



# BURNING MONEY

Updating Rules for Oil and Gas Loss  
on Federal Lands

NOVEMBER 2014





Natural gas fields. © Creative Commons, Flickr.com

Onshore federal oil and gas leasing is managed by the Bureau of Land Management (BLM) within the Department of the Interior (DOI). BLM manages both leasing on federal lands and leasing of federal minerals underlying nonfederal lands. This report looks at two things: 1. the cost to taxpayers of uncollected royalties on natural gas extracted from federal lands as a result of existing waste prevention rules, and 2. the lack of incentives to avoid emissions of methane into the atmosphere, which create additional liabilities for federal taxpayers. This will be the first in a series of reports looking at the existing system for charging, verifying, and collecting federal royalties for publicly owned natural gas.

## Findings in Brief

According to Taxpayers for Common Sense (TCS) analysis of data from the Office of Natural Resource Revenue (ONRR) within the Department of the Interior:<sup>1</sup>

- Federal taxpayers lost in excess of \$380 million from 2006 through 2013 on gas extracted from onshore federal leases as a result of existing royalty relief for “beneficial purposes” and “unavoidably lost” gas.<sup>2</sup> Most of this loss—82 percent—was associated with gas used by drilling operators for beneficial purposes, which allows oil and gas companies to consume publicly owned natural gas for certain defined purposes at no cost.
- The amount of gas drilling operators reported for beneficial purposes and unavoidably lost gas (approved for venting or flaring) from 2006 through 2013—665.7 billion cubic feet (bcf)<sup>3</sup>—is roughly equal to the average amount of gas consumed by all households in the State of New York in a year.<sup>4</sup>
- In many states, operators on federal leases reported annual amounts of gas used for beneficial purposes and lost gas equal to 10 percent or more of the total annual volume of gas sold in the state.
- The total volume of beneficial purpose and unavoidably lost gas on federal leases—both nominally and relative to the total volume of gas sold annually—is steadily increasing.

1 See Appendix B for description of data requested from ONRR.

2 All royalty amounts are expressed in 2013 dollars.

3 According to the American Gas Association: “1 billion cubic feet (Bcf) of natural gas is enough to meet the needs of approximately 10,000 - 11,000 American homes for one year.”

4 U.S. Census Bureau, State & County QuickFacts, New York, Households, 2008-2012 (Ave.): 7,230,896

## Recommendations

ONRR data show that the existing rules have cost taxpayers significant revenue and contributed to the release of environmentally damaging methane into the atmosphere. As a result, DOI should:

- Collect a royalty on any gas leaked in excess of a reasonable amount, defined as the amount of gas leaked with use of best existing technology (e.g. no-bleed controllers);
- Provide greater transparency in approval process for royalty-free venting and flaring;
- Harmonize reporting from drilling operators and federal lessees;
- Establish better public disclosure of production and disposition data reported by drilling operators.

Because of the high cost to taxpayers of allowing drilling operators to freely consume publicly owned gas on well sites, **Congress should amend the Mineral Leasing Act to remove language providing for royalty-free consumption of federal gas by drilling companies.**

## Context

The existing rules governing payment of royalties for natural gas lost during production on federal lands are more than 30 years old.<sup>5</sup> BLM has issued an advanced notice of proposed rulemaking for: “Onshore Oil and Gas Order 9: Waste

5 Royalty or Compensation for Oil and Gas Loss, Notice to Lessees and Operators of Onshore Federal and Indian Oil and Gas Leases (NTL-4A), January 1, 1980.

Prevention and Use of Produced Oil and Gas for Beneficial Purposes,” which will establish new standards for determining royalty payments on lost gas.<sup>6</sup> A draft of the rule is expected early next year.

As it considers the extent of royalty relief to grant under any new waste prevention rules for oil and gas loss, BLM must consider the amount of revenue lost from royalty relief under the existing rules. BLM and DOI must also factor in the downstream costs to taxpayers of drilling operators releasing methane directly into the atmosphere.

## Existing Rules

Summaries of the existing terms for royalty payments on lost gas are as follows:<sup>7</sup>

- **Beneficial Purpose:** Under existing rules, oil and gas companies are allowed to utilize gas from a well as fuel and for other uses on the lease site. This includes fuel used for the “lifting of oil or gas, heating of oil or gas to place it in a merchantable condition, compressing gas to place it in a merchantable condition, firing steam generators for enhanced recovery of oil, drilling rig engines, as the source of actuating automatic valves at production facilities, or as the circulation medium during drilling operations.”<sup>8</sup> No royalties are paid on this gas.
- **Unavoidably Lost:** Existing rules also allow for the loss of natural gas in certain cases, exempting oil and gas companies from royalty payments on gas that is vented (released directly into the atmosphere) or flared (burned) with prior authorization or approval, known as “unavoidably lost” gas. BLM allows venting or flaring of gas in cases of emergencies, and for certain well evaluation and production tests. Unavoidably lost gas also includes fugitive emissions released from storage tanks or other low-pressure production vessels or because of line failures, and equipment malfunctions.
- **Avoidably Lost:** Oil and gas companies must pay royalties on gas that is “avoidably lost,” which includes gas lost as a result of negligence, failure to take all reasonable measures to prevent the loss, or failure to comply with applicable lease terms and regulations, appropriate provisions of the approved operating plan, or the prior written orders.

<sup>6</sup> According to the Federal Register: “This new order would establish standards to limit the waste of vented and flared gas and to define the appropriate use of oil and gas for beneficial purposes. This order would, among other things, delineate which activities qualify for beneficial purposes, minimize the amount of venting and flaring that takes place on oil and gas production facilities on Federal and Indian lands, and establish standards for determining avoidable versus unavoidable losses.” Available at: <https://www.federalregister.gov/regulations/1004-AE14/onshore-oil-and-gas-order-9-waste-prevention-and-use-of-produced-oil-and-gas-for-beneficial-purposes>

<sup>7</sup> Op. Cit., NTL-4A, “Definitions”.

<sup>8</sup> Ibid.

## Amounts of Beneficial Purpose and Lost Gas

The aggregate volumes of gas used for beneficial purposes and unavoidably lost gas as reported by drilling operators on onshore federal leases are as follows:

- Oil and gas companies reported a total of 665.7 bcf of beneficial purposes and unavoidably lost gas (flared and vented) on onshore federal leases in 25 states from 2006 through 2013. No royalties were paid on this gas.
- The majority of this total—82 percent or 543.4 bcf—was for gas consumed by oil and gas companies for so-called **beneficial purposes** from 2006 through 2013. New Mexico accounted for 48 percent of the beneficial purposes total.
- From 2006 through 2013, oil and gas companies reported a total of 89.9 bcf of **flared** gas that was unavoidably lost—gas BLM approved for flaring. North Dakota accounted for 29 percent of this total, and New Mexico and South Dakota accounted for 15 percent and 14 percent, respectively.
- Operators on federal leases reported 32.3 bcf of **vented** gas that was unavoidably lost from oil and gas wells during the same period. New Mexico accounted for 51 percent of the total, and Montana accounted for 41 percent.

## Unpaid Royalties

No royalties are paid on gas consumed for beneficial purposes or approved by BLM to be flared or vented as unavoidably lost. On its website, ONRR reports the total sales volume and total royalties paid by federal lessees for a variety of natural resources, including natural gas. Using this data, it is possible to calculate an average royalty paid per thousand cubic feet (mcf) of gas extracted in individual states, for each sales year, from 2006 through 2013. Using this

average royalty paid, the estimated foregone revenue for approved beneficial purposes, flaring, and venting of unavoidably lost gas is as follows:

- The total amount of foregone revenue for all **beneficial** purposes and lost gas reported by operators on federal leases from 2006 to 2013 totaled \$380.5 million.
- The total amount of foregone revenue for all beneficial purposes gas reported by operators on federal leases from 2006 to 2013 totaled \$312.6 million.
- The total amount of foregone revenue for all **flared** gas reported by operators on federal leases from 2006 to 2013 totaled \$50.5 million.
- The total amount of foregone revenue for all **vented** gas reported by operators on federal leases from 2006 to 2013 totaled \$18.4 million.

### Gas Lost vs. Gas Sold

The total volume of federal gas sold varies widely from state to state. The results of a comparison of the total volumes of beneficial purposes and lost gas as reported by drilling operators to the corresponding volumes of total gas sold in each state as reported by federal lessees are as follows:

- In 2006, the total amount of beneficial purposes and unavoidably lost gas on onshore federal leases was equal to 2.1 percent of the total gas sold from onshore federal leases, increasing to 3.5 percent in 2013.
- Operators on federal land in South Dakota reported a total of 13.0 bcf of gas approved for **flaring** by BLM from 2006 to 2013, almost seven times the volume of gas reported as sold by federal lessees (1.9 bcf) in the state during this period. *In 2013, the total volume of flared gas in South Dakota was more than 16 times greater than the total volume sold, according to ONRR data.*
- Drilling operators on federal leases in North Dakota reported a total of 26.3 bcf of gas **flared** and 4.9 bcf of gas consumed for **beneficial purposes** from 2006 to 2013, equal to 40.5 percent of the total volume of gas reported as sold by federal lessees (77.1 bcf) in the state during this period.
- From 2006 to 2013, the total volume of gas consumed for **beneficial purposes** by operators on federal leases in California (7.4 bcf) was equal to 14.2 percent of the total volume of gas reported sold by federal lessees (51.8 bcf) in the state during this period.

**In 2013, the total volume of flared gas in South Dakota was more than 16 times greater than the total volume sold, according to ONRR data.**

### Increase over Time

- From 2006 to 2013, the total amount of gas reported sold by onshore federal lessees **decreased** 26 percent from 3.58 tcf to 2.66 tcf. During the same period, the total amount of gas used for beneficial purposes and unavoidably lost gas reported by drilling operators **increased** 23 percent, from 76.0 bcf to 93.8 bcf.
- The total volume of unavoidably lost **vented** gas increased from 2.1 bcf in 2006 to 4.9 bcf in 2013, an increase of more than 130 percent. New Mexico accounted for almost the entire increase, rising from 102.9 million cubic feet (Mmcf) of gas vented in 2006 to 4.3 bcf in 2013, an increase of over **four thousand percent**. This offset a decrease of 2.0 bcf of vented gas in Montana during this period.
- The total amount of unavoidably lost **flared** gas almost doubled from 2006 to 2013, from 8.9 bcf to 17.6 bcf. North Dakota saw the largest single-state increase during the period, from 624 Mmcf of gas flared to 6.3 bcf, an increase of 913 percent.
- The total reported volume of gas consumed for **beneficial purposes** increased 10 percent from 65.0 bcf in 2006 to 71.3 bcf in 2013. Wyoming recorded the largest increase in volume for beneficial purposes in a single state, from 15.3 bcf to 18.6 bcf, an increase of 21 percent during this period.

## Conclusions

Our analysis of ONRR data on gas used for beneficial purposes and unavoidably lost gas leads to the following conclusions about the existing rules for compensation of oil and gas loss:

- **Existing rules have led to irresponsible and wasteful development.**

The amount of gas that has been unavoidably lost by operators in some states during the last eight years has been excessive. Drilling operators in South Dakota reported flaring more gas (royalty-free) than federal lessees in the state reported selling—every year from 2006 through 2013. Operators in North Dakota reported flaring and venting a total of 26.6 bcf of gas from 2006 through 2013, equal to one-third the amount of gas federal lease holders reported selling during this period. Anecdotal reports suggest that this authorized venting and flaring has resulted from the lack of infrastructure in the region to move federal gas from the well to markets. It is not in taxpayer’s interest to develop oil and gas resources where the infrastructure to capture well gas is not yet sufficiently developed, but existing rules allow drilling operators to do so at taxpayers’ expense.

- **Amounts of gas used for beneficial purposes could cost taxpayers more than \$1 billion.**

From 2006 through 2013, gas used by drilling operators for beneficial purposes cost taxpayers in excess of \$312 million. Even if the total amount of gas consumed by drilling operators for beneficial purposes remains constant, federal taxpayers could lose more than \$1 billion in royalties by 2040. Congress exempted gas used for beneficial purposes from royalty obligations in 1946 as part of an effort to “promote the development of oil and gas on the public domain.”<sup>9</sup> Almost 70 years later, there is no justification for granting oil and gas companies free access to public gas for use as fuel on well sites. This royalty-free gas represents another taxpayer subsidy to the oil and gas industry and should be eliminated, especially as Congress continues to look for ways to cut federal spending.

- **BLM should set reasonable limits for leaked gas and charge royalties above this amount.**

Because existing rules allow drilling operators on federal lands to consume well gas for beneficial purposes free of charge, there is no cost incentive for operators to conserve fuel or replace inefficient, high-bleed equipment, such as pneumatic devices. Using Environmental Protection Agency (EPA) data, the Government Accountability Office (GAO) reported that pneumatic devices alone accounted for 16 bcf of vented gases from onshore federal leases

in 2008.<sup>10</sup> Others project reciprocating compressor fugitives and high-bleed pneumatic devices alone will account for one-fifth of all vented gas by 2018.<sup>11</sup> Most of this leaked gas could reasonably be considered as wasted gas given that existing technologies could significantly reduce these fugitive emissions. BLM should establish a reasonable limit for fugitive emissions<sup>12</sup> with the use of existing technologies above which excess emissions are considered wasted gas not exempt from royalty obligations.

- **The lack of distinction between venting and flaring has likely contributed to significant release of methane into the atmosphere.**

There are no disincentives in existing rules to discourage operators from venting gas instead of flaring it, even though venting methane directly into the atmosphere is significantly more damaging to the environment than flaring or burning it.<sup>13</sup> From 2006 through 2013, operators on federal onshore leases reported the unavoidably lost venting of 32.3 bcf of methane, roughly the equivalent of 6 million barrels of oil.<sup>14</sup> It is difficult to believe that none of this gas could have been safely and economically flared instead of vented. In New Mexico, operators vented more gas (16.6 bcf) than the amount flared (13.7 bcf) during

10 Government Accountability Office, “Opportunities Exist to Capture Vented and Flared Natural Gas, Which Would Increase Royalty Payments and Reduce Greenhouse Gases,” October 2010.

11 ICF International, “Economic Analysis of Methane Emission Reduction Opportunities in the U.S. Onshore Oil and Natural Gas Industries,” March 2014.

12 Op. cit., GAO, p. 19, “the increased use of available technologies, including technologies that capture emissions from sources such as well completions, liquid unloading, or venting from pneumatic devices, could have captured about 40 percent—around 50 Bcf—of the natural gas EPA estimated was lost from onshore federal leases nationwide.”

13 According to the Environmental Protection Agency (EPA), methane gas absorbs more than 20 times the total energy than CO<sub>2</sub> for a 100-year time scale.

14 <http://www.unitjuggler.com/convert-energy-from-GcftNG-to-boe.html>

9 Mineral Leasing Act of 1920 as amended

this period. The downstream costs to taxpayers of significantly more potent greenhouse gas emissions should be reflected in the treatment of royalties charged for venting versus flaring of well gas, for both avoidably and unavoidably lost gas.

- **Data should be public**

ONRR collects two different data sets to measure volumes of gas extracted and sold from federal leases: 1.) production and disposition data from drilling operators, and 2.) sale and royalty data from federal lessees. In theory, the total amount of gas extracted from oil and gas wells and the amount of gas sold, minus the gas utilized or lost along the way, should be equal. Ideally, it should be possible to publicly account for every mcf of gas removed, whether or not it is ultimately sold, from federal leases. However, while aggregate data reported by federal lease holders for sales volumes, sales amounts, and royalties is available on the ONRR website,<sup>15</sup> data reported by drilling operators for beneficial purposes, venting, flaring, and other disposition volumes of gas is not. (The same is true for other resources, like coal.) DOI and ONRR should harmonize the two data systems it maintains for the production, disposition, and ultimate sale of publicly owned gas by drilling operators and federal lessees so it is possible to account for all gas extracted from federal leases, and it should make this data available on its website.

<sup>15</sup> <http://statistics.onrr.gov/ReportTool.aspx>



Oil storage tanks. © Creative Commons, Flickr.com

## Appendix A: BLM Authority

BLM tried once before to charge royalties for gas used for beneficial purposes when it issued NTL-4 in November 1974, the predecessor to NTL-4A. The court eventually struck down NTL-4, citing remarks made in 1945 during Senate hearings on amendments to the Mineral Leasing Act by the Vice President of Seaboard Oil Corporation:<sup>16</sup>

*For years the Government, under regulations of the Interior Department, has been computing royalty on the basis of sales... Recently, I have been advised that the Interior Department is going to change that practice; that from now on Government lessees must account for and pay royalty not on the basis of the oil and gas removed from the lease, but on the basis of the production at the well... I would suggest for your consideration, therefore, the addition of the words “removed or sold from said lease” after the word “production”.*

Congress adopted this language verbatim, amending the Mineral Leasing Act in 1946 to read: “such royalty as may be fixed in the lease, which shall not be less than 12½ per centum in amount or value of the production removed or sold from the lease...”<sup>17</sup> In 1978, the U.S. District Court in California held:

<sup>16</sup> Hearings on S. 1236 before the Subcommittee of the Senate Committee on Public Lands and Surveys, 79th Cong., 1st Sess., at 160.

<sup>17</sup> 30 U.S.C. § 226(b)(2)(A)(ii)

*This is persuasive evidence that in enacting the 1946 amendment to Section 17 Congress intended to ensure that royalty would be due only on oil and gas “removed” from the leasehold, not on total oil and gas produced at the well. Since oil and gas used for production purposes on the leasehold where they were initially produced are clearly not “removed” from that leasehold, no royalty should be required by Section 17.<sup>18</sup>*

However, BLM is on firm ground in its authority to charge royalties on gas it considers to have been wasted, whether intentionally or unintentionally leaked or flared. According to the Mineral Leasing Act of 1920: “Each lease shall contain provisions for the purpose of insuring the exercise of reasonable diligence, skill, and care in the operation of said property; a provision that such rules for ... the prevention of undue waste as may be prescribed by said Secretary shall be observed...”<sup>19</sup>

In 1976, Congress passed the Federal Lands Policy and Management Act, which requires “the United States receive fair market value of the use of the public lands and their resources unless otherwise provided for by statute.”<sup>20</sup> Congress further articulated BLM’s authority in the Federal Oil and Gas Royalty Management Act of 1982, which states, “Any lessee is liable for royalty payments on oil or gas lost or wasted from a lease site when such loss or waste is due to negligence on the part of the operator of the lease, or due to the failure to comply with any rule or regulation, order or citation issued under this Act or any mineral leasing law.”<sup>21</sup>

Some have argued that BLM does not have the authority to regulate air emissions because the Clean Air Act and other legislation give the EPA the authority to regulate air emissions. EPA’s 2012 federal air standards currently do not cover emissions from a variety of sources of methane emissions, including field engines, drilling rig engines, and turbines; well-head activities such as liquids unloading; and pneumatic devices other than controllers. The EPA is expected to release a strategy for reducing methane this year. Possible EPA action, however, does not preempt BLM’s mandate to both reduce waste and capture fair market value for publicly owned gas.

<sup>18</sup> Gulf Oil Corp. v. Andrus, 460 F.Supp. 15 (D.Cal.1978). Also see Marathon Oil Company v. Andrus, 452 F.Supp. 548 (D.Wyo.1978)

<sup>19</sup> 30 U.S.C. § 187

<sup>20</sup> 43 U.S.C. § 1701 (9)

<sup>21</sup> 30 U.S.C § 1756

## Appendix B: Description of Data

TCS requested data from ONRR on the amount of gas from onshore federal leases reported as “unavoidably lost” through venting or flaring and all gas consumed by oil and gas companies as fuel on lease sites, known as “beneficial purposes.” ONRR provided TCS with aggregate data by state and year from Oil and Gas Operations Reports (OGOR) submitted by drilling operators on federal leases, for the following disposition codes:<sup>22</sup>

- DC20: Gas Used on Lease/Agre.–Native Production Only: production from a lease/agreement that has been used on or for the benefit of the lease/agreement with prior approval from BLM or BSEE<sup>23</sup> (e.g., gas native to lease/agreement used to operate production facilities). Does not include gas which has been purchased to conduct lease/agreement operations.
- DC21 Flared Oil - Well Gas: flared casing head gas from an oil well.
- DC22 Flared Gas - Well Gas: flared gas from a gas well.
- DC23 Gas Lost - Unavoidable - Royalty Not Due: oil or gas production native to a lease/agreement that was unavoidably spilled or lost and considered by BLM or BSEE to be not recoverable and, therefore, not subject to royalty; condensate that was burned with approval and not determined to be avoidably lost or wasted.
- DC61 Vented Oil - Well Gas: vented casing head gas from an oil well.
- DC62 Vented Gas - Well Gas: vented gas from a gas well.

The raw data is available for download at [www.taxpayer.net](http://www.taxpayer.net).

<sup>22</sup> Minerals Production Reporter Handbook, Release 2.0, effective 9/15/2014. Appendix I Disposition/Adjustment Codes. The product Disposition/Adjustment Code is a two-digit code indicating the means of product removal from the report entity. It is used on OGOR-B and -C.

<sup>23</sup> Bureau of Safety and Environmental Enforcement.

Although many oil and gas reservoirs include production from multiple lessees, including private and state lease holders, the data provided to TCS from ONRR accounts for *only* the federal portion of production and disposition reported on the OGORs from onshore federal lease agreements.

ONRR reported data from drilling operators in two states, Illinois and Nevada, where there was no data reported from lease holders.

## Tables

**Total Reported Volumes by Oil and Gas Report Disposition Codes (mcf), 2006-2013**

Year	Beneficial Purposes	Flared Oil–Well Gas	Flared Gas–Well Gas	Gas Lost–Unavoidable –Royalty Not Due	Vented Oil–Well Gas	Vented Gas–Well Gas	Total
2006	64,978,856	2,939,789	5,969,160	9,679	2,019,905	100,948	76,018,337
2007	63,622,129	2,429,838	8,125,518	5,935	2,770,878	1,153,426	78,107,724
2008	64,853,921	3,713,298	7,308,131	39,394	3,069,625	1,173,901	80,158,270
2009	67,332,562	5,195,955	4,593,680	15,071	3,422,950	1,157,910	81,718,128
2010	69,482,733	6,531,082	1,726,426	8,049	2,086,160	1,688,352	81,522,802
2011	69,968,732	9,838,011	1,068,268	8,144	184,305	3,802,036	84,869,496
2012	71,833,011	11,699,926	1,133,390	9,389	741,530	4,071,840	89,489,086
2013	71,339,924	15,956,170	1,627,912	18,689	721,924	4,164,545	93,829,164
<b>Total</b>	<b>543,411,868</b>	<b>58,304,069</b>	<b>31,552,485</b>	<b>114,350</b>	<b>15,017,277</b>	<b>17,312,958</b>	<b>665,713,007</b>

Source: ONRR data

**Estimated Royalty Values of Reported Volumes by Oil and Gas Report Disposition Codes, 2006-2013**

Year	Beneficial Purposes	Flared Oil–Well Gas	Flared Gas–Well Gas	Gas Lost–Unavoidable –Royalty Not Due	Vented Oil–Well Gas	Vented Gas–Well Gas	Total
2006	\$55,474,179	\$2,222,002	\$5,144,787	\$8,102	\$1,614,381	\$93,429	\$64,556,881
2007	\$45,071,379	\$1,630,121	\$4,995,373	\$4,208	\$1,802,577	\$894,487	\$54,398,144
2008	\$61,196,304	\$3,182,226	\$6,430,124	\$39,339	\$2,517,181	\$1,170,507	\$74,535,681
2009	\$27,594,474	\$2,168,291	\$1,916,641	\$6,282	\$1,408,990	\$482,335	\$33,577,014
2010	\$36,765,587	\$3,325,508	\$897,238	\$4,318	\$913,334	\$906,939	\$42,812,923
2011	\$34,037,109	\$5,084,394	\$512,589	\$3,947	\$93,168	\$1,900,301	\$41,631,508
2012	\$23,195,034	\$4,593,753	\$366,247	\$3,092	\$243,968	\$1,359,976	\$29,762,069
2013	\$29,163,574	\$7,355,416	\$628,857	\$7,995	\$305,984	\$1,731,844	\$39,193,670
<b>Total</b>	<b>\$312,497,639</b>	<b>\$29,561,710</b>	<b>\$20,891,857</b>	<b>\$77,283</b>	<b>\$8,899,584</b>	<b>\$8,539,819</b>	<b>\$380,467,892.7</b>

Source: ONRR data

**Gas Lost as Percentage of Gas Sold, by State, 2006-2013**

State	Total Sales	Beneficial Purposes	% of Sales	Flared	% of Sales	Other	% of Sales	Vented	% of Sales	Total Lost	% of Sales
South Dakota	1,885,638	504,728	26.8%	13,025,602	690.8%		0.0%	-	0.0%	13,530,337	717.5%
North Dakota	77,147,244	4,919,819	6.4%	26,317,442	34.1%		0.0%	307,529	0.4%	31,544,790	40.9%
California	51,795,469	7,356,570	14.2%	1,568,947	3.0%	13,004	0.0%	3,073	0.0%	8,941,594	17.3%
Montana	202,560,267	4,930,132	2.4%	11,895,970	5.9%		0.0%	13,093,966	6.5%	29,920,068	14.8%
Mississippi	6,277,799	488,274	7.8%	7,271	0.1%		0.0%	-	0.0%	495,545	7.9%
Michigan	21,243,857	1,489,396	7.0%	132,198	0.6%		0.0%	1,489	0.0%	1,623,083	7.6%
Louisiana	185,928,818	11,354,718	6.1%	1,044,379	0.6%	23	0.0%	725	0.0%	12,399,845	6.7%
New Mexico	6,234,957,533	260,789,218	4.2%	13,692,016	0.2%	86,079	0.0%	16,553,098	0.3%	291,120,411	4.7%
Alabama	5,657,396	195,446	3.5%	56,366	1.0%		0.0%	-	0.0%	251,812	4.5%
Utah	2,065,979,464	74,465,561	3.6%	6,660,986	0.3%		0.0%	518,728	0.0%	81,645,275	4.0%
Alaska	162,555,818	4,247,326	2.6%	209,589	0.1%		0.0%	178,432	0.1%	4,635,347	2.9%
Arkansas	99,514,515	2,787,588	2.8%	-	0.0%		0.0%	-	0.0%	2,787,588	2.8%
Texas	242,625,228	5,659,231	2.3%	145,020	0.1%	14	0.0%	261	0.0%	5,804,526	2.4%
Kansas	52,876,719	1,098,868	2.1%	-	0.0%		0.0%	-	0.0%	1,098,868	2.1%
Kentucky	1,743,848	33,833	1.9%	-	0.0%		0.0%	-	0.0%	33,833	1.9%
Colorado	2,208,153,738	24,653,240	1.1%	2,900,086	0.1%	12,268	0.0%	230,561	0.0%	27,796,155	1.3%
Wyoming	12,425,976,645	137,315,268	1.1%	12,114,608	0.1%	2,963	0.0%	1,274,293	0.0%	150,707,132	1.2%
Ohio	4,355,618	49,040	1.1%	192	0.0%		0.0%	-	0.0%	49,232	1.1%
Oklahoma	111,862,081	969,574	0.9%	2,059	0.0%		0.0%	168,083	0.2%	1,139,716	1.0%
Nebraska	2,647,824	22,938	0.9%	-	0.0%		0.0%	-	0.0%	22,938	0.9%
West Virginia	7,126,068	38,719	0.5%	-	0.0%		0.0%	-	0.0%	38,719	0.5%
New York	113,156	105	0.1%	-	0.0%		0.0%	-	0.0%	105	0.1%
Virginia	1,991,464	459	0.0%	-	0.0%		0.0%	-	0.0%	459	0.0%
Illinois		8,719		83,826							
Nevada		33,096		-							
<b>Total</b>	<b>24,174,976,206</b>	<b>543,411,868</b>	<b>2.2%</b>	<b>89,856,554</b>	<b>0.4%</b>	<b>114,350</b>	<b>0.0%</b>	<b>32,330,235</b>	<b>0.1%</b>	<b>665,713,007</b>	<b>2.8%</b>

Source: ONRR data



Burning Money: **Updating Rules for Oil and Gas Loss on Federal Lands**

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