



STATE OF WEST VIRGINIA

Department of Revenue  
State Tax Department

Earl Ray Tomblin  
Governor

Craig A. Griffith  
State Tax Commissioner

June 30, 2011

The Honorable Natalie Tennant  
Secretary of State  
Building 1, Suite 157-K  
State Capitol  
Charleston, West Virginia 25305

STATE OF WEST VIRGINIA  
PROPERTY TAX DIVISION  
2011 JUN 03 PM 1:57

Dear Secretary Tennant:

Attached are tentative natural resource property valuation variables for the 2012 Tax Year that have been developed by the State Tax Department for use in appraising oil and gas, managed timberland, coal 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, 2011. Final valuation variables will be filed on or before September 1, 2011.

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,

Craig A. Griffith  
State Tax Commissioner

CAG/jaj

Attachment

**OIL AND GAS PROPERTIES ANALYSIS**

**Tax Year 2012**

June 30, 2011  
Craig A. Griffith  
State Tax Commissioner  
Department of Revenue

**OIL AND GAS**

TY 2012

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.

<u>Safe Rate</u>	( 3-Month Constant Maturity Interest Rates )			
January	December	2010		<b>0.137%</b>

<u>Risk Rate</u>	(Interest differential between Loan Rate and 3-Month Constant Maturity Interest Rates)			
<u>Loan Rate*</u>			<u>Risk Rate</u>	
2010	5.250%		5.113%	
	*Prime plus 2%			

<u>Equity</u>	(Differential between Equity Rates and 3-Month Constant Maturity Interest Rates)			
<u>Equity Rate**</u>			<u>Risk Rate</u>	
2010	{12.25%/(1-.37)}	-0.137%	19.307%	
	** Value Line Investment Survey Analysis			

<u>Composite Risk Rate</u>	Loan and Equity Rates weighted by industry estimated capital structure.				
	<u>Equity Rate</u>	<u>Debt Rate</u>		<u>Composite Risk</u>	
2010	12.5498%	1.790%		<b>15.094%</b>	***
Note: Debt equity Ratio		Debt	35%	Equity	65%
*** Effective severance tax adjustment			0.95		

<u>Non Liquidity Rate</u>	Interest differential between 3-month Constant Maturity Interest Rates and a 1 year Constant Maturity Interest Rates which reflects a reasonable time necessary to sell active property.				
			<u>1yr T Bill</u>	<u>90 day T Bill</u>	<u>Non Liquidity Rate</u>
January	December	2010	0.318%	0.137%	<b>0.181%</b>

<u>Management Rate</u>	Charges for the management of investment portfolios.	
Fixed Rate (by Rule)		<b>0.500%</b>

<u>Property Tax Rate</u>	Sixty percent (60%) of State average Class III property tax rate.		
	2010	60% of 2.19=	<b>1.314%</b>

<u>Inflation Rate</u>			
January	December	2010	<b>1.500%</b>

**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.

	<u>2010</u>	<u>2009</u>	<u>2008</u>
Inflation Rate	-1.500%	-2.700%	-0.100%
Safe Rate	0.137%	0.150%	1.392%
Composite Risk Rate	15.094%	15.352%	14.993%
Non Liquidity Rate	0.181%	0.320%	0.431%
Management Rate	0.500%	0.500%	0.500%
Property Tax Rate	1.314%	1.308%	1.296%
Total	15.726%	14.930%	18.512%
	50.000%	33.333%	16.667%
	7.863%	4.977%	3.085%
			15.925%

Capitalization Rate Rounded to:

15.90%

**MULTIPLIERS FOR 15.9% MID-YEAR LIFE (ANNUALLY)**

<u>YEAR</u>		<u>YEAR</u>	
1	0.928877	21	0.048561
2	0.801447	22	0.041899
3	0.691499	23	0.036151
4	0.596634	24	0.031192
5	0.514783	25	0.026913
6	0.444162	26	0.023221
7	0.383228	27	0.020035
8	0.330654	28	0.017286
9	0.285293	29	0.014915
10	0.246154	30	0.012869
11	0.212385	31	0.011103
12	0.183249	32	0.009580
13	0.158109	33	0.008266
14	0.136419	34	0.007132
15	0.117704	35	0.006153
16	0.101556	36	0.005309
17	0.087624	37	0.004581
18	0.075603	38	0.003952
19	0.065231	39	0.003410
20	0.056282	40	0.002942



### Decline Rates for Natural Gas and Oil Formations

Code		Central	Central	Central	
		Year 1	Year 2	Year 3+	Braxton
12	Alexander, Benson	-0.31	-0.20	-0.10	Clay
14	Benson	-0.48	-0.08	-0.08	Fayette
16	Benson, Balltown	-0.45	-0.16	-0.12	Nicholas
17	Gordon +	-0.30	-0.07	-0.07	Webster
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	Ravenclyff	-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	

\* New Formation(s) involved in recent production. These will be valued with the Exception rates until decline information is available.

## Decline Rates for Natural Gas and Oil Formations

Code			East	East	East	
			Year 1	Year 2	Year 3+	Berkeley
1	Oriskany		-0.30	-0.30	-0.19	Grant
14	Benson		-0.31	-0.17	-0.12	Greenbrier
20	Benson +		-0.44	-0.20	-0.08	Hampshire
21	Benson, Fifth		-0.29	-0.28	-0.09	Hardy
32	Brallier +		-0.48	-0.20	-0.05	Jefferson
33	Elk, Benson		-0.39	-0.21	-0.08	Mineral
34	Elk, Benson, Riley		-0.53	-0.19	-0.05	Monroe
35	Elk, Benson, Riley +		-0.36	-0.19	-0.11	Morgan
36	Elk, Benson, Balltown		-0.34	-0.18	-0.11	Pendleton
37	Elk, Alexander, Benson		-0.50	-0.07	-0.07	Pocahontas
38	Elk, Alexander, Benson +		-0.40	-0.16	-0.16	Preston
39	Hunterville		-0.31	-0.31	-0.14	Randolph
40	Fox, Haverly		-0.36	-0.21	-0.15	Summers
93	4th Sand		-0.42	-0.32	-0.08	Tucker
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*		-0.41	-0.22	-0.10	
9	Exception (median)		-0.41	-0.22	-0.10	
10	Non-Filer		-0.29	-0.07	-0.05	

\* New Formation(s) involved in recent production. These will be valued with the Exception rates until decline information is available.

## Decline Rates for Natural Gas and Oil Formations

Code			North	North	North	
			Year 1	Year 2	Year 3+	
						Brooke
11	Gordon		-0.47	-0.31	-0.09	Hancock
13	Alexander, Benson, Riley		-0.26	-0.16	-0.15	Marshall
15	Benson, Riley		-0.18	-0.16	-0.06	Ohio
93	4th Sand		-0.42	-0.32	-0.08	Tyler
94	50 Foot		-0.34	-0.26	-0.07	Weizel
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*		-0.39	-0.23	-0.08	
9	Exception (median)		-0.39	-0.23	-0.08	
10	Non-Filer		-0.18	-0.16	-0.06	

\* New Formation(s) involved in recent production. These will be valued with the Exception rates until decline information is available.



Decline Rates for Natural Gas and Oil Formations

Code		North	North	North	
		Central	Central	Central	
		Year 2	Year 2	Year 3	
11	Gordon	-0.41	-0.14	-0.12	Barbours
12	Alexander, Benson	-0.37	-0.19	-0.11	Doddridge
13	Alexander, Benson, Riley	-0.40	-0.28	-0.05	Gilmer
14	Benson	-0.31	-0.17	-0.12	Hamison
15	Benson, Riley	-0.34	-0.17	-0.14	Lewis
18	Big Injun	-0.36	-0.15	-0.13	Mannion
21	Benson, Fifth	-0.31	-0.20	-0.14	Monongalia
28	Weir	-0.34	-0.34	-0.07	Taylor
29	Weir +	-0.28	-0.28	-0.23	Upshur
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, Haverly	-0.46	-0.16	-0.08	
50	Rhinesreat	-0.28	-0.03	-0.03	
57	Alexander, Benson, Balltown	-0.39	-0.26	-0.08	
58	Alexander	-0.35	-0.20	-0.10	
59	Alexander +	-0.39	-0.22	-0.10	
60	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	
65	Benson, Bradford	-0.37	-0.20	-0.10	
66	Benson, Balltown	-0.29	-0.23	-0.11	
67	Benson, Riley +	-0.38	-0.14	-0.10	
68	Benson, Speechley	-0.30	-0.22	-0.14	
69	Brallier, Elk	-0.42	-0.20	-0.13	
70	Brallier	-0.40	-0.22	-0.15	
71	Deeper/Onondago or Oriskany/Helderberg	-0.24	-0.24	-0.03	
72	Elk, Alexander	-0.42	-0.22	-0.09	
73	Elk, Benson +	-0.38	-0.20	-0.12	
74	Elk	-0.43	-0.12	-0.10	
75	Elk, Riley	-0.60	-0.35	-0.17	
76	Fox +	-0.46	-0.18	-0.09	
77	Haverly, Elk, Benson (no Alexander)	-0.35	-0.16	-0.16	
78	Haverly	-0.45	-0.15	-0.15	
79	Riley	-0.44	-0.22	-0.10	
80	Speechley	-0.30	-0.18	-0.09	
81	Alexander, Benson, Speechley	-0.39	-0.24	-0.10	
82	Haverly, Elk, Alexander	-0.47	-0.14	-0.14	
85	Fifth Oil	-0.45	-0.25	-0.22	
87	Bayard All	-0.30	-0.20	-0.05	
88	Fifth	-0.29	-0.18	-0.12	
89	Fifth +	-0.25	-0.15	-0.13	
90	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	
94	5D Fool	-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	
98	Coalbed Methane (horizontal)	-0.05	-0.05	-0.32	
109	Trenton/Deeper*	-0.38	-0.21	-0.11	
110	Marcellus Shale*	-0.38	-0.21	-0.11	
9	Exception (median)	-0.38	-0.21	-0.11	
10	Non-Filer	-0.23	-0.03	-0.03	

\* New Formation(s) involved in recent production. These will be valued with the Exception rates until decline information is available.

**Decline Rates for Natural Gas and Oil Formations**

Code		North	North	North	
		West	West	West	
		Year 1	Year 2	Year 3	Pleasant
2	Huron, Rhinestreef	-0.41	-0.26	-0.07	Richie
4	Huron	-0.42	-0.24	-0.14	Wood
5	Huron, Shale, 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	Rhinestreef, Huron, Shallow Shale	-0.43	-0.28	-0.11	
47	Alexander, Riley, (no Benson)	-0.41	-0.05	-0.05	
48	Rhinestreef, Alexander, Benson, Riley	-0.31	-0.24	-0.10	
49	Weir, Squaw, Big Injun	-0.27	-0.17	-0.07	
50	Rhinestreef	-0.40	-0.27	-0.27	
51	Rhinestreef +	-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, Bailtown, 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	
109	Trenton/Deeper*	-0.39	-0.23	-0.13	
110	Marcellus*	-0.39	-0.23	-0.13	
9	Exception (median)	-0.39	-0.23	-0.13	
10	Non-Filer	-0.12	-0.05	-0.05	

\* New Formation(s) involved in recent production. These will be valued with the Exception rates until decline information is available.

## Annual Production Rate Changes for Natural Gas and Oil Formations

Code			South	South	South	
			Year 1	Year 2	Year 3+	
						McDowell
8	Berea		-0.34	-0.15	-0.15	Mercer
22	Big Lime		-0.31	-0.19	-0.07	Raleigh
23	Big Lime, Maxton		-0.31	-0.19	-0.07	Wyoming
24	Big Lime, Ravencloff		-0.29	-0.29	-0.17	
25	Berea +		-0.37	-0.12	-0.08	
26	Ravencloff		-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, Ravencloff		-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	
10	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

Code			South	South	South	Boone
			Central	Central	Central	
			Year 1	Year 2	Year 3	Kanawha
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	

\* New Formation(s) involved in recent production. These will be valued with the Exception rates until decline information is available.

## Decline Rates for Natural Gas and Oil Formations

Code			South	South	South	
			West	West	West	
			Year 1	Year 2	Year 3	
3	Devonian Shale		-0.31	-0.15	-0.04	Cabell
8	Berea		-0.36	-0.11	-0.11	Lincoln
18	Big Injun		-0.38	-0.22	-0.04	Logan
22	Big Lime		-0.19	-0.19	-0.19	Mingo
43	Berea, Big Lime		-0.18	-0.18	-0.18	Wayne
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	

\* New Formation(s) involved in recent production. These will be valued with the Exception rates until decline information is available.

## Decline Rates for Natural Gas and Oil Formations

Code		West Central	West Central	West Central	
		Year 1	Year 2	Year 3	
					Calhoun
2	Huron, Rhinestreet	-0.49	-0.11	-0.06	Roane
4	Huron	-0.33	-0.22	-0.14	Wirt
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	

\* New Formation(s) involved in recent production. These will be valued with the Exception rates until decline information is available.

## Decline Rates for Natural Gas and Oil Formations

Code		West	West	West	
		Year 1	Year 2	Year 3	
					Jackson
1	Oriskany	-0.40	-0.40	-0.29	Mason
2	Huron, Rhinestreet	-0.13	-0.12	-0.03	Putnam
3	Devonian Shale	-0.31	-0.15	-0.04	
4	Huron	-0.29	-0.14	-0.05	
5	Huron, Shale, Above Huron	-0.38	-0.15	-0.06	
6	Huron, Berea	-0.29	-0.08	-0.08	
7	Berea, Devonian Shales	-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	

\* New Formation(s) involved in recent production. These will be valued with the Exception rates until decline information is available.

## 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. The survey requested working costs for the 2007 calendar year producing wells.

### GAS

- % Working Interest Expenses for Typical Producing Well	=	30%
- 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

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 \$ 4.16/MCF  
BBL usage X \$79.48/BBL

\*(Also includes Department of Environmental 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. The two 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 2012			
COUNTY	CO #	DISTRICT #	TY2012 \$/AC
BARBOUR	1	1	\$25.00
		2	\$25.00
		3	\$25.00
		4	\$25.00
		5	\$25.00
		6	\$1.00
		7	\$25.00
		8	\$25.00
		9	\$25.00
		10	\$25.00
		11	\$25.00
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	\$20.00
		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	\$20.00
		4	\$20.00
		5	\$1.00
		6	\$1.00
		7	\$1.00
		8	\$1.00

OIL & GAS RESERVE RATES FOR TY 2012			
COUNTY	CO #	DISTRICT #	TY2012 \$/AC
CABELL	6	1	\$20.00
		2	\$1.00
		3	\$20.00
		4	\$20.00
		5	\$1.00
		6	\$1.00
		7	\$1.00
		8	\$20.00
		9	\$1.00
		10	\$20.00
CALHOUN	7	1	\$20.00
		2	\$1.00
		3	\$20.00
		4	\$20.00
		5	\$20.00
		6	\$20.00
CLAY	8	1	\$20.00
		2	\$1.00
		3	\$20.00
		4	\$20.00
		5	\$20.00
		6	\$20.00
DODDRIDGE	9	1	\$25.00
		2	\$25.00
		3	\$25.00
		4	\$25.00
		5	\$25.00
		6	\$25.00
		7	\$25.00
		8	\$25.00
		9	\$1.00
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

OIL & GAS RESERVE RATES FOR TY 2012			
COUNTY	CO #	DISTRICT #	TY2012 \$/AC
GILMER	11	1	\$20.00
		2	\$20.00
		3	\$20.00
		4	\$1.00
		5	\$1.00
		6	\$20.00
GRANT	12	1	\$1.00
		2	\$1.00
		3	\$15.00
		4	\$1.00
		5	\$15.00
GREENBRIER	13	1	\$1.00
		2	\$1.00
		3	\$15.00
		4	\$15.00
		5	\$1.00
		6	\$15.00
		7	\$15.00
		8	\$15.00
		9	\$15.00
		10	\$1.00
		11	\$15.00
		12	\$1.00
		13	\$1.00
		14	\$1.00
		15	\$1.00
		16	\$15.00
		17	\$1.00
		18	\$15.00
HAMPSHIRE	14	1	\$10.00
		2	\$1.00
		3	\$1.00
		4	\$1.00
		5	\$10.00
		6	\$1.00
		7	\$10.00
		8	\$1.00
		9	\$10.00
		10	\$10.00
HANCOCK	15	1	\$20.00
		2	\$1.00
		3	\$20.00
		4	\$20.00
		5	\$1.00
		6	\$1.00

OIL & GAS RESERVE RATES FOR TY 2012			
COUNTY	CO #	DISTRICT #	TY2012 \$/AC
HARDY	16	1	\$1.00
		2	\$10.00
		3	\$10.00
		4	\$10.00
		5	\$10.00
		6	\$1.00
HARRISON	17	1	\$35.00
		2	\$1.00
		3	\$1.00
		4	\$1.00
		5	\$35.00
		6	\$1.00
		7	\$35.00
		8	\$1.00
		9	\$35.00
		10	\$1.00
		11	\$35.00
		12	\$35.00
		13	\$1.00
		14	\$35.00
		15	\$35.00
		16	\$1.00
		17	\$1.00
		18	\$35.00
		19	\$1.00
		20	\$35.00
		21	\$1.00
JACKSON	18	1	\$20.00
		2	\$20.00
		3	\$20.00
		4	\$20.00
		5	\$20.00
		6	\$20.00
		7	\$20.00
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

OIL & GAS RESERVE RATES FOR TY 2012					
COUNTY	CO #	DISTRICT #	TY2012 \$/AC		
KANAWHA	20	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
				14	\$1.00
				15	\$20.00
				16	\$20.00
				17	\$1.00
				18	\$1.00
				19	\$20.00
				20	\$1.00
				21	\$1.00
				22	\$1.00
				23	\$20.00
				24	\$20.00
				25	\$20.00
				26	\$1.00
				27	\$1.00
				28	\$20.00
				29	\$1.00
				30	\$1.00
				31	\$1.00
LEWIS	21	1	\$20.00		
		2	\$20.00		
		3	\$20.00		
		4	\$20.00		
		5	\$1.00		
		6	\$20.00		
		7	\$1.00		
		8	\$1.00		
		9	\$1.00		
LINCOLN	22	1	\$15.00		
		2	\$15.00		
		3	\$1.00		
		4	\$15.00		
		5	\$15.00		
		6	\$15.00		
		7	\$15.00		
		8	\$15.00		
		9	\$15.00		
				10	\$1.00

OIL & GAS RESERVE RATES FOR TY 2012			
COUNTY	CO #	DISTRICT #	TY2012 \$/AC
LOGAN	23	1	\$15.00
		2	\$15.00
		3	\$15.00
		4	\$15.00
		5	\$1.00
		6	\$15.00
		7	\$15.00
		8	\$15.00
		9	\$1.00
MARION	24	1	\$25.00
		2	\$25.00
		3	\$1.00
		4	\$1.00
		5	\$1.00
		6	\$1.00
		7	\$1.00
		8	\$1.00
		9	\$25.00
		10	\$1.00
		11	\$25.00
		12	\$25.00
		13	\$1.00
		14	\$1.00
		15	\$1.00
		16	\$25.00
		17	\$1.00
		18	\$25.00
		19	\$25.00
		20	\$1.00
MARSHALL	25	1	\$1.00
		2	\$1.00
		3	\$25.00
		4	\$25.00
		5	\$25.00
		6	\$1.00
		7	\$25.00
		8	\$1.00
		9	\$25.00
		10	\$1.00
		11	\$1.00
		12	\$25.00
		13	\$25.00
		14	\$25.00
		15	\$25.00
		16	\$1.00

OIL & GAS RESERVE RATES FOR TY 2012			
COUNTY	CO #	DISTRICT #	TY2012 \$/AC
MASON	26	1	\$20.00
		2	\$20.00
		3	\$20.00
		4	\$20.00
		5	\$20.00
		6	\$20.00
		7	\$1.00
		8	\$1.00
		9	\$1.00
		10	\$20.00
		11	\$1.00
		12	\$1.00
		13	\$1.00
		14	\$20.00
		15	\$20.00
		16	\$20.00
MC DOWELL	27	1	\$20.00
		2	\$1.00
		3	\$20.00
		4	\$20.00
		5	\$1.00
		6	\$20.00
		7	\$1.00
		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



OIL & GAS RESERVE RATES FOR TY 2012			
COUNTY	CO #	DISTRICT #	TY2012 \$/AC
MINERAL	29	1	\$15.00
		2	\$15.00
		3	\$1.00
		4	\$15.00
		5	\$1.00
		6	\$15.00
		7	\$1.00
		8	\$15.00
		9	\$1.00
		10	\$1.00
		11	\$1.00
MINGO	30	1	\$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
		12	\$1.00
MONONGALIA	31	1	\$20.00
		2	\$1.00
		3	\$20.00
		4	\$20.00
		5	\$20.00
		6	\$1.00
		7	\$20.00
		8	\$20.00
		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	\$20.00
		19	\$1.00

OIL & GAS RESERVE RATES FOR TY 2012			
COUNTY	CO #	DISTRICT #	TY2012 \$/AC
MONROE	32	1	\$1.00
		2	\$1.00
		3	\$15.00
		4	\$15.00
		5	\$15.00
		6	\$1.00
		7	\$15.00
		8	\$15.00
		9	\$15.00
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	\$15.00
		2	\$15.00
		3	\$15.00
		4	\$15.00
		5	\$1.00
		6	\$1.00
		7	\$15.00
		8	\$1.00
		9	\$15.00
OHIO	35	1	\$1.00
		2	\$1.00
		3	\$20.00
		4	\$20.00
		5	\$20.00
		6	\$20.00
		7	\$1.00
		8	\$1.00
		9	\$1.00
		10	\$1.00
PENDLETON	36	1	\$1.00
		2	\$15.00
		3	\$1.00
		4	\$1.00
		5	\$1.00
		6	\$1.00
		7	\$15.00

OIL & GAS RESERVE RATES FOR TY 2012			
COUNTY	CO #	DISTRICT #	TY2012 \$/AC
PLEASANTS	37	1	\$1.00
		2	\$25.00
		3	\$25.00
		4	\$25.00
		5	\$25.00
		6	\$1.00
		7	\$25.00
		8	\$25.00
POCAHONTAS	38	1	\$1.00
		2	\$1.00
		3	\$20.00
		4	\$20.00
		5	\$1.00
		6	\$20.00
		7	\$20.00
		8	\$1.00
PRESTON	39	1	\$35.00
		2	\$35.00
		3	\$35.00
		4	\$35.00
		5	\$35.00
		6	\$35.00
		7	\$1.00
		8	\$35.00
		9	\$1.00
		10	\$35.00
		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	\$20.00
		2	\$20.00
		3	\$20.00
		4	\$20.00
		5	\$1.00
		6	\$1.00
		7	\$1.00
		8	\$20.00
		9	\$20.00
		10	\$20.00
		11	\$20.00
		12	\$20.00
		13	\$1.00

OIL & GAS RESERVE RATES FOR TY 2012			
COUNTY	CO #	DISTRICT #	TY2012 \$/AC
RALEIGH	41	1	\$15.00
		2	\$15.00
		3	\$1.00
		4	\$1.00
		5	\$15.00
		6	\$1.00
		7	\$15.00
		8	\$15.00
		9	\$15.00
		10	\$1.00
		11	\$15.00
		12	\$15.00
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	\$20.00
		10	\$20.00
		11	\$20.00
		12	\$1.00
		13	\$20.00
		14	\$1.00
		15	\$20.00
		16	\$20.00
		17	\$20.00
		18	\$1.00
RITCHIE	43	1	\$20.00
		2	\$1.00
		3	\$20.00
		4	\$1.00
		5	\$20.00
		6	\$1.00
		7	\$20.00
		8	\$1.00
		9	\$1.00
		10	\$20.00

OIL & GAS RESERVE RATES FOR TY 2012			
COUNTY	CO #	DISTRICT #	TY2012 \$/AC
ROANE	44	1	\$20.00
		2	\$20.00
		3	\$20.00
		4	\$20.00
		5	\$20.00
		6	\$20.00
		7	\$20.00
		8	\$1.00
		9	\$20.00
SUMMERS	45	1	\$1.00
		2	\$1.00
		3	\$1.00
		4	\$1.00
		5	\$15.00
		6	\$1.00
		7	\$1.00
TAYLOR	46	1	\$1.00
		2	\$1.00
		3	\$25.00
		4	\$25.00
		5	\$25.00
		6	\$25.00
		7	\$25.00
TUCKER	47	1	\$20.00
		2	\$20.00
		3	\$1.00
		4	\$1.00
		5	\$20.00
		6	\$20.00
		7	\$20.00
		8	\$1.00
		9	\$20.00
		10	\$1.00
		11	\$20.00
		12	\$1.00

OIL & GAS RESERVE RATES FOR TY 2012			
COUNTY	CO #	DISTRICT #	TY2012 \$/AC
TYLER	48	1	\$25.00
		2	\$25.00
		3	\$1.00
		4	\$25.00
		5	\$25.00
		6	\$25.00
		7	\$1.00
		8	\$1.00
		9	\$1.00
		10	\$25.00
UPSHUR	49	1	\$20.00
		2	\$20.00
		3	\$1.00
		4	\$20.00
		5	\$20.00
		6	\$20.00
		7	\$20.00
WAYNE	50	1	\$15.00
		2	\$15.00
		3	\$15.00
		4	\$1.00
		5	\$1.00
		6	\$1.00
		7	\$1.00
		8	\$15.00
		9	\$15.00
		10	\$15.00
		11	\$1.00
		12	\$15.00
WEBSTER	51	1	\$1.00
		2	\$1.00
		3	\$15.00
		4	\$15.00
		5	\$15.00
		6	\$15.00
		7	\$1.00

OIL & GAS RESERVE RATES FOR TY 2012			
COUNTY	CO #	DISTRICT #	TY2012 \$/AC
WETZEL	52	1	\$25.00
		2	\$25.00
		3	\$25.00
		4	\$25.00
		5	\$25.00
		6	\$1.00
		7	\$1.00
		8	\$25.00
		9	\$1.00
		10	\$1.00
		11	\$1.00
		12	\$25.00
		13	\$1.00
WIRT	53	1	\$25.00
		2	\$25.00
		3	\$25.00
		4	\$1.00
		5	\$25.00
		6	\$25.00
		7	\$25.00
		8	\$25.00
WOOD	54	1	\$25.00
		2	\$25.00
		3	\$25.00
		4	\$25.00
		5	\$1.00
		6	\$25.00
		7	\$25.00
		8	\$25.00
		9	\$25.00
		10	\$1.00
		11	\$25.00
		12	\$25.00
		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	\$20.00
		10	\$20.00

**MANAGED TIMBER  
PROPERTY ANALYSIS**

**Tax Year 2012**

June 30, 2011  
Craig A. Griffith  
State Tax Commissioner  
Department of Revenue



## MANAGED TIMBERLAND APPRAISAL RATES TAX YEAR 2012

(based on market 2006-2010)

### Rates Per Acre

#### Class II Parcels

	<u>Grade 1</u>	<u>Grade 2</u>	<u>Grade 3</u>
Region 1	\$230	\$150	\$50
Region 2	\$200	\$140	\$50
Region 3	\$250	\$165	\$50
Region 4	\$200	\$140	\$50
Region 5	\$200	\$140	\$50

#### Class III/IV Parcels

	<u>Grade 1</u>	<u>Grade 2</u>	<u>Grade 3</u>
Region 1	\$225	\$150	\$75
Region 2	\$225	\$150	\$75
Region 3	\$225	\$150	\$75
Region 4	\$225	\$150	\$75
Region 5	\$225	\$150	\$75

Region 1 = Brooke, Cabell, Hancock, Jackson, Marshall, Mason, Ohio, Pleasants, Putnam, Tyler, Wetzel, and Wood Counties

Region 2 = Braxton, Calhoun, Clay, Doddridge, Gilmer, Harrison, Lewis, Marion, Monongalia, Ritchie, Roane, Taylor, and Wirt Counties

Region 3 = Barbour, Greenbrier, Monroe, Nicholas, Pendleton, Pocahontas, Preston, Randolph, Tucker, Upshur, and Webster Counties

Region 4 = Berkeley, Grant, Hampshire, Hardy, Jefferson, Mineral and Morgan Counties

Region 5 = Boone, Fayette, Kanawha, Lincoln, Logan, McDowell, Mercer, Mingo, Raleigh, Summers, Wayne, and Wyoming Counties

### Harvest Volumes per Acre

Harvest Interval <u>Grades</u>	<u>35 yrs.</u>	<u>45 yrs.</u>	<u>55 yrs.</u>	<u>80 yrs.</u>	<u>Total</u>
1 - Site Index 75 or more	4.6 cords 1.5 Mbf	--	2.6 cords 4.4 Mbf	3.3 cords 8.6 Mbf	10.5 cords 14.5 Mbf
2 - Site Index 65 - 75	3.3 cords 1.0 Mbf	--	7.0 cords 3.2 Mbf	4.6 cords 5.5 Mbf	14.9 cords 9.7 Mbf
3 - Site Index less than 65	--	3.1 cords 0.8 Mbf	--	15.4 cords 3.7 Mbf	18.5 cords 4.5 Mbf

## Managed Timberland Statistics

### Estimation of Required Rate of Return: Class II Rates

**A. Safe Rate of Return (5 Year T-Bill Rate)**

Year	Rate	W/A %	W/A Rate
2010	1.9275	33.33%	0.6425
2009	2.1908	26.67%	0.5842
2008	2.7983	20.00%	0.5597
2007	4.4300	13.33%	0.5907
2006	4.7450	6.67%	0.3163

2.693 %

**B. Nonliquidity Rate**

(12 Month T-Bills vs. 3 Month T-Bills)

Year	Rate	W/A %	W/A Rate
2010	0.1817	33.33%	0.0606
2009	0.3200	26.67%	0.0853
2008	0.4308	20.00%	0.0862
2007	0.0500	13.33%	0.0067
2006	0.0845	6.67%	0.0056

0.244 %

**C. Risk Rate (30 yr T-bills vs 5 yr T-bills)**

Year	Rate	W/A %	W/A Rate
2010	2.3233	33.33%	0.7744
2009	1.8783	26.67%	0.5010
2008	1.4808	20.00%	0.2962
2007	0.4092	13.33%	0.0545
2006	0.6070	6.67%	0.0405

1.667 %

**D. Management Factor of 0.5%**

0.500 %

**E. Property Tax Component**

(60% of Class II Rate)

Year	Rate	W/A %	W/A Rate
2010	0.708	33.33%	0.2360
2009	0.702	26.67%	0.1872
2008	0.696	20.00%	0.1392
2007	0.702	13.33%	0.0936
2006	0.726	6.67%	0.0484

0.704 %

**F. Inflation Rate:**

(Bureau of Labor Statistics)

Year	Rate	W/A %	W/A Rate
2010	1.500	33.33%	0.5000
2009	2.700	26.67%	0.7201
2008	0.100	20.00%	0.0200
2007	4.100	13.33%	0.5465
2006	2.500	6.67%	0.1668

(1.953) %

TOTAL REQUIRED RATE OF RETURN (REAL)

3.855 %

LESS: PROPERTY TAX COMPONENT

(0.704)

TOTAL DISCOUNT COMPONENT

3.151 %

**Stumpage Prices:**

		<u>Sawtimber</u>	<u>Pulpwood</u>		
Stumpage Price Adjustment Factor		0.23%	1.79%		
		1.0837	1.1089	1.1347	1.2018
<u>SAWTIMBER</u>	Current	\$/MBF at age	\$/MBF at age	\$/MBF at age	\$/MBF at age
Region	\$/MBF	35	45	55	80
Region 1	210.20	227.79	233.09	238.51	252.60
Region 2	179.57	194.61	199.13	203.76	215.80
Region 3	226.22	245.16	250.86	256.69	271.87
Region 4	184.08	199.49	204.13	208.87	221.22
Region 5	150.47	163.07	166.86	170.74	180.83
		1.8607	2.2219	2.6533	4.1344
<u>PULPWOOD:</u>		\$/cd at age	\$/cd at age	\$/cd at age	\$/cd at age
Region	\$/Cord	35	45	55	80
Region 1	6.19	11.52	13.75	16.42	25.59
Region 2	5.60	10.42	12.44	14.85	23.14
Region 3	6.99	13.00	15.53	18.54	28.89
Region 4	7.45	13.86	16.55	19.77	30.80
Region 5	5.79	10.77	12.87	15.36	23.94

**Management Costs:**

Region	\$/acre (1)
1	3.17
2	3.17
3	3.17
4	3.17
5	3.17
State	

**Tax Rates:**

Effective Federal Income Tax Rate	32.50%
Effective WV State Income Tax Rate (6.5% * (1-.325))	4.39%
Effective WV Severance Tax Rate (4.0% * (1-.325))	2.70%

**Yield (Volumes) (80 year rotation)**

Timberland		Yield - MBF	Yield - Cords
Productivity Grades	Site Index		
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

## Managed Timberland Statistics

### Estimation of Required Rate of Return: Class III & IV Blended Rates

**A. Safe Rate of Return (5 Year T-Bill Rate)**

Year	Rate	W/A %	W/A Rate
2010	1.9275	33.33%	0.6425
2009	2.1908	26.67%	0.5842
2008	2.7983	20.00%	0.5597
2007	4.4300	13.33%	0.5907
2006	4.7450	6.67%	0.3163

2.693 %

**B. Nonliquidity Rate**

(12 Month T-Bills vs. 3 Month T-Bills)

Year	Rate	W/A %	W/A Rate
2010	0.1817	33.33%	0.0606
2009	0.3200	26.67%	0.0853
2008	0.4308	20.00%	0.0862
2007	0.0500	13.33%	0.0067
2006	0.0845	6.67%	0.0056

0.244 %

**C. Risk Rate (30 yr T-bills vs 5 yr T-bills)**

Year	Rate	W/A %	W/A Rate
2010	2.3233	33.33%	0.7744
2009	1.8783	26.67%	0.5010
2008	1.4808	20.00%	0.2962
2007	0.4092	13.33%	0.0545
2006	0.6070	6.67%	0.0405

1.667 %

**D. Management Factor of 0.5%**

0.500 %

**E. Property Tax Component**

(60% of Blended III&IV Rates)

Year	Rate	W/A %	W/A Rate
2010	1.314	33.33%	0.4380
2009	1.308	26.67%	0.3488
2008	1.296	20.00%	0.2592
2007	1.302	13.33%	0.1736
2006	1.326	6.67%	0.0884

1.308 %

**F. Inflation Rate:**

(Bureau of Labor Statistics)

Year	Rate	W/A %	W/A Rate
2010	1.500	33.33%	0.5000
2009	2.700	26.67%	0.7201
2008	0.100	20.00%	0.0200
2007	4.100	13.33%	0.5465
2006	2.500	6.67%	0.1668

(1.953) %

**TOTAL REQUIRED RATE OF RETURN (REAL)**

4.459 %

**LESS: PROPERTY TAX COMPONENT**

(1.308)

**TOTAL DISCOUNT COMPONENT**

3.151 %

**Stumpage Prices:**

	<u>Sawtimber</u>	<u>Pulpwood</u>
Stumpage Price Adjustment Factor	0.23%	1.79%

<u>SAWTIMBER</u>	Current \$/MBF	1.0837	1.1089	1.1347	1.2018
		\$/MBF at age 35	\$/MBF at age 45	\$/MBF at age 55	\$/MBF at age 80
Region 1	210.20	227.79	233.09	238.51	252.60
Region 2	179.57	194.61	199.13	203.76	215.80
Region 3	226.22	245.16	250.86	256.69	271.87
Region 4	184.08	199.49	204.13	208.87	221.22
Region 5	150.47	163.07	166.86	170.74	180.83

<u>PULPWOOD:</u>	Region	\$/Cord	1.8607	2.2219	2.6533	4.1344
			\$/cd at age 35	\$/cd at age 45	\$/cd at age 55	\$/cd at age 80
	Region 1	6.19	11.52	13.75	16.42	25.59
	Region 2	5.60	10.42	12.44	14.85	23.14
	Region 3	6.99	13.00	15.53	18.54	28.89
	Region 4	7.45	13.86	16.55	19.77	30.80
	Region 5	5.79	10.77	12.87	15.36	23.94

**Management Costs:**

Region	\$/acre (1)
1	3.17
2	3.17
3	3.17
4	3.17
5	3.17
State	

**Tax Rates:**

Effective Federal Income Tax Rate	32.50%
Effective WV State Income Tax Rate (6.5% * (1-.325))	4.39%
Effective WV Severance Tax Rate (4.0% * (1-.325))	2.70%

**Yield (Volumes) (80 year rotation)**

Timberland Productivity Grades	Site Index	Yield - MBF	Yield - 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

**West Virginia Wgt/Avg Managed Timberland Stumpage Prices**

**REGION 1 - Sawtimber**

Year	Volume	\$/MBF	W/A%	\$/MBF
2010	15,157.58	173.52	33.33%	57.84
2009	13,311.70	208.09	26.67%	55.49
2008	18,483.95	236.57	20.00%	47.31
2007	29,593.93	249.91	13.33%	33.32
2006	33,592.39	243.44	6.67%	16.23
	<b>110,139.55</b>			<b>210.20</b>

**REGION 1 - Pulpwood \***

Year	Volume	\$/CORD	W/A%	\$/CORD
2010	1,859.30	6.90	33.33%	2.30
2009	3,351.10	8.35	26.67%	2.23
2008	1,929.30	2.07	20.00%	0.41
2007	745.60	2.81	13.33%	0.37
2006	14,814.80	13.10	6.67%	0.87
	<b>22,700.10</b>			<b>6.19</b>

**REGION 2 - Sawtimber**

Year	Volume	\$/MBF	W/A%	\$/MBF
2010	56,575.40	163.96	33.33%	54.65
2009	43,105.11	165.92	26.67%	44.25
2008	62,741.47	187.95	20.00%	37.59
2007	118,327.50	213.26	13.33%	28.43
2006	89,863.24	219.73	6.67%	14.65
	<b>370,612.72</b>			<b>179.57</b>

**REGION 2 - Pulpwood**

Year	Volume	\$/CORD	W/A%	\$/CORD
2010	23,291.90	4.15	33.33%	1.38
2009	6,342.60	5.94	26.67%	1.58
2008	12,213.00	5.57	20.00%	1.11
2007	8,626.70	5.44	13.33%	0.73
2006	17,577.00	11.87	6.67%	0.79
	<b>68,051.20</b>			<b>5.60</b>

**REGION 3 - Sawtimber**

Year	Volume	\$/MBF	W/A%	\$/MBF
2010	145,592.20	211.21	33.33%	70.40
2009	136,208.60	187.01	26.67%	49.87
2008	223,321.70	239.45	20.00%	47.89
2007	270,925.20	288.93	13.33%	38.52
2006	225,502.90	293.05	6.67%	19.54
	<b>1,001,550.60</b>			<b>226.22</b>

**REGION 3 - Pulpwood**

Year	Volume	\$/CORD	W/A%	\$/CORD
2010	123,858.50	9.34	33.33%	3.11
2009	206,464.40	6.14	26.67%	1.64
2008	280,717.80	5.76	20.00%	1.15
2007	187,872.20	7.16	13.33%	0.95
2006	82,518.60	1.95	6.67%	0.13
	<b>881,431.50</b>			<b>6.99</b>

**REGION 4 - Sawtimber**

Year	Volume	\$/MBF	W/A%	\$/MBF
2010	24,125.85	167.02	33.33%	55.67
2009	15,403.79	168.15	26.67%	44.84
2008	31,170.06	218.70	20.00%	43.74
2007	14,777.39	182.36	13.33%	24.31
2006	9,973.61	232.63	6.67%	15.51
	<u>95,450.70</u>			<u>184.08</u>

**REGION 4 - Pulpwood**

Year	Volume	\$/CORD	W/A%	\$/CORD
2010	26,223.70	5.93	33.33%	1.98
2009	9,678.90	11.49	26.67%	3.06
2008	49,931.50	4.02	20.00%	0.80
2007	5,620.70	8.65	13.33%	1.15
2006	17,058.10	6.77	6.67%	0.45
	<u>108,512.90</u>			<u>7.45</u>

**REGION 5 - Sawtimber**

Year	Volume	\$/MBF	W/A%	\$/MBF
2010	56,603.00	143.15	33.33%	47.72
2009	49,494.92	115.82	26.67%	30.89
2008	53,526.41	167.56	20.00%	33.51
2007	81,098.00	173.12	13.33%	23.08
2006	76,052.49	229.13	6.67%	15.28
	<u>316,774.82</u>			<u>150.47</u>

**REGION 5 - Pulpwood**

Year	Volume	\$/CORD	W/A%	\$/CORD
2010	19,223.30	4.06	33.33%	1.35
2009	281,600.40	7.23	26.67%	1.93
2008	34,275.00	5.55	20.00%	1.11
2007	9,118.90	8.36	13.33%	1.11
2006	10,888.94	4.27	6.67%	0.28
	<u>355,106.54</u>			<u>5.79</u>

**COAL PROPERTIES ANALYSIS**

**Tax Year 2012**

June 30, 2011  
Craig A. Griffith  
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.

<u>Safe Rate</u>	90 day Treasury Bills	<u>Safe Rate</u>
January	December 2010	0.137%
January	December 2009	0.150%
January	December 2008	1.390%

### Risk Rate Interest differential between Loan Rate and 90 day Treasury Bills

<u>Loan Rate*</u>	<u>Debt Risk Rate</u>
2010 5.25%	5.113%
2009 5.25%	5.100%
2008 7.09%	5.700%

\*Prime plus 2%

### Equity Differential between Equity Rates and 90 day Treasury Bills

<u>Equity Rate**</u>	<u>Equity Risk Rate</u>
2010 [13.5%/(1-.30)]-0.137	19.149%
2009 [13.75%/(1-.30)]-0.15	19.493%
2008 [13.5%/(1-.30)]-1.39	17.896%

\*\* Value Line Investment Survey Analysis

### Composite Risk Rate Loan and Equity Rates weighted by industry estimated capital structure

<u>Equity Rate</u>	<u>Debt Rate</u>	<u>Composite Risk</u>
2010 11.489%	2.045%	13.534%
2009 11.696%	2.040%	13.736%
2008 10.737%	2.280%	13.017%

Note: Debt equity Ratio Debt 40% Equity 60%

### Non Liquidity Rate Interest differential between a 90 day Treasury Bill and a 1 year Treasury Bill which reflects a reasonable time necessary to sell active property.

	<u>1yr T Bill</u>	<u>90 d T Bill</u>	<u>Non Liquidity Rate</u>
January December 2010	0.318%	0.137%	0.181%
January December 2009	0.470%	0.150%	0.320%
January December 2008	1.820%	1.390%	0.430%

### Management Rate Charges for the management of investment portfolios.

Fixed Rate (by Rule) 0.500%

### Inflation Rate

January	December 2010	1.500%
January	December 2009	2.700%
January	December 2008	0.100%

### Capitalization Rate

Since the valuation of active coal property is predicated on a three year production average, the capitalization rate is considered in a similar manner.

	<u>2010</u>	<u>2009</u>	<u>2008</u>
Inflation Rate	-1.500%	-2.700%	-0.100%
Safe Rate	0.137%	0.150%	1.390%
Composite Risk Rate	13.534%	13.736%	13.017%
Non Liquidity Rate	0.181%	0.320%	0.430%
Management Rate	0.500%	0.500%	0.500%
<b>Total</b>	<b>12.852%</b>	<b>12.006%</b>	<b>15.237%</b>

Three Yr Average: 13.365 Rounded to: **13.40%**

<b>CAPITALIZATION RATE - 13.4%</b>			
<b>MULTIPLIERS:</b>			
	<b>%</b>		<b>%</b>
1YR	0.939	9YR	5.384
2YR	1.767	10YR	5.687
3YR	2.497	11YR	5.954
4YR	3.141	12YR	6.190
5YR	3.709	13YR	6.397
6YR	4.210	14YR	6.580
7YR	4.652	15YR	6.742
8YR	5.041		

**COAL**

**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. Research data for coal lease rates have been derived from recorded lease transactions provided by county assessors, tax auditors, producers, and by individual lessors/lessees involved in the specific transaction. The prices for mined coal have been calculated from data published in "COAL WEEK", from pricing information provided by producers as part of the most recent tax filing, and from data obtained from the WV Public Service Commission and U.S. Energy Information Administration concerning power plant fuel purchases. Because a large portion of the data used in this analysis is, by law, considered confidential, only a summary of the results are published.

**COAL SALE PRICES 2010 FOR TY2012 APPLICATION  
GRAND SUMMARY ALL SOURCES**

	STEAM SPOT	STEAM TERM	MET
PSC *	61.13	58.46	
Coal Week Publication	61.57	62.08	200 merged w coal outlook in 2003
FERC Data	46.84	58.53	
Active Return Summary	58.12	<--S+T	94.31 36.6 mm tons

**STATE STEAM PRICE  
STATE MET PRICE  
STATE STEAM SPOT PRICE**

60.38 Weighted according to the 72/28 from the PSC tons below  
94.31  
63.87 EIA & PSC, 3 YR AVE

PSC Tons reported in thousands, 2010.	Spot Sales	Term Sales	Total
	4821	1904	6725

**COAL TY2012 ROYALTY RATES**

	5YR		6YR		7YR		8YR		
	%S	%D	%S	%D	%S	%D	%S	%D	
TOTAL RECORDS	2448	3197	2528	2823	2530	2851	2535	2870	
SUM of PERCENT	14406.71	16405.76	14922.03	14008.00	14564.83	14753.30	15071.49	13900.72	
STRAIGHT AVERAGE	5.89	5.13	4.74	5.08	4.56	5.08	5.09	5.09	
MEDIAN	5.22	5.00	4.39	5.06	4.39	5.06	4.28	5.08	
WEIGHTED AVERAGE	6.24	5.66	5.31	5.21	5.18	5.43	5.35	5.09	
TENTATIVE RATE SURFACE	5.52								
TENTATIVE RATE DEEP	5.35								
<b>ROYALTY RATE CALCULATIONS</b>									
Steam Coal/ Deep Mine	\$63.87	per ton X	5.35%	=	\$3.42	per ton			
Metallurgical Coal/ Deep Mine	\$94.31	per ton X	5.35%	=	\$5.05	per ton			
Steam Coal/ Surface Mine	\$63.87	per ton X	5.52%	=	\$3.53	per ton			
Metallurgical Coal/ Surface Mine	\$94.31	per ton X	5.52%	=	\$5.21	per ton			

### **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 November 15 of each year. Please refer to the State Register, Legislative Rules, Title 110, Series 11 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 to allow biannual revisiting of the geostatistical basis for several valuation factors used in the Reserve Coal Valuation Model. Preliminary research has been conducted and 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 >= 12 Then TransFactor = 20

If Trans\_Ct < 12 And Trans\_Ct >= 4 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 = 5 miles

Surface Mines: Smine

Deep Mines: Dmine

Boom Mines: Bmine

Historic Mines: Omine

Current Mines: Cmine

To assign MineFactor:

If Cmine > 0 Then MineFactor = 20

If Cmine = 0 And (Omine > 0 Or Bmine > 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 < 7 Then WellFactor = 0

WellDensity >= 7 And WellDensity < 19 Then WellFactor = 20

WellDensity >= 19 And WellDensity < 29 Then WellFactor = 40

WellDensity > 29 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 = <=30 and Null Then EnvFactor = 0

Envrate >30 and Envrate <= 60 Then EnvFactor = 20

Envrate > 60 and Envrate < 100 Then EnvFactor = 40

Envrate >= 100 Then EnvFactor = 80

**OTHER MINED MINERAL  
PROPERTY ANALYSIS**

**Tax Year 2012**

June 30, 2011  
Craig A. Griffith  
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.

<u>Safe Rate</u> 90 day Treasury Bills			<u>Safe Rate</u>
January	December	2010	0.137%
January	December	2009	0.150%
January	December	2008	1.390%

<u>Risk Rate</u> Interest differential between Loan Rate and 90 day Treasury Bills			
<u>Loan Rate*</u>		<u>Debt Risk Rate</u>	
2010	5.25%	5.113%	
2009	5.25%	5.100%	
2008	7.09%	5.700%	

\*Prime plus 2%

<u>Equity</u> Differential between Equity Rates and 90 day Treasury Bills			
<u>Equity Rate**</u>		<u>Equity Risk Rate</u>	
2010	[12.5%/(1-.30)]-0.137	17.720%	
2009	[13.0%/(1-.32)]-0.15	18.968%	
2008	[13.25%/(1-.32)]-1.39	18.095%	

\*\* Value Line Investment Survey Analysis

<u>Composite Risk Rate</u> Loan and Equity Rates weighted by industry estimated capital structure.			
	<u>Equity Rate</u>	<u>Debt Rate</u>	<u>Composite Risk</u>
2010	10.632%	2.045%	12.677%
2009	12.329%	1.785%	14.114%
2008	11.762%	1.995%	13.757%

Note: Debt Equity Ratio Debt 40% Equity 60%

<u>Non Liquidity Rate</u> Interest differential between 90 day Treasury Bills and a 1 year Treasury Bill which reflects a reasonable time necessary to sell active property.					
			<u>1yr T Bill</u>	<u>90 d T Bill</u>	<u>Non Liquidity Rate</u>
January	December	2010	0.318%	0.137%	0.181%
January	December	2009	0.470%	0.150%	0.320%
January	December	2008	1.820%	1.390%	0.430%

<u>Management Rate</u> Charges for the management of investment portfolios.		
<u>Fixed Rate (by Rule)</u>		<u>0.500%</u>

<u>Inflation Rate</u>			
January	December	2010	1.500%
January	December	2009	2.700%
January	December	2008	0.100%

<u>Property Tax Rate</u> Sixty percent (60%) of State average Class III property tax rate.					
January	December	2010	60% of 2.190 =	1.314%	
January	December	2009	60% of 2.180 =	1.308%	
January	December	2008	60% of 2.160 =	1.296%	

<u>Capitalization Rate</u> Since the valuation of other mined mineral property is predicated on a three year production average, the capitalization rate is considered in a similar manner.					
	<u>2010</u>	<u>2009</u>	<u>2008</u>		
Inflation Rate	-1.500%	-2.700%	-0.100%		
Safe Rate	0.137%	0.150%	1.390%		
Composite Risk Rate	12.677%	14.114%	13.757%		
Non Liquidity Rate	0.181%	0.320%	0.430%		
Management Rate	0.500%	0.500%	0.500%		
Property Tax Rate	1.314%	1.308%	1.296%		
<u>Total</u>	13.309%	13.692%	17.273%		

Three Yr Average: 14.758% Rounded to: **14.80%**

### CAPITALIZATION RATE - 14.80%

MULTIPLIERS:					
	%		%		
1YR	0.933		9YR	5.149	
2YR	1.746		10YR	5.419	
3YR	2.454		11YR	5.853	
4YR	3.071		12YR	5.858	
5YR	3.609		13YR	6.036	
6YR	4.077		14YR	6.191	
7YR	4.485		15YR	6.326	
8YR	4.840				

## 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 review data for the most recent thirty year period. A summary of this review is shown below in order to protect the confidentiality of parties involved.

RESOURCE	DATA SOURCES	AVERAGE ROYALTY	MEDIAN ROYALTY	TY2012 RATE
LIMESTONE	15	\$0.22	\$0.20	<b>\$0.22</b>
SANDSTONE	8	\$0.31	\$0.25	<b>\$0.30</b>
CLAY/SHALE	34	\$0.12	\$0.10	<b>\$0.11</b>
SAND/GRAVEL	10	\$0.35	\$0.40	<b>\$0.40</b>
SALT BRINE	1	N/A	N/A	<b>\$0.10</b>

### 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