.48	Year         Volume         \$/MBF         W/A%         \$/MBF           2017         45,373.14         162.33         33.33%         54.11           2016         23,026.02         150.53         26.67%         40.14           2015         37,714.40         160.15         20.00%         32.03           2014         21,661.40         265.95         13.33%         35.46           2013         31,859.00         198.20         6.67%         13.21           159,633.96         174.95         174.95           GION 5 - Pulpwood         Year         Volume         \$/CORD         W/A%         \$/CORD           2017         9.644.70         7.32         33.33%         2.44           2016         2.794.40         5.99         26.67%         1.60           2015         2.889.50         4.05         20.00%         0.81           2014         10,191.40         6.19         13.33%         0.83           2013         18,292.60         7.13         6.67%         0.48	37,743.00	0.55
Year         Volume         \$/MBF         W/A%         \$/MBF           2017         45,373.14         162.33         33.33%         54.11           2016         23,026.02         150.53         26.67%         40.14           2015         37.714.40         160.15         20.00%         32.03           2014         21,661.40         265.95         13.33%         35.46           2013         31,859.00         198.20         6.67%         13.21           159,633.96         174.95           SION 5 - Pulpwood           Year         Volume         \$/CORD         W/A%         \$/CORD           2017         9,644.70         7.32         33.33%         2.44           2016         2,794.40         5.99         26.67%         1.60           2015         2,889.50         4.05         20.00%         0.81           2014         10,191.40         6.19         13.33%         0.83           2013         18,292.60         7.13         6.67%         0.48	Year         Volume         \$/MBF         W/A%         \$/MBF           2017         45,373.14         162.33         33.33%         54.11           2016         23,026.02         150.53         26.67%         40.14           2015         37.714.40         160.15         20.00%         32.03           2014         21,661.40         265.95         13.33%         35.46           2013         31,859.00         198.20         6.67%         13.21           159,633.96         174.95           GION 5 - Pulpwood           Year         Volume         \$/CORD         W/A%         \$/CORD           2017         9,644.70         7.32         33.33%         2.44           2016         2,794.40         5.99         26.67%         1.60           2015         2,889.50         4.05         20.00%         0.81           2014         10,191.40         6.19         13.33%         0.83           2013         18,292.60         7.13         6.67%         0.48		9.78
Year         Volume         \$/MBF         W/A%         \$/MBF           2017         45,373.14         162.33         33.33%         54.11           2016         23,026.02         150.53         26.67%         40.14           2015         37.714.40         160.15         20.00%         32.03           2014         21,661.40         265.95         13.33%         35.46           2013         31,859.00         198.20         6.67%         13.21           159,633.96         174.95           SION 5 - Pulpwood           Year         Volume         \$/CORD         W/A%         \$/CORD           2017         9,644.70         7.32         33.33%         2.44           2016         2,794.40         5.99         26.67%         1.60           2015         2,889.50         4.05         20.00%         0.81           2014         10,191.40         6.19         13.33%         0.83           2013         18,292.60         7.13         6.67%         0.48	Year         Volume         \$/MBF         W/A%         \$/MBF           2017         45,373.14         162.33         33.33%         54.11           2016         23,026.02         150.53         26.67%         40.14           2015         37.714.40         160.15         20.00%         32.03           2014         21,661.40         265.95         13.33%         35.46           2013         31,859.00         198.20         6.67%         13.21           159,633.96         174.95           GION 5 - Pulpwood           Year         Volume         \$/CORD         W/A%         \$/CORD           2017         9,644.70         7.32         33.33%         2.44           2016         2,794.40         5.99         26.67%         1.60           2015         2,889.50         4.05         20.00%         0.81           2014         10,191.40         6.19         13.33%         0.83           2013         18,292.60         7.13         6.67%         0.48		
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	2017         45,373.14         162.33         33.33%         54.11           2016         23,026.02         150.53         26.67%         40.14           2015         37,714.40         160.15         20.00%         32.03           2014         21,661.40         265.95         13.33%         35.46           2013         31,859.00         198.20         6.67%         13.21           159,633.96         174.95           GION 5 - Pulpwood           Year         Volume         \$/CORD         W/A%         \$/CORD           2016         2,794.40         5.99         26.67%         1.60           2015         2,889.50         4.05         20.00%         0.81           2014         10,191.40         6.19         13.33%         0.83           2013         18,292.60         7.13         6.67%         0.48	EGION 5 - Sawtimber	
2016         23,026.02         150.53         26.67%         40.14           2015         37,714.40         160.15         20.00%         32.03           2014         21,661.40         265.95         13.33%         35.46           2013         31,859.00         198.20         6.67%         13.21           159,633.96         174.95           SION 5 - Pulpwood           Year         Volume         \$/CORD         W/A%         \$/CORD           2016         2,794.40         5.99         26.67%         1.60           2015         2,889.50         4.05         20.00%         0.81           2014         10,191.40         6.19         13.33%         0.83           2013         18,292.60         7.13         6.67%         0.48	2016         23,026.02         150.53         26.67%         40.14           2015         37,714.40         160.15         20.00%         32.03           2014         21,661.40         265.95         13.33%         35.46           2013         31,859.00         198.20         6.67%         13.21           If the second		
2015         37,714.40         160.15         20.00%         32.03           2014         21,661.40         265.95         13.33%         35.46           2013         31,859.00         198.20         6.67%         13.21           159,633.96         174.95           SION 5 - Pulpwood         Year         Volume         \$/CORD         W/A%         \$/CORD           2017         9,644.70         7.32         33.33%         2.44           2016         2.794.40         5.99         26.67%         1.60           2015         2,889.50         4.05         20.00%         0.81           2014         10,191.40         6.19         13.33%         0.83           2013         18,292.60         7.13         6.67%         0.48	2015         37,714.40         160.15         20.00%         32.03           2014         21,661.40         265.95         13.33%         35.46           2013         31,859.00         198.20         6.67%         13.21           159,633.96         174.95           GION 5 - Pulpwood           Year         Volume         \$/CORD         W/A%         \$/CORD           2016         2,794.40         5.99         26.67%         1.60           2015         2,889.50         4.05         20.00%         0.81           2014         10,191.40         6.19         13.33%         0.83           2013         18,292.60         7.13         6.67%         0.48		
2014         21,661.40         265.95         13.33%         35.46           2013         31,859.00         198.20         6.67%         13.21           159,633.96         174.95           GION 5 - Pulpwood         Year         Volume         \$/CORD         W/A%         \$/CORD           2017         9,644.70         7.32         33.33%         2.44           2016         2.794.40         5.99         26.67%         1.60           2015         2,889.50         4.05         20.00%         0.81           2014         10,191.40         6.19         13.33%         0.83           2013         18,292.60         7.13         6.67%         0.48	2014         21,661.40         265.95         13.33%         35.46           2013         31,859.00         198.20         6.67%         13.21           159,633.96         174.95           GION 5 - Pulpwood           Year         Volume         \$/CORD         W/A%         \$/CORD           2016         2,794.40         5.99         26.67%         1.60           2015         2,889.50         4.05         20.00%         0.81           2014         10,191.40         6.19         13.33%         0.83           2013         18,292.60         7.13         6.67%         0.48		
2013         31,859.00         198.20         6.67%         13.21           159,633.96         174.95           GION 5 - Pulpwood         Year         Volume         \$/CORD         W/A%         \$/CORD           2017         9,644.70         7.32         33.33%         2.44           2016         2,794.40         5.99         26.67%         1.60           2015         2,889.50         4.05         20.00%         0.81           2014         10,191.40         6.19         13.33%         0.83           2013         18,292.60         7.13         6.67%         0.48	2013         31,859.00         198.20         6.67%         13.21           159,633.96         174.95           GION 5 - Pulpwood           Year         Volume         \$/CORD         W/A%         \$/CORD           2017         9,644.70         7.32         33.33%         2.44           2016         2,794.40         5.99         26.67%         1.60           2015         2,889.50         4.05         20.00%         0.81           2014         10,191.40         6.19         13.33%         0.83           2013         18,292.60         7.13         6.67%         0.48		32.03
Year         Volume         \$/CORD         W/A%         \$/CORD           2017         9,644.70         7.32         33.33%         2.44           2016         2,794.40         5.99         26.67%         1.60           2015         2,889.50         4.05         20.00%         0.81           2014         10,191.40         6.19         13.33%         0.48           2013         18,292.60         7.13         6.67%         0.48	Year         Volume         \$/CORD         W/A%         \$/CORD           2017         9.644.70         7.32         33.33%         2.44           2016         2.794.40         5.99         26.67%         1.60           2015         2.889.50         4.05         20.00%         0.81           2014         10,191.40         6.19         13.33%         0.83           2013         18,292.60         7.13         6.67%         0.48		
Year         Volume         \$/CORD         W/A%         \$/CORD           2017         9,644.70         7.32         33.33%         2.44           2016         2,794.40         5.99         26.67%         1.60           2015         2,889.50         4.05         20.00%         0.81           2014         10,191.40         6.19         13.33%         0.83           2013         18,292.60         7.13         6.67%         0.48	Year         Volume         \$/CORD         W/A%         \$/CORD           2017         9,644.70         7.32         33.33%         2.44           2016         2,794.40         5.99         26.67%         1.60           2015         2,889.50         4.05         20.00%         0.81           2014         10,191.40         6.19         13.33%         0.83           2013         18,292.60         7.13         6.67%         0.48	2013 31,859.00 198.20 6.67%	
YearVolume\$/CORDW/A%\$/CORD20179,644.707.3233.33%2.4420162.794.405.9926.67%1.6020152,889.504.0520.00%0.81201410,191.406.1913.33%0.83201318,292.607.136.67%0.48	Year         Volume         \$/CORD         W/A%         \$/CORD           2017         9,644.70         7.32         33.33%         2.44           2016         2,794.40         5.99         26.67%         1.60           2015         2,889.50         4.05         20.00%         0.81           2014         10,191.40         6.19         13.33%         0.83           2013         18,292.60         7.13         6.67%         0.48	159,633.96	174.95
YearVolume\$/CORDW/A%\$/CORD20179,644.707.3233.33%2.4420162,794.405.9926.67%1.6020152,889.504.0520.00%0.81201410,191.406.1913.33%0.83201318,292.607.136.67%0.48	Year         Volume         \$/CORD         W/A%         \$/CORD           2017         9,644.70         7.32         33.33%         2.44           2016         2,794.40         5.99         26.67%         1.60           2015         2,889.50         4.05         20.00%         0.81           2014         10,191.40         6.19         13.33%         0.83           2013         18,292.60         7.13         6.67%         0.48	EGION 5 - Pulpwood	
20162,794.405.9926.67%1.6020152,889.504.0520.00%0.81201410,191.406.1913.33%0.83201318,292.607.136.67%0.48	2016         2,794.40         5.99         26.67%         1.60           2015         2,889.50         4.05         20.00%         0.81           2014         10,191.40         6.19         13.33%         0.83           2013         18,292.60         7.13         6.67%         0.48	Year Volume \$/CORD W/A%	\$/CORD
20152,889.504.0520.00%0.81201410,191.406.1913.33%0.83201318,292.607.136.67%0.48	2015         2,889.50         4.05         20.00%         0.81           2014         10,191.40         6.19         13.33%         0.83           2013         18,292.60         7.13         6.67%         0.48	2017 9,644.70 7.32 33.33%	2.44
2014         10,191.40         6.19         13.33%         0.83           2013         18,292.60         7.13         6.67%         0.48	2014         10,191.40         6.19         13.33%         0.83           2013         18,292.60         7.13         6.67%         0.48	2016 2,794.40 5.99 26.67%	1.60
2013 18,292.60 7.13 6.67% 0.48	2013 18,292.60 7.13 6.67% 0.48		0.81
43,812.60 6.15	43,812.60 6.15	2013 18,292.60 7.13 6.67%	
		43,812.60	6.15

# **COAL PROPERTIES ANALYSIS**

Tax Year 2019

June 28, 2018 Dale W. Steager State Tax Commissioner Department of Revenue

### COAL CAPITALIZATION RATE

### Capitalization Rate Analysis and Results:

In developing a capitalization rate for use in valuing specific income-producing properties consideration is given to the three approaches generally employed in estimating a discount rate. As a matter of practicality, the Bands-of -Investment and Summation Technique approaches are utilized in establishing discount rates for active coal. Data for analysis has been derived in accordance with current Legislative Rule Title 110, Series 11.

		0.11			Coto Dolo			
Sate Rate		reasury Bills			Safe Rate			
	January	December	2017		0.947%			
	January	December	2016		0.319%			
	January				0.053%			
	bandary	December	2010		0.00070			
						D.11.		
<u>Risk Rate</u>	e Interest o	differential be	etween Loai			isury Bills		
	Loan Rate	<u>,</u> *		Debt Risk	Rate			
	2017	6.10%		5,153%				
	2016	5.51%		5.191%				
				5 207%				
	2015	5.26%		5 207 %				
		*Prime plu	s 2%					
Equity	Differenti	ial between l	Equity Rate:	s and 90 da	ay Treasury I	Bills		
	Equity Rat				Equity Risk			
	2017		275)]-0.94	7	20.087%			
	2016		30)]-0.319		20.752%			
	2015	[14.75%/(1	30)]-0.053	3	21.018%			
	** Value L	ine Investme	ent Survey	Analysis				
			-	-				
Composi	te Risk Rat	<b>A</b>	Loan and F	- auity Rate	s weighted h	w industry	estimated ca	pital structu
Composi							countrated ea	pital ottaota
	Equity Rate		Debt Rate		omposite Ri			
2017	13.057%		1.804%		14.861%			
2016	13.489%	, ,	1.817%		15.306%			
2015	13.662%		1.822%		15.484%			
_	bt Equity Ra		Debt	35%	Equity	65%		
Note. De	Di Equity i ve		Debt	5570	Liquity	0070		
						Dillende	4	
Non Liqu	idity Rate						1 year Treas	
		Bill which re	eflects a rea	asonable tir	ne necessar	y to sell ac	tive property.	
					1yr T Bill	90 d T Bill	I Non Lia	uidity Rate
	lanuaar	December	2017		1.201%	0.947%		0.254%
								0 295%
		December			0.614%	0.319%		
	January	December	2015		0.322%	0.053%		0.269%
Managem	ent Rate	Charges fo	r the manar	nement of i	nvestment p	ortfolios.		
Managem	tent Rate		r the manag	-	nvestment p	ortfolios.		
<u>Managem</u>		Charges fo e (by Rule)	r the manag	gement of i 0.500%		ortfolios.		
	Fixed Rate		r the manag	-		ortfolios.		
<u>Managerr</u> Inflation (	Fixed Rate		r the manag	-		ortfolios.		
	Fixed Rate			-		ortfolios.		
	Fixed Rate Rate January	e (by Rule) December	2017	-	2.110%	artfolios.		
	Fixed Rate Rate January January	e (by Rule) December December	2017 2016	-	2.110% 2.070%	artfolios.		
	Fixed Rate Rate January January	e (by Rule) December	2017 2016	-	2.110%	ortfolios.		
Inflation I	Fixed Rate <u>Rate</u> January January January	e (by Rule) December December	2017 2016 2015	0.500%	2.110% 2.070% 0.730%			
Inflation I	Fixed Rate Rate January January	e (by Rule) December December	2017 2016 2015 Since the v	0.500%	2.110% 2.070% 0.730% active coal p	property is	predicated or	
Inflation I	Fixed Rate <u>Rate</u> January January January	e (by Rule) December December	2017 2016 2015 Since the v	0.500%	2.110% 2.070% 0.730% active coal p	property is	predicated or considered ir	
Inflation I	Fixed Rate <u>Rate</u> January January January	e (by Rule) December December	2017 2016 2015 Since the v	0.500%	2.110% 2.070% 0.730% active coal p	property is		
Inflation I	Fixed Rate <u>Rate</u> January January January	e (by Rule) December December	2017 2016 2015 Since the v production manner.	0.500%	2.110% 2.070% 0.730% active coal p ne capitalizat	property is		
Inflation I	Fixed Rate January January January January	e (by Rule) December December December	2017 2016 2015 Since the v production manner. 2017	0.500%	2 110% 2 070% 0.730% active coal p re capitalizat 2016	property is	considered ir 2015	
Inflation I	Fixed Rate January January January ation Rate	e (by Rule) December December December	2017 2016 2015 Since the v production manner. <u>2017</u> -2.110%	0.500%	2.110% 2.070% 0.730% active coal p re capitalizat <u>2016</u> -2.070%	property is ion rate is	considered ir 2015 -0.730%	
Inflation I	Fixed Rate January January January ation Rate Inflation R	e (by Rule) December December December	2017 2016 2015 Since the v production manner. <u>2017</u> -2.110% 0.947%	0.500%	2.110% 2.070% 0.730% active coal p te capitalizat <u>2016</u> -2.070% 0.319%	property is ion rate is	considered ir <u>2015</u> -0.730% 0.053%	
Inflation I	Fixed Rate January January January ation Rate Inflation R Safe Rate Composite	e (by Rule) December December December ate	2017 2016 2015 Since the v production manner. 2017 -2.110% 0.947% 14.861%	0.500%	2.110% 2.070% 0.730% active coal p te capitalizat <u>2016</u> -2.070% 0.319% 15.306%	property is ion rate is	considered ir 2015 -0.730% 0.053% 15.484%	
Inflation I	Fixed Rate January January January January ation Rate Inflation R	e (by Rule) December December December ate	2017 2016 2015 Since the v production manner. <u>2017</u> -2.110% 0.947%	0.500%	2.110% 2.070% 0.730% active coal p re capitalizat <u>2016</u> -2.070% 0.319% 15.306% 0.295%	property is ion rate is	considered ir <u>2015</u> -0.730% 0.053% 15.484% 0.269%	
Inflation I	Fixed Rate January January January ation Rate Inflation R Safe Rate Composite	e (by Rule) December December December ate e Risk Rate dity Rate	2017 2016 2015 Since the v production manner. 2017 -2.110% 0.947% 14.861%	0.500%	2.110% 2.070% 0.730% active coal p te capitalizat <u>2016</u> -2.070% 0.319% 15.306%	property is ion rate is	considered ir 2015 -0.730% 0.053% 15.484%	
Inflation I	Fixed Rate January January January ation Rate Inflation R Safe Rate Composite Non Liquid	e (by Rule) December December December ate e Risk Rate dity Rate	2017 2016 2015 Since the v production manner. <u>2017</u> -2.110% 0.947% 14.861% 0.254%	0.500%	2.110% 2.070% 0.730% active coal p re capitalizat <u>2016</u> -2.070% 0.319% 15.306% 0.295%	property is ion rate is	considered ir <u>2015</u> -0.730% 0.053% 15.484% 0.269%	
Inflation I	Fixed Rate January January January January ation Rate Inflation R Safe Rate Composite Non Liquid Managem	e (by Rule) December December December ate e Risk Rate dity Rate	2017 2016 2015 Since the v production manner. 2017 -2.110% 0.947% 14.861% 0.254% 0.500%	0.500%	2.110% 2.070% 0.730% active coal p re capitalizat 2016 -2.070% 0.319% 15.306% 0.295% 0.500%	property is	2015 -0.730% 0.053% 15.484% 0.269% 0.500%	
Inflation I	Fixed Rate January January January ation Rate Inflation R Safe Rate Composite Non Liquid	e (by Rule) December December December ate e Risk Rate dity Rate	2017 2016 2015 Since the v production manner. <u>2017</u> -2.110% 0.947% 14.861% 0.254%	0.500%	2.110% 2.070% 0.730% active coal p re capitalizat <u>2016</u> -2.070% 0.319% 15.306% 0.295%	property is	considered ir <u>2015</u> -0.730% 0.053% 15.484% 0.269%	
Inflation I	Fixed Rate January January January January ation Rate Inflation R Safe Rate Composite Non Liquid Managem	e (by Rule) December December December ate e Risk Rate dity Rate	2017 2016 2015 Since the v production manner. 2017 -2.110% 0.947% 14.861% 0.254% 0.500%	0.500%	2.110% 2.070% 0.730% active coal p re capitalizat 2016 -2.070% 0.319% 15.306% 0.295% 0.500%	property is	2015 -0.730% 0.053% 15.484% 0.269% 0.500%	
Inflation I	Fixed Rate January January January ation Rate Inflation R Safe Rate Composite Non Liquid Managem Total	e (by Rule) December December December ate e Risk Rate dity Rate ent Rate	2017 2016 2015 Since the v production manner. 2017 -2.110% 0.947% 14.861% 0.254% 0.500% 14.452%	0.500%	2.110% 2.070% 0.730% active coal p ne capitalizat <u>2016</u> -2.070% 0.319% 0.295% 0.295% 0.500% 14.350%	property is ion rate is	considered ir -0.730% 0.053% 15.484% 0.269% 0.500% 15.576%	
Inflation I	Fixed Rate January January January January ation Rate Inflation R Safe Rate Composite Non Liquid Managem	e (by Rule) December December December ate e Risk Rate dity Rate ent Rate	2017 2016 2015 Since the v production manner. 2017 -2.110% 0.947% 14.861% 0.254% 0.500%	0.500%	2.110% 2.070% 0.730% active coal p re capitalizat 2016 -2.070% 0.319% 15.306% 0.295% 0.500%	property is ion rate is	2015 -0.730% 0.053% 15.484% 0.269% 0.500%	
Inflation I	Fixed Rate January January January ation Rate Inflation R Safe Rate Composite Non Liquid Managem Total	e (by Rule) December December December ate e Risk Rate dity Rate ent Rate	2017 2016 2015 Since the v production manner. 2017 -2.110% 0.947% 14.861% 0.254% 0.500% 14.452%	0.500%	2.110% 2.070% 0.730% active coal p ne capitalizat <u>2016</u> -2.070% 0.319% 0.295% 0.295% 0.500% 14.350%	property is ion rate is	considered ir -0.730% 0.053% 15.484% 0.269% 0.500% 15.576%	
Inflation I	Fixed Rate January January January ation Rate Inflation R Safe Rate Composite Non Liquid Managem Total	e (by Rule) December December December ate e Risk Rate dity Rate ent Rate	2017 2016 2015 Since the v production manner. 2017 -2.110% 0.947% 14.861% 0.254% 0.500% 14.452%	0.500%	2.110% 2.070% 0.730% active coal p ne capitalizat <u>2016</u> -2.070% 0.319% 0.295% 0.295% 0.500% 14.350%	property is ion rate is	considered ir -0.730% 0.053% 15.484% 0.269% 0.500% 15.576%	
Inflation I	Fixed Rate January January January ation Rate Inflation R Safe Rate Composite Non Liquid Managem Total	e (by Rule) December December December ate e Risk Rate dity Rate ent Rate	2017 2016 2015 Since the v production manner. 2017 -2.110% 0.947% 14.861% 0.254% 0.500% 14.452% 14.793	0.500% raluation of average, th	2 110% 2.070% 0.730% active coal p re capitalizat <u>2016</u> -2.070% 0.319% 15.306% 0.295% 0.500% 14.350% Rounded to	property is ion rate is	considered ir -0.730% 0.053% 15.484% 0.269% 0.500% 15.576%	
Inflation I	Fixed Rate January January January ation Rate Inflation R Safe Rate Composite Non Liquid Managem Total	e (by Rule) December December December ate e Risk Rate dity Rate ent Rate Average:	2017 2016 2015 Since the v production manner. 2017 -2.110% 0.947% 14.861% 0.500% 14.452% 14.452% 14.793	0.500% valuation of average, th TE - 14.8%	2 110% 2.070% 0.730% active coal p re capitalizat <u>2016</u> -2.070% 0.319% 15.306% 0.295% 0.500% 14.350% Rounded to	oroperty is ion rate is	considered ir -0.730% 0.053% 15.484% 0.269% 0.500% 15.576%	
Inflation I	Fixed Rate January January January ation Rate Inflation R Safe Rate Composite Non Liquid Managem Total	e (by Rule) December December December ate e Risk Rate dity Rate ent Rate	2017 2016 2015 Since the v production manner. 2017 -2.110% 14.861% 0.254% 0.500% 14.452% 14.793 24.793	0.500% valuation of average, th <u>TE - 14.8%</u>	2.110% 2.070% 0.730% active coal p re capitalizat <u>2016</u> -2.070% 0.319% 0.5306% 0.295% 0.500% 14.350% Rounded to	oroperty is ion rate is o.	considered ir -0.730% 0.053% 15.484% 0.269% 0.500% 15.576%	
Inflation I	Fixed Rate January January January ation Rate Inflation R Safe Rate Composite Non Liquid Managem Total	e (by Rule) December December December ate e Risk Rate dity Rate ent Rate Average:	2017 2016 2015 Since the v production manner. 2017 -2.110% 0.947% 14.861% 0.254% 0.500% 14.452% 14.793 <b>24TION RA</b> RS: 1YR	0.500% raluation of average, th <u>TE - 14.8%</u> 0.933	2.110% 2.070% 0.730% active coal p the capitalizat 2016 -2.070% 0.319% 0.295% 0.295% 0.500% 14.350% Rounded to 9YR	oroperty is lion rate is y. % 5.149	considered ir -0.730% 0.053% 15.484% 0.269% 0.500% 15.576%	
Inflation I	Fixed Rate January January January ation Rate Inflation R Safe Rate Composite Non Liquid Managem Total	e (by Rule) December December December ate e Risk Rate dity Rate ent Rate Average:	2017 2016 2015 Since the v production manner. 2017 -2.110% 14.861% 0.254% 0.500% 14.452% 14.793 24.793	0.500% valuation of average, th <u>TE - 14.8%</u>	2.110% 2.070% 0.730% active coal p re capitalizat <u>2016</u> -2.070% 0.319% 0.5306% 0.295% 0.500% 14.350% Rounded to	oroperty is ion rate is o.	considered ir -0.730% 0.053% 15.484% 0.269% 0.500% 15.576%	
Inflation I	Fixed Rate January January January ation Rate Inflation R Safe Rate Composite Non Liquid Managem Total	e (by Rule) December December December ate e Risk Rate dity Rate ent Rate Average:	2017 2016 2015 Since the v production manner. 2017 -2.110% 0.947% 14.861% 0.254% 0.500% 14.452% 14.793 24TION RA ERS: 1YR 2YR	0.500% raluation of average, th <u>TE - 14.8%</u> 0.933 1.746	2.110% 2.070% 0.730% active coal p the capitalizat 2016 -2.070% 0.319% 0.295% 0.500% 14.350% Rounded to 9YR 10YR	oroperty is lion rate is y. % 5.149	considered ir -0.730% 0.053% 15.484% 0.269% 0.500% 15.576%	
Inflation I	Fixed Rate January January January ation Rate Inflation R Safe Rate Composite Non Liquid Managem Total	e (by Rule) December December December ate e Risk Rate dity Rate ent Rate Average:	2017 2016 2015 Since the v production manner. 2017 -2.110% 0.947% 14.861% 0.254% 0.500% 14.452% 14.793 <b>24TION RA</b> <b>25TION RA</b> 27R 27R 37R	0.500% valuation of average, th <u>TE - 14.8%</u> 0.933 1.746 2.454	2.110% 2.070% 0.730% active coal p re capitalizat 2016 -2.070% 0.319% 15.306% 0.295% 0.500% 14.350% Rounded to 9YR 10YR 11YR	5.149 5.653	considered ir -0.730% 0.053% 15.484% 0.269% 0.500% 15.576%	
Inflation I	Fixed Rate January January January ation Rate Inflation R Safe Rate Composite Non Liquid Managem Total	e (by Rule) December December December ate e Risk Rate dity Rate ent Rate Average:	2017 2016 2015 Since the v production manner. 2017 -2.110% 0.947% 14.861% 0.500% 14.452% 14.452% 14.793 24TION RA ERS: 1YR 2YR 3YR 4YR	0.500% valuation of average, th average, th 0.933 1.746 2.454 3.071	2.110% 2.070% 0.730% active coal p re capitalizat <u>2016</u> -2.070% 0.319% 15.306% 0.295% 0.500% 14.350% Rounded to 9YR 10YR 11YR 11YR	5.149 5.82 5.858	considered ir -0.730% 0.053% 15.484% 0.269% 0.500% 15.576%	
Inflation I	Fixed Rate January January January ation Rate Inflation R Safe Rate Composite Non Liquid Managem Total	e (by Rule) December December December ate e Risk Rate dity Rate ent Rate Average:	2017 2016 2015 Since the v production manner. 2017 -2.110% 0.947% 14.861% 0.254% 0.500% 14.452% 14.793 14.793 24TION RA ERS: 1YR 2YR 3YR 4YR 5YR	0.500% raluation of average, th w 0.933 1.746 2.454 3.071 3.609	2.110% 2.070% 0.730% active coal p re capitalizat 2016 -2.070% 0.319% 0.295% 0.500% 14.350% Rounded to 9YR 10YR 11YR 12YR 13YR	00000000000000000000000000000000000000	considered ir -0.730% 0.053% 15.484% 0.269% 0.500% 15.576%	
Inflation I	Fixed Rate January January January ation Rate Inflation R Safe Rate Composite Non Liquid Managem Total	e (by Rule) December December December ate e Risk Rate dity Rate ent Rate Average:	2017 2016 2015 Since the v production manner. 2017 -2.110% 0.947% 14.861% 0.500% 14.452% 14.452% 14.793 24TION RA ERS: 1YR 2YR 3YR 4YR	0.500% valuation of average, th average, th 0.933 1.746 2.454 3.071	2.110% 2.070% 0.730% active coal p re capitalizat <u>2016</u> -2.070% 0.319% 15.306% 0.295% 0.500% 14.350% Rounded to 9YR 10YR 11YR 11YR	5.149 5.82 5.858	considered ir -0.730% 0.053% 15.484% 0.269% 0.500% 15.576%	

7YR

8YR

4.485

4.840

15YR

6.326

#### COAL

### Price and Royalty Rate Analysis

The development of royalty rates for the various categories of mines and markets involves information collection and review from a variety of sources. Coal lease rates have been derived from transaction information provided by county producers, assessors, tax auditors, and by individual lessors/lessees involved in the specific transaction. The prices for mined coal, as per 110-CSR-11, have been calculated from information provided by the WV Public Service Commission and U.S. Energy Information Administration concerning powe plant fuel purchases. Prices provided by producers as part of tax filing and from data obtained from market summaries are included for comparison. Because a large portion of the data used in this analysis is, by law, considered confidential, only a summary of the results are published.

2012

5YR

8,087.34 3.313.93

%D

599

5,53

5.00

5.84

%S

1.354

5,97

5.00

6.58

### COAL SALE PRICES FOR TY19 APPLICATION

	STEAM	STEAM							
GRAND SUMMARY ALL SOURCES	SPOT	TERM		MET					
PSC (2017)	\$51.60	\$50.22							
FERC (2017)	\$48.88	\$51.70							
Active Return Summary (2017)	In Progress	In Progress	In Progress	\$101.00					
Coal Market Publication	\$45.75	PGH (13/3) Rail		\$119.19 Lo	w Vol HCC				
(3 yer average - Platts)	\$49.24 (	CAPP (12/1.67) Ba	rge	\$121.42 Hi \$105.57 Hi	D				
STATE STEAM PRICE	\$49.78 6	ERC & PSC, 3 Yr	Ave SPOT						
STATE MET PRICE	\$101.00 A	Active Return							
	Spot Sales	Term Sales	Total						
2017 WVPSC Reported Tons	5,386,369	12.827,197	18,213,566						
COAL TY19 ROYALTY RATES		tive Return	2015		2014		-	13	-
		YR	2YR		3YR			′R	
	%S	%D	%S	%D	%\$	%D	%S	%D	
TOTAL RECORDS	672	640	691	776	447	452		905	
SUM of PERCENT	4,166.40	3,526.40		4,020.76				4.695,25	
STRAIGHT AVERAGE	6.20	5,51	6,43		6.50	5,15	6,13	5,19	
MEDIAN	6.00	5,72	6.00	5.50	6.00	5.00	6.00	5.00	
WEIGHTED AVERAGE(by Active Acres)	6.45	5.83	6.62	5.45	6.80	5.10	6.94	5.49	
ROYALTY RATE DEEP (%)	5.54								
ROYALTY RATE SURFACE (%)	6.68								
ROYALTY RATE CALCULATIONS									
Steam Coal/ Deep Mine	\$49.78	perton X	5.54%	=	\$2.76	per ton			
Metallurgical Coal/ Deep Mine	S101.00	per ton X	5.54%	=	\$5.60	per ton			
Steam Coal/ Surface Mine	\$49.78	per ton X	6.68%	=	\$3.32	per ton			
Metallurgical Coal/ Surface Mine	\$101.00	per ton X	6.68%	=	\$6.74	per ton			

OTTAN

OTTAN

# **Explanation of Reserve Coal Valuation**

The RCVM consists of a computer model, which utilizes a database consisting of coal beds and characteristics, property locations, mine locations, sales, transportation, etc., for the entire state. An extensive algorithm calculates in-place tonnage, expected time of mining and present value for all the mineable coal on every property.

There are, therefore, no set "rates" available on reserve coal under the Rule. The RCVM values on each property will not be available until all data has been entered, after October 15 of each year. Please refer to the State Register, Legislative Rules, Title 110, Series 1I for details of the process.

#### Title 110, Series 11

#### Valuation of Active and Reserve Coal Property for Ad Valorem Property Tax Purposes

The above Legislative Rule was modified during the 2005 Legislative Session requiring biennial (every other year) updating of the geostatistical basis for several valuation factors used in the Reserve Coal Valuation Model. To satisfy that requirement, maps and data files concerning the Market Interest Factor, the Market Mineability Factor, the Use Conflict Factor and the Environmental Factor were revised for Tax Year 2019. Preliminary research has been conducted to determine the effects of the factors on coal valuation. The results are as follows:

#### Market Interest Factor

This is the relationship between transactions (sales, leases, prospects, permit applications, etc.) and mining as it relates to properties and locations. Trans\_Ct is the number of transactions counted within the radius. Radius = 5 miles

If Trans\_Ct ~= 30 Then TransFactor = 20

If Trans\_Ct < 30 And Trans\_Ct >= 20 Then TransFactor = 40

Else TransFactor 80

#### Market Mineability Factor

This is the relationship between property location and mining, through time. Determining feature is count of mines within the radius.

Radius = 2.5 miles

Surface Mines Smine

Deep Mines Dmine

Boom Mines Brune

Historic Mines. Omine

Current Mines: Cmine

To assign MineFactor

If Cmine > 0 Then MineFactor = 20

If Crine = 0 And (Omine > 0 Or Brine = 0) Then MineFactor = 40

Else MineFactor 80

### **Use Conflict Factor**

This is the relationship between oil & gas well drilling and mining as it relates to property location. Well density is in wells per square mile.

WellDensity > 5 Then WellFactor = 0 WellDensity >= 5 And WellDensity > 10 Then WellFactor = 20

WellDensity > 10 And WellDensity > 15 Then WellFactor = 40

WellDensity > 15 Then WellFactor = 80

### Environmental Factor

This is the relationship of known environmental hazards and impediments to the likelihood of mining occurring at this location. The rates are compiled from maps and represent densities of problems mapped.

Envrate <= 10 or Null Then EnvFactor = 0

Envrate > 10 and Envrate <= 20 Then EnvFactor = 20

Envrate > 20 and Envrate <= 60 Then EnvFactor = 40

Envrate > 60 Then EnvFactor = 80

# OTHER MINED MINERAL PROPERTY ANALYSIS

Tax Year 2019

June 28, 2018 Dale W. Steager State Tax Commissioner Department of Revenue

### OTHER MINED MINERALS CAPITALIZATION RATE

Capitalization Rate Analysis and Results:

In developing a capitalization rate for use in valuing specific income-producing properties consideration is given to the three approaches generally employed in estimating a discount rate. As a matter of practicality, the Bands-of -Investment and Summation Technique approaches are utilized in establishing discount rates for active coal. Data for analysis has been derived in accordance with current Legislative Rule Title 110, Series 1k.

Safe Rate	90 day T	reasury Bills			Safe Rate	9		
	January	December	2017		0.947%	-		
	January	December	2016					
	,				0.319%			
	January	December	2015		0.053%			
<u>Risk Rate</u>	Interest (	differential bet	ween Loa	n Rate and §	90 day Tre	asury Bills		
L	oan Rate	e*		Debt Risk	Rate			
	2017	6.10%		5.153%				
	2016	5.51%		5.191%				
	2015	5,26%		5.207%				
	2013		201	0.20776				
		*Prime plus	∠%					
					_			
<u>Equity</u>	Differenti	ial between E	quity Rate	s and 90 day	y Treasury	Bills		
E	quity Ral	e**			Equity Ris	sk Rate		
	2017	[12.00%/(1	275)]-0.94	17	15.605%	, 0		
	2016	11.75%/(1	30)1-0.319	)	16.467%	'n		
	2015	11.75%/(1			16.733%	,		
**		ine Investmer						
	Parac L	ine mecouner	n ourrey	Analysis				
Composite	Diele Dot		oon ond	Equity Boto	waiabtod	by inductor	actimated or	anital stausture
Composite I	RISK Rdi		Luananu					apital structure.
		Equity Rate		Debt Rate	ć	Composite F		
	2017	10.143%		1.804%		11.947%	ł	
	2016	9.880%		2.076%		11.956%	•	
	2015	10.040%		2.083%		12.123%	÷	
N	lote: Deb	t Equity Ratio	)	Debt	35%	Equity	65%	
						• •		
Non Liquidit	tv Rate		Interest o	differential be	etween 90	day Treasu	v Bills and a	1 year Treasury
tion Enquiate	() Hutte							tive property.
			DIB WHICH .	remetts a rea	asonable (i	me necessa	a y to sell act	ave property.
					4 . T D.0	00 I T D'II	AL	14% D.4%
					<u>1yr T Bill</u>	<u>90 d T Bil</u>	NON LIQ	uidity Rate
		December	2017		1.201%	0.947%		0.254%
	January	December	2016		0.614%	0.319%		0.295%
	January	December	2015		0.322%	0.053%		0 269%
Managemen	t Rate	Charges for	the manad	aement of in-	vestment c	ortfolios.		
		(by Rule)		0.500%				
	incu i tuit	(b) (tale)		0.00070				
Inflation Rat	0							
	_	December	2017		2 4100/			
		December	2017		2.110%			
		December	2016		2.070%			
J	January	December	2015		0.730%			
Property Tax	<u>k Rate</u>	Sixty percent	(60%) of	State average	ge Class II	I property ta	ax rate.	
Ja	anuary	December	2017	60% of 2.1	80 =	1.308%		
	anuary	December	2016	60% of 2.1	80 =	1.308%		
	anuary	December	2015	60% of 2.1		1.314%		
92	anuary	December	2010	00 /0 01 2.13	50 -	1.01470		
Conitalizatio	n Data		Dinon the s	internation of a	athar mina	d minoral n	ropodu io pr	diantad an a three
<u>Capitalizatio</u>	n Rate							edicated on a three
				iction averag	je, the cap	italization ra	ite is conside	ered in a similar
		ſ	nanner.					
			<u>2017</u>		<u>2016</u>		<u>2015</u>	
Int	flation Ra	ate	-2.110%		-2.070%		-0.730%	
Sa	afe Rate		0.947%		0.319%		0.053%	
		Risk Rate	11.947%		11.956%		12.123%	
	on Liquid		0.254%		0.295%		0.269%	
	anageme	/	0.500%		0.500%		0.500%	
	roperty Tr	ax Rate	1.308%		1.308%		1.314%	
To			12.846%		12.308%		13.529%	
	Jiai							
	Jiai							
Tł		verage:	12.894%		Rounded t	o:	12.90%	
Tr		verage:	12.894%		Rounded t	0:	12.90%	
Tł		verage: <u>CAPITALIZ</u> A				0:	12.90%	
Tr						0:	12.90%	
Tr			TION RA	TE <u>- 12.90%</u>			12.90%	
Τŀ			TION RA	TE <u>- 12.90%</u> %	2	%	12.90%	
Tr			TION RA	<u>TE - 12.90%</u> % 0.941	9YR	% 5.473	12.90%	
Tr			TION RA RS: 1YR 2YR	<u>TE - 12.90%</u> % 0.941 1.775	9YR 10YR	% 5.473 5.789	12.90%	
Tł			S: 1YR 2YR 3YR	TE - <b>12.90%</b> % 0.941 1.775 2.513	9YR 10YR 11YR	% 5.473 5.789 6.068	12.90%	
Т			S: 1YR 2YR 3YR 4YR	<u>TE - 12.90%</u> % 0.941 1.775 2.513 3.167	9YR 10YR 11YR 12YR	% 5.473 5.789 6.068 6.316	12.90%	
Tř			S: 1YR 2YR 3YR	<u>7E - 12.90%</u> % 0.941 1.775 2.513 3.167 3.746	9YR 10YR 11YR	% 5.473 5.789 6.068 6.316 6.536	12.90%	
Tr			S: 1YR 2YR 3YR 4YR	<u>TE - 12.90%</u> % 0.941 1.775 2.513 3.167	9YR 10YR 11YR 12YR	% 5.473 5.789 6.068 6.316	12.90%	

7YR

8YR

4.714

5.116

15YR

6.902

# **OTHER MINED MINERALS**

# ROYALTY RATE SURVEY

The determination of royalty rates for other mined minerals within the state of West Virginia is dependent upon the availability of leasehold information. Since this information is limited, the Department has chosen to <u>review</u> data for the most recent thirty year period. A summary only of this review is shown below in order to protect the confidentiality of parties involved.

	DATA	AVERAGE	MEDIAN	TY2019
RESOURCE	SOURCES	ROYALTY	ROYALTY	RATE
LIMESTONE	15	\$0.22	\$0.20	\$0.22
SANDSTONE	8	\$0.31	\$0.25	\$0.30
CLAY/SHALE	34	\$0.12	\$0.10	\$0.11
SAND/GRAVEL	10	\$0.35	\$0.40	\$0.40
SALT BRINE	1	N/A	N/A	\$0.10

# RESERVE VALUES

	number of sales	\$/AC
LIMESTONE	5	\$3,000.00
SANDSTONE	8	\$2,300.00
CLAY/SHALE	16	\$850.00
SAND/GRAVEL	6	\$4,000.00
SALT	2	\$1,140.00