



How Oklahoma Returns “Unconventional” Oil Revenue to Local Governments

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Introduction

This brief shows how Oklahoma’s local governments receive production tax revenue from unconventional oil extraction. Fiscal policy is important for local communities for several reasons. Mitigating the acute impacts associated with drilling activity and related population growth requires that revenue is available in the amount, time, and location necessary to build and maintain infrastructure and to provide services. In addition, managing volatility over time requires different fiscal strategies, including setting aside a portion of oil revenue in permanent funds.¹

The focus on unconventional oil is important because horizontal drilling and hydraulic fracturing technologies have led a resurgence in oil production in the U.S. Unconventional oil plays require more wells to be drilled on a continuous basis to maintain production than comparable conventional oil fields. This expands potential employment, income, and tax benefits, but also heightens and extends public costs.

This brief is part of a larger project by Headwaters Economics that includes detailed fiscal profiles of major oil-producing states—Colorado, Montana, New Mexico, North Dakota, Oklahoma, Texas, and Wyoming—along with a summary report describing differences between these states. These profiles will be updated regularly. The various approaches to taxing oil make comparisons between states difficult, although not impossible. We apply each state’s fiscal policy, including production taxes and revenue distributions, to a typical unconventional oil well. This allows for a comparison of how states tax oil extracted using unconventional technologies, and how this revenue is distributed to communities. Detailed state profiles and the larger report are available at <http://headwaterseconomics.org/energy/state-energy-policies>.

Oklahoma Summary

- Oklahoma currently has a low effective tax rate compared to peer states. Oklahoma’s effective tax rate on unconventional oil production is 3.3 percent, the lowest of seven peer oil-producing states (Figure 1).
- Oklahoma’s low effective tax rate results from a four-year production tax incentive that reduces the tax rate for newly completed horizontal wells from seven to one percent. Oklahoma is one of only two oil-producing states reviewed in this study with an active holiday incentive for oil (the others are Montana and North Dakota, but North Dakota’s is only active when the price of oil falls below a price threshold currently set at \$52.20 per barrel.)
- Local governments receive the proceeds from one percent of the seven percent tax on gross production. The one percent tax is unaffected by the “holiday” incentive, so monthly tax collections and distributions do a relatively good job of delivering revenue in a timely manner to local governments.
- That said, the amount returned to local governments equal to one percent of gross production is second lowest among the seven states in this study. Revenue is also

distributed only to jurisdictions that host production, leaving out adjacent cities and counties that experience impacts (Figure 2).

Figure 1: Comparison of Production Tax Revenue Collected from a Typical Unconventional Oil Well

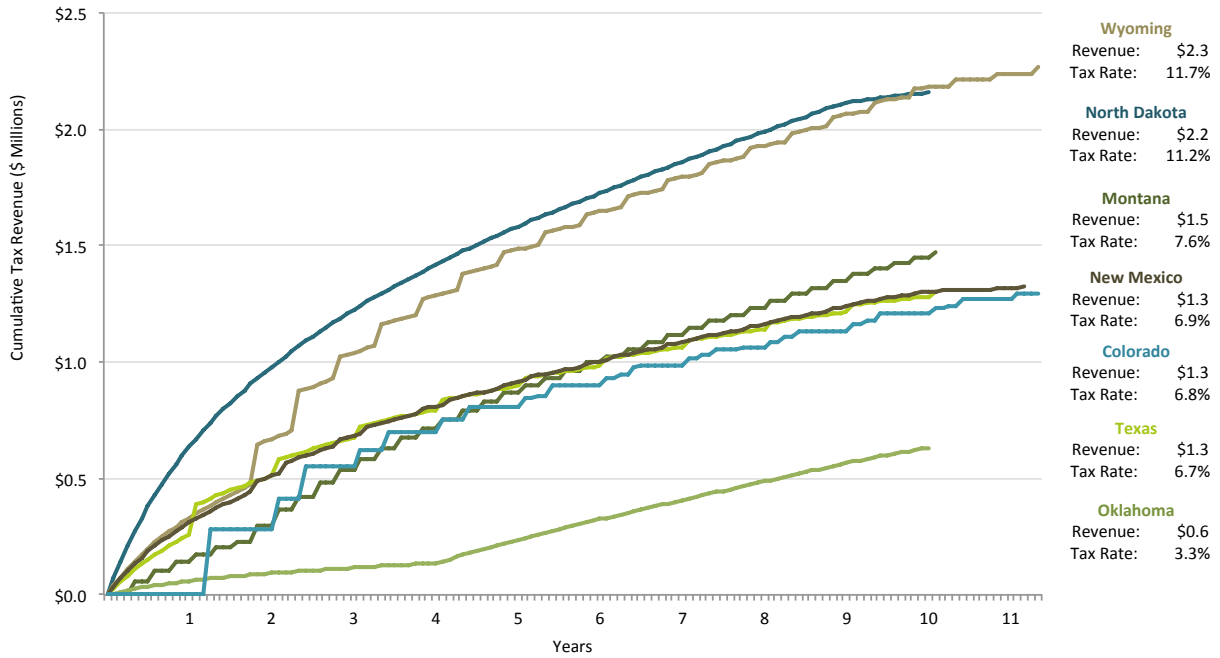
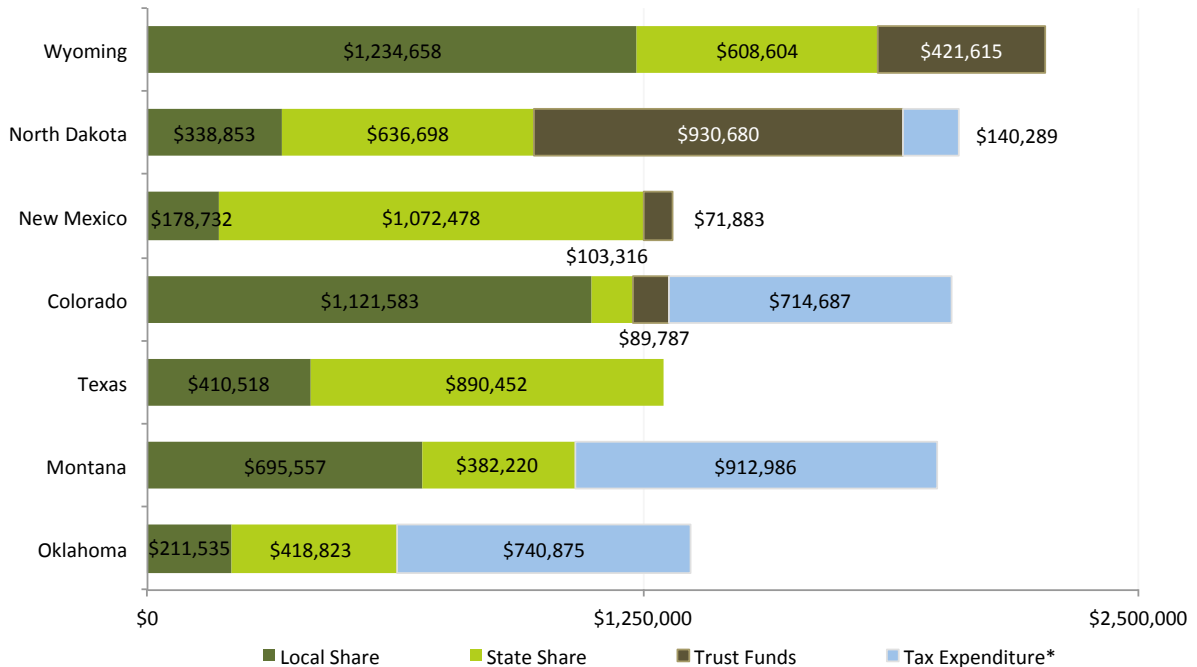


Figure 2: Comparison of Distribution of Production Tax Revenue from a Typical Unconventional Oil Well



*Tax Expenditure refers to the value of production tax incentives and tax relief funded with production tax revenue.

Unconventional Oil Well Performance

Unconventional oil is produced using horizontal drilling and hydraulic fracturing technologies. While no two wells are identical, unconventional wells all share a typical production profile, characterized by relatively high rates of initial production followed by steep production declines.² This makes it possible to construct a typical well profile—in this case using data from Montana’s Elm Coulee field in the Bakken formation. We use this well profile to determine how a state’s taxation and distribution policies combine to deliver revenue to local governments over ten years in terms of amount, timing, location, and predictability.³

There were 789 horizontal oil wells drilled in the Elm Coulee between 2000 and 2012.⁴ Average oil production peaked at 246 barrels per day in the first month, declining to 122 barrels per day after one year—a 51 percent decline in the first year. Cumulatively, the average Elm Coulee well produces 227,374 barrels of oil over ten years (Figure 3). At a fixed price of \$85 per barrel, the typical well generates \$19.3 million in cumulative production value over ten years (Figure 4).

Figure 3: Production Profile from a Typical Unconventional Oil Well

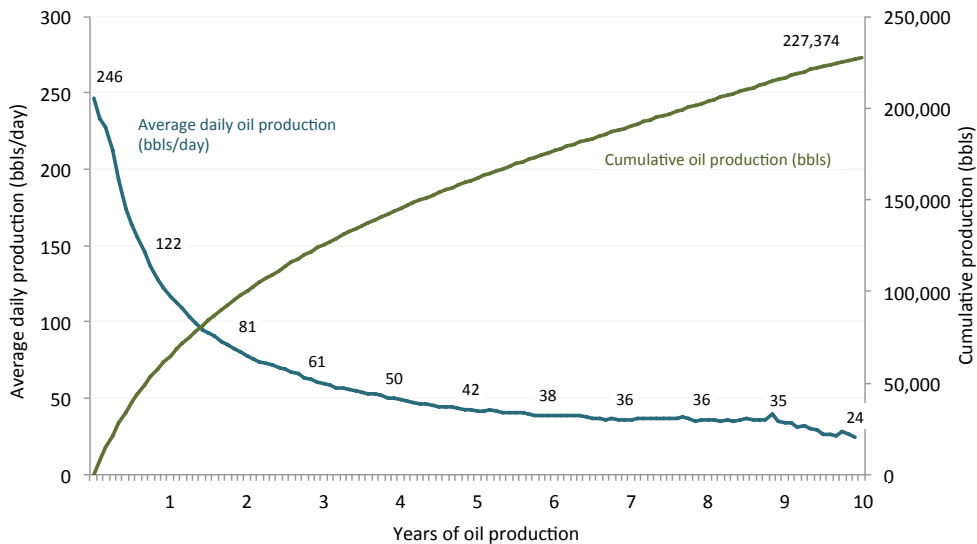
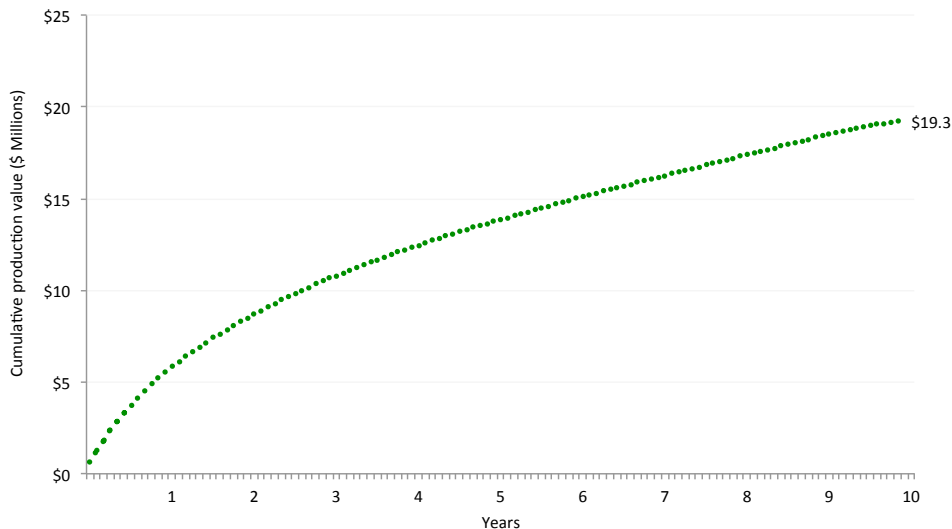


Figure 4: Cumulative Production Value from a Typical Unconventional Oil Well



Profile of Oklahoma Production Taxes

Oklahoma levies a single gross production tax at the state level of seven percent when the statewide average price equals or exceeds \$17 per barrel (the tax rate falls to 4% under \$17/barrel and to 1% under \$14/barrel).⁵ There are no reduced rates for stripper wells, but Oklahoma offers a host of incentives for different kinds of production, including a significant incentive for new horizontally completed wells that lowers the tax rate to one percent on the first four years of production or until cost recovery (sometimes called a tax “holiday” incentive).

Oklahoma’s tax incentive is the most generous industry incentive of the seven states included in this study because of the way “holiday” incentives apply specifically to unconventional wells. The steep production profiles characteristic of unconventional wells mean holiday incentives apply when wells are producing at their highest rates. If the well profile were flatter—meaning if production declined more slowly with a larger share of cumulative production coming after the first several years—tax holiday incentives would be relatively less valuable.

Oklahoma also levies a petroleum excise tax of 0.095 percent that funds oil and gas regulation.⁶

Below we offer a detailed look at how the two taxes apply to unconventional oil production using the typical well profile in the previous section. The results are displayed in Figure 5 and Table 1.

Gross Production Tax

Base Rate: Oklahoma levies a single gross production tax at the state level of seven percent when the statewide average price equals or exceeds \$17 per barrel (the tax rate falls to 4% under \$17/barrel and to 1% under \$14/barrel).⁷

Stripper Wells: No exemptions for stripper wells are offered.

Production Incentives: Oklahoma offers a host of incentives for different kinds of production, including a significant incentive for new horizontally completed wells that lowers the tax rate to one percent on the first four years of production or until cost recovery.⁸

Timing of Collections: Monthly.

Petroleum Excise Tax

Base Rate: Oklahoma also levies a petroleum excise tax of 0.095 percent that funds oil and gas regulation.⁹

Stripper Wells: No exemptions for stripper wells are offered.

Production Incentives: No production incentives are available for the excise tax.

Timing of Collections: Monthly.

Figure 5: Oklahoma Tax Policy Applied to a Typical Unconventional Oil Well

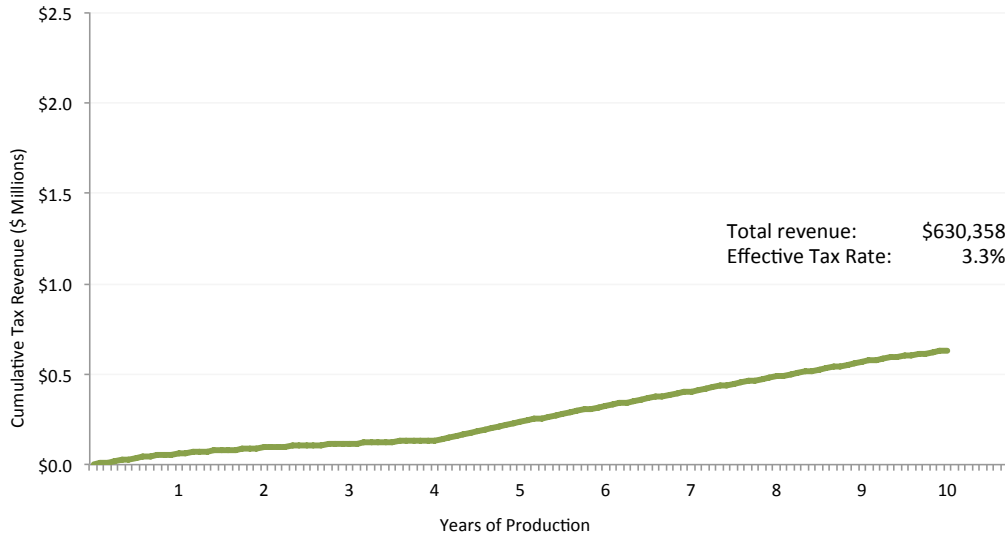


Table 1: Oklahoma Tax Policy Applied to a Typical Unconventional Oil Well

Production Year	Gross Production Tax Rate	Excise Tax Rate	Gross Production Value of Oil Production	Revenue from Gross Production Tax	Revenue from Excise Tax	Total Tax Revenue	Effective Tax Rate
1	1%	0.1%	\$5,530,321	\$55,303	\$5,254	\$60,557	1.1%
2	1%	0.1%	\$2,984,622	\$29,846	\$2,835	\$32,682	1.1%
3	1%	0.1%	\$2,146,014	\$21,460	\$2,039	\$23,499	1.1%
4	1%	0.1%	\$1,686,964	\$16,870	\$1,603	\$18,472	1.1%
5	7%	0.1%	\$1,412,756	\$98,893	\$1,342	\$100,235	7.1%
6	7%	0.1%	\$1,250,365	\$87,526	\$1,188	\$88,713	7.1%
7	7%	0.1%	\$1,160,428	\$81,230	\$1,102	\$82,332	7.1%
8	7%	0.1%	\$1,136,597	\$79,562	\$1,080	\$80,642	7.1%
9	7%	0.1%	\$1,121,166	\$78,482	\$1,065	\$79,547	7.1%
10	7%	0.1%	\$897,516	\$62,826	\$853	\$63,679	7.1%
11							
12							
Cumulative			\$19,326,749	\$611,997	\$18,360	\$630,358	3.3%

Profile of Oklahoma Production Tax Distribution Policies

Distribution of the oil gross production tax revenue is based on fixed allocations that do not change as revenues increase, so understanding how revenue is allocated to local governments in Oklahoma is relatively straightforward. However, the allocation of oil revenue is different depending on the tax rate imposed.

For oil at the full seven percent tax rate, the distributions are split between several state and local government purposes.¹⁰ Local governments effectively receive revenue equal to a one percent tax on gross production. This allocation does not change when the four-year “holiday” incentive is in place. In other words, all revenue from oil wells paying the one percent “holiday” tax rate is distributed to local governments, and allocated equally between counties where oil is produced for roads, and local school districts statewide.

Below we describe how distributions are made between the state share, tribal share, local share, permanent savings, and tax expenditures. The results are displayed in Figure 6 and Table 2.

Allocations

State Share: For oil at the full seven percent tax rate, the distributions are split between several state purposes:¹¹

- 25.72 percent to each of the Common Education Technology Fund, the Higher Education Capital Fund, and the Oklahoma Tuition Scholarship Fund;
- 4.28 percent to three state infrastructure funds, the Oklahoma Tourism and Recreation Capital Expenditure Revolving Fund, the Oklahoma Conservation Commission Infrastructure Revolving Fund, and the Community Water Infrastructure Development Revolving Fund—at one-third each through FY 2015;
- 0.535 percent to the Statewide Circuit Engineering District Revolving Fund.

The state does not receive any revenue from wells paying the one percent incentive rate.

Local Share: For oil at the full seven percent tax rate, about one percent is distributed to local governments as follows:¹²

- 7.14 percent to counties where oil is produced, for roads;
- 7.14 percent to local school districts statewide; and
- 3.745 percent to the county road and bridge improvement fund.

Revenue from oil wells paying the one percent incentive tax rate is distributed equally between counties where oil is produced for roads, and local school districts statewide.

Permanent Savings: Oklahoma does not save any production revenue from oil in a permanent fund.

Tax Expenditures: Tax expenditures are defined here as direct production tax incentives and production tax revenue that is collected and allocated to dedicated tax relief (e.g. income or property tax reductions).¹³ Oklahoma's tax expenditure is the value of the horizontal drilling tax incentive in terms of forgone revenue from the base tax rate, in this case the difference between tax collections from a typical horizontal well in the first 48 months at one percent (the incentive rate) versus seven percent (the base rate). Oklahoma's is the most generous tax expenditure for industry. Montana's total tax expenditures are higher, but a large share of these are dedicated property tax relief to landowners across the state, rather than specific drilling incentives offered to the oil and natural gas industry.

Figure 6: Oklahoma Distribution Policy Applied to a Typical Unconventional Oil Well

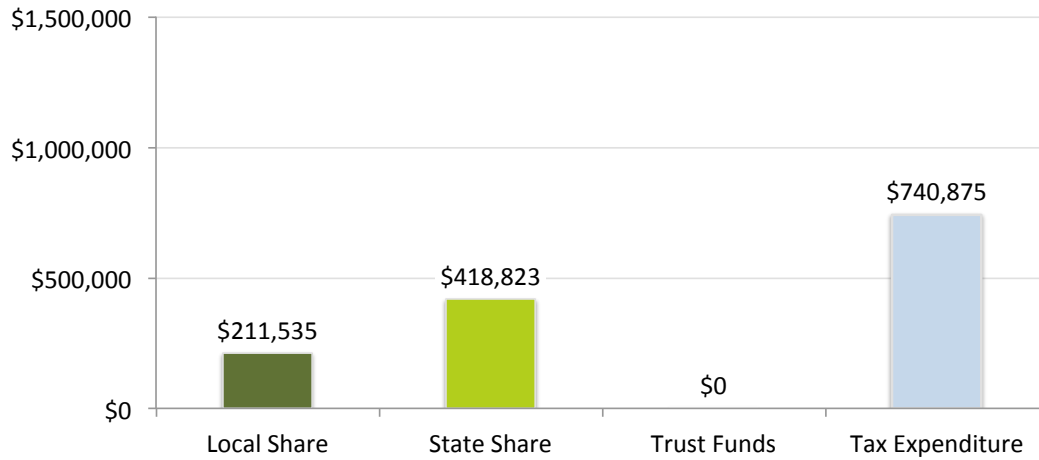


Table 2: Oklahoma Distribution Policy Applied to a Typical Unconventional Oil Well

Distribution	Description	Amount	Share of Total
State Share		\$418,823	30.5%
General Fund		\$0	0.0%
Infrastructure Spending	4.28% divided equally between the Oklahoma Tourism and Recreation Department Capital Expenditure Revolving Fund, the Oklahoma Conservation Commission Infrastructure Revolving Fund, and the Community Water Infrastructure Development Revolving Fund.	\$20,909	1.5%
Natural Resources Mgmt.	0.95% Excise Tax funds oil and gas regulation.	\$18,360	1.3%
Other	77.695% of total distributions as follows: 25.72% to each of the Common Education Technology Revolving Fund, the Higher Education Capital Revolving Fund, and the Oklahoma Student Aid Revolving Fund; and 0.535% to the Statewide Circuit Engineering District Revolving Fund.	\$379,554	27.7%
Local Government		\$211,535	15.4%
Local Production Taxes		\$0	0.0%
Direct Distributions	7.14% to County Highway Funds based on the share of oil extraction from each county. (If levied at the one percent tax rate, 50% is distributed as above.)	\$96,620	7.0%
Impact Grants	7.14% to schools statewide. (If levied at the one percent tax rate, 50% is distributed as above; 3.745% to the County Road and Bridge Improvement Fund.)	\$114,915	8.4%
Trust Funds		\$0	0.0%
Natural Resources Trust Fund		\$0	0.0%
Schools Trust Fund		\$0	0.0%
Other Trust Funds		\$0	0.0%
Tax Expenditures (Incentives)		\$740,875	54.0%
Production Tax Incentives	Four-year incentive rate of one percent for horizontally completed wells.	\$740,875	54.0%
Dedicated Tax Relief		\$0	0.0%
Total Distributions		\$1,371,233	100.0%

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Headwaters Economics is an independent, nonprofit research group whose mission is to improve community development and land management decisions in the West.

Endnotes

¹ Headwaters Economics. *Oil and Natural Gas Fiscal Best Practices: Lessons for State and Local Governments*. November 2012. http://headwaterseconomics.org/wphw/wp-content/uploads/Energy_Fiscal_Best_Practices.pdf.

² See, for example: Energy Information Administration. 2013a. NEMS Model Documentation 2013: Oil and Gas Supply Module. Appendix 2.C: Decline Curve Analysis. U.S. Department of Energy. Washington, D.C.

³ This same approach is used by other analysts. See, for example, Ernst & Young LLP. 2012. Analysis of Ohio Severance Tax Provisions of H.B. 487. Prepared by Ernst & Young LLP for the Ohio Business Roundtable. <http://jobs-ohio.com/images/Ernst-Young-Severance-Tax-Analysis-Prepared-for-the-Ohio-Business-Roundtable-5-15-12.pdf>. See also Montana Department of Revenue. 2012. Oil and Gas Production Tax Comparison: Montana and North Dakota. Helena, MT. http://revenue.mt.gov/content/committees/legislative_interim_committee/oil_and_gas_prod_tax_comp_july_rtic.pdf.

⁴ Montana Board of Oil and Gas Conservation. Production data for Elm Coulee Horizontally Completed Wells. 2000 to 2013. Department of Natural Resources and Conservation. Analysis by Headwaters Economics.

⁵ Oklahoma Tax Commission. Gross Production Monthly Rate. <http://www.tax.ok.gov/gp2.html>.

⁶ Oklahoma Tax Commission. <http://www.tax.ok.gov/gp2.html>.

⁷ Oklahoma Statutes Title 68. Revenue and Taxation. Chapter 1 - Tax Codes. Article 10 - Gross Production Tax Rates. Section 1001 – Gross production Tax on Certain Interests - Exemptions. <http://www.oscn.net/applications/oscn/DeliverDocument.asp?CiteID=440446>. See also: Oklahoma Tax Commission. Gross Production Monthly Rate. <http://www.tax.ok.gov/gp2.html>.

⁸ Ibid.

⁹ Ibid.

¹⁰ Oklahoma State Senate. Oklahoma Senate Overview of State Issues, November 2012. Apportionment of Gross Production Taxes (page 42). http://www.oksenate.gov/publications/overview_of_state_issues_2012/overview_of_state_issues_2012.pdf.

¹¹ Oklahoma Statutes Title 68. Revenue and Taxation. Chapter 1 - Tax Codes. Article 10 - Gross Production Tax Code. Section 1004 - Apportionment and Use of Proceeds of Tax. <http://www.oscn.net/applications/oscn/DeliverDocument.asp?CiteID=92254>. See also: Oklahoma State Senate. Oklahoma Senate Overview of State Issues. Apportionment of Gross Production Taxes (page 42).

¹² Ibid.

¹³ Tax Expenditures. Wikipedia. http://en.wikipedia.org/wiki/Tax_expenditure.