

## **Cross Timbers Royalty Trust (CRT – 11.13)** **New Oil Production to Enhance Payout**

### **Summary and Conclusion**

An expected 30% boost in distribution for 2000 does not seem to be reflected yet in stock price for Cross Timbers Royalty Trust. Not only do unitholders benefit from natural gas price increases, but also from the resumption of distributions from oil production. Recovery of advances for oil development spending should be completed by mid year and free up oil cash flow for distribution to unitholders instead. With distribution coming back we see the potential for the stock to trade above \$15 per unit as it has at times in the past. Financial and operating risk is low because the trust is not responsible for operating costs on most of its properties and it has no debt. Size risk is high with only 6 million units outstanding, some of which are held by the sponsoring company and may be for sale.

### **Present Value Discounts Future Cash Flows**

Our calculations give a present value of the trust's reserves of \$17 a unit of which oil accounts for \$2 (see file Crt0128.xls, tabs Asset Value and Asset Value Oil). The trust's representation in oil is primarily in the form of a net profits interest in properties in West Texas and Oklahoma operated by well-known companies. We will explain our overall analysis of which oil is a subcomponent.

### Volume Projections Anticipate Decline and Enhancement

Natural gas production from existing producing wells is projected to decline at 9% per year for 30 years cumulating to 10 times 1999 production (see Table CRT-1). Those numbers ought to be conservative, as production in the San Juan Basin, the home of most of the trust's production, has traditionally declined at some 7% per year. Moreover production could likely continue beyond 30 years.

Meanwhile the operators of San Juan gas production have almost continually been reinvesting in new wells, recompletions in old wells, fracturing and other steps to develop new production. As an overriding royalty owner, the trust often does not get information as to operator's plans for new spending. We project a 7% per year enhancement to production stemming the decline to a net 2%. That could be conservative also as the largest operator in the Basin, **Burlington Resources**, has seen generally rising production for the past decade and plans continued investment in new capacity.

Enhancement adds 30 bcf of production in 30 years to the 33 bcf from existing capacity. The total of 63 bcf is 19.5 times 1999 production, not a conservative number in the context of proven reserves. Yet in light of the history of the basin and in view of specific sources of untapped potential the projection seems reasonable in economic value.

The decline and enhancement rates for Cross Timbers Royalty Trust are set equal to those for San Juan Basin Royalty, a similar entity featured in a separate analysis. We have more information on monthly volume, price and costs for the latter because that trust has responsibility for costs while Cross Timbers Royalty Trust does not. Both trusts have properties spread throughout the San Juan Basin. As a result it seems reasonable to expect similar performance, but there could still be differences, particularly in any given year.

#### Price Projection Matches Inflation

After 2000, natural gas price escalates at 3% per year, only slightly more than the 2.1% per year implied by the difference in yield for U.S. Treasury bonds and U.S. Treasury Inflation Protected Securities. Considering that demand for natural gas as a clean fuel is strong and that producers of the commodity have not earned an economic return on new investment for the past ten years, a case could be made that natural gas price should readjust upward. Yet the trend of commodity price has been weak in the high productivity, technologically super-charged economy of recent years.

#### Natural Gas Production Cost Free

Normally at this stage in the present value calculation we might be discussing operating and investment costs. Those outlays are still important even though the trust is not responsible for them for most of its gas production. Moreover, if a property becomes uneconomic the operator will not continue production or may even ask overriding royalty owners for a new deal.

Instead we include here a single column summary of cash flows from oil production where costs are a responsibility of the trust. The details of the oil contribution are discussed later.

#### Tax Credits Available Through 2002

There are three years remaining of Non Conventional Fuel Source (NFS) tax credits worth some \$0.50 per unit in future value. For wells drilled before year-end 1992, producers can claim a tax credit for production of coal bed methane. The San Juan Basin proved to be a prolific source of fuel and tax credits. While stimulating drilling initially, the credits are now having the perverse effect of postponing drilling. Producers do not want to risk diverting coal seam gas from wells that generate tax credits. After 2002 when no more tax credits will be generated, there may be stepped up infill drilling to the coal seam. That drilling will add some to total recovery and also speed up recovery already anticipated.

### Discount at 8% Per Year

Finally we multiply annual cash flows by the discount factor and add them up to derive present value. The discount factor is the discount rate applied for the appropriate time period. For the year 2000, the discount rate of 8% is applied for a half year, assuming that all the cash flow is received at midyear. For the year 2001, the rate is applied for a year and a half and so on. The rate represents a premium to the “risk-free” government rate, but is not as high as would be paid by low-grade borrowers.

### Oil More Price Sensitive

We take some liberty with the breakdown of the trust's property by assuming all oil production bears costs while all gas production does not. Actually some gas production is associated with predominantly oil properties and some oil production is associated with predominantly gas properties. Whatever the precise breakdown, oil production is high cost, both in operations and development. During 1999 the trust was hit both by low oil price and high development costs. As a result, oil properties contributed little to cash distributions. Now in 2000 oil price is higher and a bulge of development spending has passed. We project smoothly positive future cash flows, but there remains a lot of operating leverage and distributions could be interrupted again sometime (see tab Asset Value Oil).

### **Distributable Income Model Projects Quarterly Gains**

While a 30% gain in distribution for 2000 seems especially strong, recent months have already been at a high rate. True, the futures market projects a decline in the higher commodity price recently achieved. Yet the effect of price decline is likely to be offset by the resumption of higher distributions from oil production. That is reflected by the absence of excess cost and recovery of excess cost as 2000 proceeds (see tab Quarterly Distributions, lines 41 and 42). The distributable income model is updated weekly for oil and gas futures prices, monthly for distributions, quarterly for interim disclosure and annually for more complete disclosure. If distributions materialize along the lines of the projections the case should be strong for appreciation in stock price.

By definition our price projection is that of the consensus, the futures market. The differential between Henry Hub, the pricing point for futures, and what the trust receives is our estimate.

Our natural gas volume projection for 2000 incorporates a decline of 1% per quarter from 10 mmcf for the fourth quarter 1999, not yet disclosed. Our oil volume projection is similar. Yet we hope to be surprised with higher volume as newly injected carbon dioxide stimulates more production.

We would also like to think that there is room for operating and development cost to decline from the indications of the third quarter 1999. Because actual experience after the new investment program is limited, we do not project any decline in cost parameters.

We may not know fourth quarter details until the trust files its 10-K annual report with the Securities and Exchange Commission. Last year the filing was on March 31. Meanwhile the next disclosures are the February and March distributions to be released around the 20th of the respective months.

Kurt H. Wulff  
January 29, 2000  
781-237-3401

**Table CRT-1  
Cross Timbers Royalty Trust  
Present Value**

Volume Decline (%/yr):	9	Price Escalation (%/yr):	3								
Volume Enhancement (%/yr):	7	Discount rate (%/yr):	8								
	Natural Gas Volume				Oil				Tax		Present
Year	Basic (bcf)	Enhanced (bcf)	Total (bcf)	Price (\$/mcf)	Revenue (\$mm)	Net (\$mm)	Distribution (\$mm)	(\$/unit)	Credit (\$/unit)	Disc Factor	Value (\$/unit)
Total 2000 through 2029											
	33	30	63	3.26	206	19	224	37.38	0.51	0.45	17.00
1999	3.2		3.2	1.97	6.3	0.2	6.6	1.09	0.17		
2000	2.9	0.3	3.2	2.29	7.4	1.1	8.5	1.41	0.17	0.96	1.52
2001	2.7	0.5	3.1	2.36	7.4	1.7	9.1	1.51	0.17	0.89	1.50
2002	2.5	0.6	3.1	2.43	7.5	1.6	9.1	1.52	0.17	0.82	1.39
2003	2.3	0.8	3.1	2.51	7.7	1.5	9.2	1.53		0.76	1.17
2004	2.1	0.9	3.0	2.58	7.8	1.4	9.2	1.53		0.71	1.08
2005	1.9	1.1	3.0	2.66	7.9	1.3	9.2	1.54		0.65	1.01
2006	1.7	1.2	2.9	2.74	8.0	1.3	9.3	1.54		0.61	0.94
2007	1.6	1.3	2.9	2.82	8.1	1.2	9.3	1.55		0.56	0.87
2008	1.5	1.4	2.8	2.91	8.2	1.1	9.3	1.55		0.52	0.81
2009	1.3	1.4	2.8	2.99	8.3	1.0	9.4	1.56		0.48	0.75
2010	1.2	1.5	2.7	3.08	8.4	1.0	9.4	1.57		0.45	0.70
2011	1.1	1.6	2.7	3.18	8.5	0.9	9.4	1.57		0.41	0.65
2012	1.0	1.6	2.6	3.27	8.7	0.8	9.5	1.58		0.38	0.60
2013	1.0	1.6	2.6	3.37	8.8	0.7	9.5	1.58		0.35	0.56
2014	0.9	1.7	2.6	3.47	8.9	0.7	9.5	1.59		0.33	0.52
2015	0.8	1.5	2.3	3.57	8.3	0.7	9.0	1.50		0.30	0.46
2016	0.7	1.4	2.1	3.68	7.8	0.5	8.3	1.38		0.28	0.39
2017	0.7	1.3	1.9	3.79	7.4	0.3	7.6	1.27		0.26	0.33
2018	0.6	1.2	1.8	3.91	6.9	0.1	7.0	1.17		0.24	0.28
2019	0.6	1.0	1.6	4.02	6.5	-0.1	6.5	1.08		0.22	0.24
2020	0.5	1.0	1.5	4.14	6.1		6.1	1.02		0.21	0.21
2021	0.5	0.9	1.3	4.27	5.7		5.7	0.96		0.19	0.18
2022	0.4	0.8	1.2	4.40	5.4		5.4	0.90		0.18	0.16
2023	0.4	0.7	1.1	4.53	5.1		5.1	0.85		0.16	0.14
2024	0.4	0.7	1.0	4.66	4.8		4.8	0.80		0.15	0.12
2025	0.3	0.6	0.9	4.80	4.5		4.5	0.75		0.14	0.11
2026	0.3	0.5	0.9	4.95	4.2		4.2	0.70		0.13	0.09
2027	0.3	0.5	0.8	5.10	4.0		4.0	0.66		0.12	0.08
2028	0.3	0.4	0.7	5.25	3.7		3.7	0.62		0.11	0.07
2029	0.2	0.4	0.6	5.41	3.5		3.5	0.58		0.10	0.06

**Table CRT-1A**  
**Cross Timbers Royalty Trust**  
**Oil Present Value**

Volume Decline (%/yr):	12	Price Escalation (%/yr):	2
Volume Enhancement (%/yr):	6	Variable Cost (%):	38
Capex/Cash Flow (%):	25	Discount rate (%/yr):	8

  

Year	Volume		Total (mb)	Price (\$/bbl)	Revenue (\$mm)	Fixed Cost (\$mm)	Var Cost (\$mm)	Cap Ex (\$mm)	Distribution (\$/unit)	Tax Credit (\$/unit)	Disc Factor	Present Value (\$/unit)	
	Basic (mb)	Enhanced (mb)											
Total 2000 through 2019													
	2058	1202	3259	0.03	89	30	34	6	19	3.13	0.00	0.61	1.90
1999	253		253	15.74	4.0	1.5	1.5	0.7	0.2	0.04			
2000	222	17.8	240	23.32	5.6	1.5	2.1	0.8	1.1	0.19	0.96	0.18	
2001	222	30.1	253	23.78	6.0	1.5	2.3	0.6	1.7	0.28	0.89	0.25	
2002	199	41.6	240	24.26	5.8	1.5	2.2	0.5	1.6	0.26	0.82	0.22	
2003	177	51.1	228	24.74	5.7	1.5	2.1	0.5	1.5	0.25	0.76	0.19	
2004	158	58.6	217	25.24	5.5	1.5	2.1	0.5	1.4	0.24	0.71	0.17	
2005	141	64.6	206	25.74	5.3	1.5	2.0	0.4	1.3	0.22	0.65	0.15	
2006	126	69.2	195	26.26	5.1	1.5	2.0	0.4	1.3	0.21	0.61	0.13	
2007	113	72.6	185	26.78	5.0	1.5	1.9	0.4	1.2	0.20	0.56	0.11	
2008	101	75.0	176	27.32	4.8	1.5	1.8	0.4	1.1	0.18	0.52	0.10	
2009	90	76.6	166	27.86	4.6	1.5	1.8	0.3	1.0	0.17	0.48	0.08	
2010	80	77.4	158	28.42	4.5	1.5	1.7	0.3	1.0	0.16	0.45	0.07	
2011	72	77.5	149	28.99	4.3	1.5	1.6	0.3	0.9	0.15	0.41	0.06	
2012	64	77.2	141	29.57	4.2	1.5	1.6	0.3	0.8	0.14	0.38	0.05	
2013	57	76.4	133	30.16	4.0	1.5	1.5	0.2	0.7	0.12	0.35	0.04	
2014	51	75.2	126	30.76	3.9	1.5	1.5	0.2	0.7	0.11	0.33	0.04	
2015	46	66.2	112	31.38	3.5	1.5	1.3		0.7	0.11	0.30	0.03	
2016	41	58.3	99	32.01	3.2	1.5	1.2		0.5	0.08	0.28	0.02	
2017	36	51.3	88	32.65	2.9	1.5	1.1		0.3	0.05	0.26	0.01	
2018	32	45.1	78	33.30	2.6	1.5	1.0		0.1	0.02	0.24	0.00	
2019	29	39.7	69	33.97	2.3	1.5	0.9		-0.1	-0.01	0.22	0.00	

**Table CRT-2**  
**Cross Timbers Royalty Trust**  
**Distributable Income Model**

	<i>Year</i> <i>1998</i>	<i>Q1</i> <i>3/31/99</i>	<i>Q2</i> <i>6/30/99</i>	<i>Q3</i> <i>9/30/99</i>	<i>Q4E</i> <i>12/31/99</i>	<i>Year</i> <i>1999E</i>	<i>Q1E</i> <i>3/31/00</i>	<i>Q2E</i> <i>6/30/00</i>	<i>Q3E</i> <i>9/30/00</i>	<i>Q4E</i> <i>12/31/00</i>	<i>Year</i> <i>2000E</i>
<b>Highlights</b>											
Tax credit (\$mm)											
Per unit	0.20	0.04	0.04	0.04	0.04	0.17	0.04	0.04	0.04	0.04	0.17
Distributable Income (\$mm)	6.93	1.44	1.17	1.66	2.28	6.55	2.03	2.16	2.17	2.13	8.48
Per unit	1.15	0.24	0.20	0.28	0.38	1.09	0.34	0.36	0.36	0.36	1.41
Units (millions)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
<b>Volume</b>											
Natural Gas (bcf)	3.50	0.92	0.82	0.94	0.92	3.59	0.91	0.88	0.88	0.88	3.56
Natural Gas (mmcf)	9.6	10.0	9.1	10.3	10.0	9.8	9.9	9.8	9.7	9.6	9.8
Days	365	92	90	91	92	365	92	90	91	92	365
Oil (mb)	392	88	87	79	83	337	82	79	79	80	320
Oil (mbd)	1.08	0.96	0.98	0.86	0.90	0.92	0.9	0.9	0.9	0.9	0.88
Days	365	92	89	92	92	365	92	90	91	92	365
Total (bcf)	5.86	1.45	1.34	1.41	1.42	5.61	1.40	1.36	1.36	1.36	5.48
<b>Price</b>											
Natural Gas											
Henry Hub (\$/mmbtu)		1.87	1.89	2.27	2.66	2.17	2.36	2.57	2.51	2.54	2.50
CRT (\$/mcf)	2.03	1.73	1.79	2.02	2.30	1.97	2.16	2.37	2.31	2.34	2.29
Oil (\$/bbl)											
WTI Cushing		12.25	14.67	18.57	22.59	17.02	26.06	26.92	24.92	23.33	25.31
CRT	13.40	10.44	12.28	20.34	20.59	15.74	24.06	24.92	22.92	21.33	23.32
Total (\$/mcf)	2.11	1.73	1.89	2.48	2.70	2.20	2.81	3.00	2.84	2.77	2.85
<b>Revenue (\$mm)</b>											
Natural Gas	7.11	1.59	1.46	1.89	2.12	7.06	1.97	2.09	2.04	2.07	8.17
Oil	5.26	0.92	1.07	1.61	1.70	5.31	1.97	1.98	1.82	1.70	7.47
Total	12.37	2.51	2.53	3.50	3.82	12.36	3.94	4.07	3.86	3.77	15.64
<b>Cost (\$mm)</b>											
Tax, transport & other	1.19	0.23	0.40	0.48	0.51	1.62	0.59	0.59	0.55	0.51	2.24
Production	2.58	0.57	0.63	0.60	0.62	2.42	0.61	0.60	0.60	0.60	2.40
Total	3.78	0.80	1.02	1.08	1.13	4.04	1.21	1.19	1.14	1.11	4.64
<b>Cash flow (\$mm)</b>											
Development	1.14	0.36	0.08	0.18	0.18	0.80	0.18	0.18	0.18	0.18	0.72
Excess	(0.52)	(0.30)	(0.06)	(0.07)		(0.43)					-
Recovery of excess	0.02	0.01	0.14	0.10	0.39	0.63	0.19	0.19			0.38
<b>Net proceeds (\$mm)</b>	7.94	1.64	1.35	2.22	2.12	7.33	2.36	2.51	2.53	2.48	9.89
<b>Royalty income (\$mm)</b>											
Royalty/Net proceeds	7.08	1.48	1.21	1.70	2.32	6.71	2.07	2.20	2.21	2.17	8.64
Administration	0.15	0.04	0.04	0.04	0.04	0.16	0.04	0.04	0.04	0.04	0.16
<b>Distributable income (\$mm)</b>	6.93	1.44	1.17	1.66	2.28	6.55	2.03	2.16	2.17	2.13	8.48
<i>Modeling ratios</i>											
Tax and other/oil revenue	0.23	0.25	0.37	0.30	0.30	0.31	0.30	0.30	0.30	0.30	0.30
Production exp (\$/bbl)	6.58	6.48	7.20	7.56	7.50	7.17	7.50	7.50	7.50	7.50	7.50
<i>Accounting items</i>											
Interest on excess costs	0.01	0.02	0.02	0.01	0.01	0.06					
Cumulative excess costs	0.51	0.83	0.77	0.76	0.38	0.38					