NOTES

Two Ideas, Many Outcomes: How Anti-waste Sentiments and the Public Trust Doctrine Support Varied Interests in Fracking-Related Litigation

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INTRODUCTION

Fracking regulations in the United States have often been lamented as a messy patchwork of conflicting laws sprinkled amongst the federal, state, and local

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levels. With no common thread weaving the regulatory levels together, citizens, industry groups, and regulators are faced with a confusing array of options when it comes to fracking related regulation and litigation. This Note argues that, conceptually, there are important threads throughout both state and federal levels of the existing fracking regime that could be used to serve varied interests when pursuing fracking-related litigation. At the root of these similarities are two interrelated concepts: what this Note terms "anti-waste sentiments," and the public trust doctrine. As both anti-waste sentiments and the public trust doctrine are understood at federal and state levels in most fracking cases, litigants are best served understanding the connection between these two concepts.

Described in depth in Part I, anti-waste sentiments are constitutional and statutory provisions expressly designed to protect both private and public interests from wasteful actions in specific contexts. Drawing upon a partial definition from New York's Oil, Gas, and Solution Mining Law ("OGSML"), this Note defines waste as an "inefficient, excessive or improper use of" natural gas and associated resources used throughout the course of fracking.[1] At their most basic level, anti-waste sentiments encourage the efficient production and use of natural resources.

The public trust doctrine embodies much of the same conceptual framework as anti-waste sentiments; in federal administrative law, state constitutional law, and state oil and gas statutes, these sentiments are sometimes expressed through the public trust doctrine. However, the scope of the public trust doctrine can be thought of as encompassing a larger time scale and is more focused on designating certain resources as "trust resources," than placing the management of those resources in state or federal hands. Additionally, whereas anti-waste sentiments are focused on efficient use and production techniques during extraction, the public trust doctrine is more concerned with an intergenerational distribution of the use and production of public trust resources. Thus, Part I also provides an explanation of the public trust doctrine as it applies to fracking.

Parts II, III and IV compare expressions of the public trust doctrine and anti-waste sentiments in three distinct, often competing arenas of law: federal administrative law, state constitutional law, and state oil and gas statutes. Part II explores how anti-waste sentiments and the public doctrine have been used in federal laws that govern fracking. Specifically, Part II analyzes the Mineral Leasing Act, the Federal Land Policy Management Act, and the Bureau of Land Management's Venting and Flaring Rule. Part III then moves to state law, looking at the constitutional and common law interpretations of the public trust doctrine in Pennsylvania, Montana, Louisiana, and North Dakota. Part IV compares oil and gas statutes of Colorado and Wyoming in an effort to draw examples of the public trust doctrine directly from state laws that seek to regulate the natural

1. *See* N.Y. Envtl. Conserv. Law § 23-0101(20)(b) (McKinney 2018); Wallach v. Town of Dryden, 23 N.Y.3d 728, 750 (2014) ("The OGSML's overriding concern with preventing waste is limited to inefficient or improper drilling activities that result in the unnecessary waste of natural resources.").

gas industry. This Note concludes by weaving the three arenas of regulation together, suggesting that a broad spectrum of interests could be served by using both anti-waste sentiments and the public trust doctrine as a basis for fracking-related litigation.

I. WHAT ARE "ANTI-WASTE SENTIMENTS" AND HOW DO THEY RELATE TO THE PUBLIC TRUST DOCTRINE?

A. ANTI-WASTE SENTIMENTS DEFINED

Even within the narrow context of fracking, the concept of waste can mean drastically different things. This Note is not concerned with material waste that comes from the act of fracking, such as drilling fluids, groundwater incursion, or other wastes associated with the exploration of natural gas; rather, this Note focuses on the careless or extravagate use of natural gas.[2] In an attempt to establish a legal basis for recognizing waste, the existing legal paradigm must be capable of recognizing the waste of natural gas itself as an unlawful act. In an attempt to define lawful versus unlawful use of natural gas, this Part explores what constitutes "legally cognizable waste" in terms of fracking.

Professor Michael Pappas contends that legally cognizable waste depends on the convergence of two factors: (1) the perceived use-to-scarcity ratio of the resource and (2) societal values attached to the production and use of that resource.[3] Use-to-scarcity ratio refers to the overuse or underuse of a resource compared to the perception of that resource's abundance or scarcity.[4] Overuse of a resource coupled with scarcity of that particular resource creates a strong case for legal recognition of waste. Conversely, underuse of a resource coupled with resource abundance is a harder form of waste to legally recognize.

The second aspect of legally cognizable waste is the specific societal value attached to the resource.[5] These values can range from economic to aesthetic, from intergenerational equity concerns to private wealth maximization. A resource can have numerous, often competing, societal values attached to it. For example, take an old-growth forest. Some members of society may value the forest for its aesthetic beauty, whereas others may look at the same forest and only see the monetary value of the timber. Still others may look at the forest with a spiritual reverence that transcends aesthetic appreciation.

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2. The definition of "waste" is from *Waste,* MIRIAM WEBSTER (11th ed. 2016), but has been edited to reflect the content of this Note.

3. Michael Pappas, *Anti-Waste*, 56 ARIZ. L. REV. 741, 751 (2014).

4. *See id*. at 752–53 (noting that the perception of relative abundance or scarcity is more important than the physically quantifiable underlying facts of whether or not a resource is "scarce.").

5. *Id*. at 754 (explaining that if the resource is of no value or use it cannot be valued).

Natural gas is different. As a society, we extract natural gas primarily to generate energy.[6] Before natural gas reaches its final destination, like all commodities, it must be sold. In the Trump Era, the idea of becoming a net exporter of energy has tantalized many and is a cornerstone of the America First Energy Policy.[7] Hence, the societal value attached to natural gas lies in our ability to extract it from the earth, sell it, and power our world.

1. Anti-waste and Natural Gas

In regard to fracking, natural gas is a seemingly abundant, inefficiently utilized resource. Industry easily accesses natural gas formations around the country but cannot guarantee an optimal percentage of the gas is captured for beneficial usage.[8] Therefore, the present use of natural gas can be considered inefficient, especially where venting and flaring are concerned.[9]

Regarding scarcity, natural gas is currently touted as a plentiful resource that is America's answer to energy independence, but the United States' natural gas reserves may not be as bountiful as the public imagines.[10] In order to create a legally cognizable course of action to curtail waste, public perception of resource abundance and the public-versus-private nature of the resources are key: if a resource is considered private or if its physical reserves are conceptualized as abundant, the general public will not care about conserving that resource;[11] if a resource is private, there are few legal courses of action to forbid the owner from using the property inefficiently; and if there is an overabundance of a resource, few people, if any, will be concerned with using the resource efficiently.[12]

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6. *See* U.S. ENERGY INFO. ADMIN, USES OF NATURAL GAS (Oct. 26, 2017), https://www.eia.gov/energyexplained/index.cfm?page=natural_gas_use. Natural gas is also used as a raw material to produce chemicals, fertilizer, and hydrogen. *Id.* However, the vast majority of natural gas is used for energy production.

7. *See* Press Release, *White House, President Trump Vows to Usher in Golden Era of American Energy Dominance* (June 30, 2017), https://www.whitehouse.gov/articles/president-trump-vows-usher-golden-era-american-energy-dominance/.

8. *See* Waste Prevention, Production Subject to Royalties, and Resource Conservation, 81 Fed. Reg. 83,008, 83,009 (Nov. 18, 2016) (to be codified at 43 C.F.R. pt.s 3100, 3160, and 3170) [hereinafter Waste Prevention] ("Over the past decade, the United States has experienced a dramatic increase in oil and natural gas production due to technological advances, such as hydraulic fracturing combined with directional drilling. Yet the American public has not benefited from the full potential of this increased production, due to venting, flaring, and leaks of significant quantities of gas during the production process.").

9. *See infra* Part II(C), (discussing venting and flaring in depth).

10. *See* Asher Miller, *The Revolution that Wasn't: Why the Fracking Phenomenon Will Leave Us High and Dry*, POST-CARBON INSTITUTE (Oct. 28, 2014), http://www.postcarbon.org/the-revolution-that-wasnt-why-the-fracking-phenomenon-will-leave-us-high-and-dry/.

11. If there is no public push to conserve a resource or prevailing public notion that a resource is worth saving, then it is harder for laws to be written in the interest of protecting such a resource.

12. *See generally* Donald Kochan, *A Framework for Understanding Property Regulation and Land Use Control from a Dynamic Perspective*, 4 MICH. J. ENVT'L & ADMIN. L. 303 (2015).

For natural gas, the economic value of exploitation, coupled with the perceived value of natural gas as a bridge fuel, raises its societal value. Corporations, individuals, and federal and state governments all stand to profit from natural gas production.[13] Natural gas is also viewed as a cleaner-burning fuel source than coal. Some estimate that reducing overall energy demand and displacing coal-fired power plants with natural-gas-fired power plants could reduce CO_2 emissions by as much as fifty percent.[14] Hence, society has attached two values to natural gas: profit maximization and potential reduction of greenhouse gases ("GHGs") emitted by the energy sector.

Together, the use-to-scarcity ratio of natural gas and its assigned societal value create somewhat of a legal paradox: waste of natural gas is a legally cognizable yet rarely enforced phenomenon due to its perceived abundance. The inefficient use of natural gas undermines the societal values attached because economic benefit is not maximized and GHGs are added to the atmosphere at a higher rate than when natural gas is used efficiently. Thus, waste of natural gas is legally cognizable when natural gas is handled in a manner that *decreases* economic benefit while *increasing* the release of socially harmful GHGs.

2. Anti-waste and Water

When analyzing the fracking industry's water footprint, one of the most important variables to consider is location. Location will dictate the type of geologic formation being fracked, the type of technology used during drilling, and the type of water source available.[15] Depending on location, a single hydraulically fractured well uses anywhere from two to twenty million gallons of water over the course of the well's lifecycle.[16] Industry-wide water use is an estimated thirty-eight to forty-five billion gallons of water annually.[17] Interestingly, compared with other forms of conventional energy production, fracking is a less water-intensive production process.[18] Further contextualized within national consumptive uses, the water footprint of fracking can seem even more insignificant; when

13. *See* Waste Prevention, *supra* note 8. In 2015, the production value of oil and natural gas produced from public lands exceeded $20.9 billion and generated over $2.3 billion in royalties. These royalties were shared with tribes, Indian allottee owners, and States.

14. GREGORY S. MCRAE & CAROLYN RUPPEL, THE FUTURE OF NATURAL GAS: AN INSTITUTIONAL MIT STUDY 1, 2 (2011).

15. Different types of shale plays are located at different depths, requiring the use of different technology and more water. *See* Heather Cooley & Kristina Donnelly, *Hydraulic Fracturing and Water Resources: Separating the Frack from the Fiction*, PACIFIC INSTITUTE, 1, 9 (June 21, 2012), http://pacinst.org/wp-content/uploads/2014/04/fracking-water-sources.pdf.

16. R.B. Jackson et al., *The Environmental Costs and Benefits of Fracking*, 39 ANNU. REV. ENV. RESOUR., 327, 325 (2014).

17. *Id.*

18. *See id.* at 335–36. To compare water use across energy industries, water use must be converted to "water intensities," calculated as volume used per unit of energy generated. Intensities for coal, nuclear, and oil extraction are approximately two times, three times, and ten times greater than the water intensity of shale gas.

compared with agricultural or thermoelectric uses, fracking is less than one percent of total national water use.[19] However, using industry and nation-wide statistics belies the local impact of fracking on regional water resources: fracking can have an incredible impact on local water resources.

In counties associated with the Haynesville, Barnett, and Eagle Ford shale plays, fracking accounted for eleven percent, eighteen percent, and thirty-eight percent of total groundwater use, respectively.[20] Future water-use during times of peak extraction is expected to reach forty percent to 135% of total available groundwater in counties that frack the Haynesville, Barnett, and Eagle Ford shale plays.[21] Again, geography is the key factor in these statistics, as water use and the approach to water reuse differs by county. For example, Texas, home to the Barnett shale play, reuses five percent of water used in the fracking process.[22] In contrast, Pennsylvania, home to the Marcellus shale play, reuses ninety percent.[23]

These geographic disparities illustrate how the societal value attached to the use of water differs from region to region.[24] One categorization would be to say that societies in water-stressed areas of the country, like the West, place a higher value on water.[25] However, in comparing water reuse in the Barnett to reuse in the Marcellus, there seems to be more to the equation than just geographic availability of water. Public attitudes towards the industry and the hesitancy of state regulators to impose stricter water-related rules both contribute to geographically distinct treatment of water resources.[26] In order to understand how likely a state would be to legally recognize a certain action as wasteful, a case-by-case analysis would be required.

B. CONTEXTUALIZING ANTI-WASTE SENTIMENTS WITHIN THE PUBLIC TRUST DOCTRINE

The public trust doctrine is a common-law doctrine by which states are responsible for ensuring certain natural resources are preserved for the use and benefit

19. *Id.*

20. R.B. Jackson et al., *supra* note 16. The Haynesville formation is primarily located under Louisiana while the Barnett and Eagle Ford are primarily located under Texas.

21. *Id.*; *see also How Much Water do US Fracking Operations Really Use?*, AM. CANCER SOC. (September 16, 2015) (noting that researchers have shown that local water shortages in drought-stricken areas, such as the Barnett formation in Texas, could limit future use of hydraulic fracturing).

22. U.S. ENVTL. PROT. AGENCY, DRAFT STUDY ON THE POTENTIAL IMPACTS OF HYDRAULIC FRACTURING ON DRINKING WATER RESOURCES ES-7, ES-20 (Office of Research and Dev. ed., 2015).

23. *Id.*

24. *See* Mark Reisner, CADILLAC DESERT 12 (1993).

25. Molly A. Maupin et al., *Estimated Water Use in the United States in 2010*, U.S. GEOLOGICAL SURVEY 9 (2014), https://pubs.usgs.gov/fs/2014/3109/. The seventeen western states, while accounting for thirty percent of the United States population account for roughly sixty percent of all groundwater use. In many locations throughout the West, the recharge rate of aquifers is negative. *Id.*

26. *See* GROUND WATER PROTECTION COUNCIL, REPORT ON STATE EFFORTS TO PROTECT GROUNDWATER FROM DRILLING 5 (Oct. 1, 2014), http://www.gwpc.org/sites/default/files/Oil%20and%20Gas%20Regulation%20Report %20Hyperlinked%20Version%20Final-rfs.pdf.

of both present and future generations.[27] Originally applied to submerged lands under tidal and navigable waters, the public trust doctrine has grown to cover a broad range of natural resources.[28] Litigants have used the public trust doctrine to protect public lands, parks, beaches, and the atmosphere, in addition to protecting water-based resources.[29] These recent actions have been focused on using the public trust doctrine in two situations: to invalidate governmental actions that may place public resources in jeopardy, or to uphold governmental actions that bar development on private lands.[30] These actions, discussed in depth in Parts II and III, demonstrate that courts are willing to use various strands of authority to create protections for natural resources that have traditionally fallen outside the public trust domain.

Though some courts have signaled a willingness to incorporate broad environmental values when applying the public trust doctrine, the common-law application of the doctrine is limited by two constraints. First, as a creature of common law, the public trust doctrine is traditionally applied retroactively and on a case-by-case basis.[31] Second, case-by-case application results in jurisdictional inconsistencies that are particularly acute in the public trust arena, with some states rarely recognizing or using the public trust doctrine.[32] Thus, what stakeholders need is a multi-pronged approach that weaves together the various strands of anti-waste sentiment in state constitutions and environmental statutes and situates them within the overarching idea of the public trust doctrine.

II. EXPLORING ANTI-WASTE AND THE PUBLIC TRUST DOCTRINE AT THE FEDERAL LEVEL

Although the federal government has ceded most of its authority to regulate fracking to the states, its role as manager of federal lands remains significant. The federal government is the largest land owner in the United States, owning roughly 640 million acres of land across the entire country.[33] A staggering 46.4 percent of the land west of the Rocky Mountains is managed by one of four federal agencies: the Bureau of Land Management ("BLM"), the Fish and Wildlife Service ("FWS"), the National Park Service ("NPS"), and the Forest Service ("FS").[34] In

27. *See* Joseph L. Sax, *The Public Trust Doctrine in Natural Resource Law: Effective Judicial Intervention*, 68 MICH. L. REV. 471, 475 (1970) (providing an overview of the public trust doctrine's origins).

28. Alexandra B. Klass, *The Public Trust Doctrine in the Shadow of State Environmental Rights Laws: A Case Study*, 45 ENVTL. L. 431, 433 (2015).

29. *Id*. at 439.

30. Alexandra B. Klass, *Modern Public Trust Principles: Recognizing Rights and Integrating Standards*, 82 NOTRE DAME L. REV. 699, 729–30 (2006).

31. *Id*.

32. *Id*.

33. CONG. RESEARCH SERV., R42346, FEDERAL LAND OWNERSHIP: OVERVIEW AND DATA 1 (2017).

34. *Id*. The eleven western states are: Montana, Wyoming, Colorado, New Mexico, Arizona, Utah, Idaho, Nevada, Washington, Oregon, and California.

Colorado and Wyoming, two states with a robust fracking presence, the federal government's ownership interest is substantial, owning 35.9 percent and 48.4 percent of the states, respectively.[35]

Unlike most types of energy production, fracking lacks a robust federal regulatory framework. Eight different federal laws have the potential to apply to the development of oil and gas from unconventional sources.[36] However, six of the eight federal laws have explicit exemptions and/or limitations restricting the application of the federal statutory regime to unconventional oil and gas development.[37] For example, the 2005 Energy Policy Act exempts hydraulic fracturing operations from the Safe Drinking Water Act ("SDWA") except when considering on-site use of diesel fuel.[38] The Resource Conservation and Recovery Act ("RCRA") includes what is known as "the Subtitle C" exemption for "drilling fluids, produced waters, and other wastes associated with the exploration, development, or production of crude oil or natural gas."[39]

In an attempt to provide an overview of the varied expression of the public trust doctrine and anti-waste sentiments at the federal level, this Part explores federal expressions of anti-waste sentiments in the Mineral Leasing Act of 1920 ("MLA"), the Federal Lands Policy Management Act ("FLPMA"), and the Obama Administration's BLM Venting and Flaring Rule ("VFR").

A. THE MINERAL LEASING ACT

The MLA illustrates the traditional model of anti-waste regulatory language, offering no qualifications or definitions for what waste entails in the context of oil and gas production.[40] The Act references prevention of undue waste in two sections.[41] In the General Provision, subchapter I, Section 187 provides "[e]ach

35. *Id*. at 8–9.

36. U.S. GOV'T ACCOUNTABILITY OFFICE, GAO-12-874, UNCONVENTIONAL OIL AND GAS DEVELOPMENT: KEY ENVIRONMENTAL AND PUBLIC HEALTH REQUIREMENTS 17 (2012). Small portions of the following eight statutes regulate or have the potential to regulate varying aspects of fracking: the Safe Drinking Water Act ("SDWA"), the Clean Water Act ("CWA"), the Clean Air Act ("CAA"), the Resource Conservation and Recovery Act ("RCRA"), the Comprehensive Environmental Response, Compensation, and Liability Act ("CERCLA"), Emergency Planning and Community Right To Know Act ("EPCRA"), Toxic Substance Control Act ("TSCA"), and the Federal Insecticide, Fungicide, and Rodenticide Act ("FIFRA").

37. *Id*. TSCA and FIFRA are the only federal environmental statutes that do not contain explicit exemptions for the fracking industry.

38. Avner Vengosh, et al., *Environmental Science & Technology: A Critical Review of the Risks to Water Resources from Unconventional Shale Gas Development and Hydraulic Fracturing in the United States*, 48 AM. CHEM. SOC'Y. 8334, 8335 (2014).

39. *See* 42 U.S.C. § 6921(b)(2) (2012). Recently, environmental groups, such as the Natural Resource Defense Council and the Environmental Integrity Project, have challenged the EPA's categorical exemption of oil and gas wastes under RCRA. *See* Nat. Res. Def. Council, *Petition for Rulemaking Pursuant to Section 6974(a) of the Resource Conservation and Recovery Act* (Sept. 8, 2010), https://www.nrdc.org/sites/default/files/ene_10091301a.pdf.; Envtl. Integrity Project v. McCarthy, 1:16CV00842 (D.D.C. 2016).

40. *See* 30 U.S.C. § 225 (2012).

41. *See id*. §§ 187, 225.

lease shall contain provisions for the purpose of insuring the exercise of reasonable diligence, skill, and care in the operation of said property [and] a provision that such rules . . . for the prevention of undue waste as may be prescribed by said Secretary shall be observed."[42] The Oil and Gas Subchapter provides no further specificity, stating that federal leases of lands containing oil and gas "shall be subject to the condition that the lessee will, in conducting his explorations . . . use all reasonable precautions to prevent waste of oil or gas developed in the land."[43] Enforcement of the MLA is generalized to prohibit any person from organizing or participating in "any scheme, arrangement, plan or agreement to circumvent or defeat the provisions of Chapter 3A of its implementing regulations."[44]

Federal courts have been reluctant to grant authority to the BLM to regulate fracking under the language of sections 187 and 225. In *Center for Biological Diversity v. BLM*, plaintiffs argued that the sale of 2,700 acres worth of federal oil and gas leases violated § 225 of the MLA because BLM failed "to ensure via lease terms that lessees take all reasonable precautions to prevent emissions of natural gas."[45] The court refused to read the MLA as imposing a mandate on BLM to force lessees to use BLM-specified technologies.[46] Citing § 706(1) of the Administrative Procedure Act, the court held that as long as the BLM included lease terms that required the lessee to employ "reasonable precautions" to prevent waste, the Court had no authority to intrude on BLM's discretion.[47]

Whereas *Center for Biological Diversity* dealt with the absence of agency action, *Wyoming v. DOI* dealt with jurisdictional overreach by the BLM. When promulgating fracking regulations for federal lands, the BLM invoked statutory authority under §§ 187 and 225 of the MLA, amongst numerous other authorities.[48] Like the court in *Center for Biological Diversity*, the *Wyoming* court found that the language of § 187 makes clear that specific provisions regarding the prevention of waste must appear in federal oil and gas leases themselves.[49] Reading § 187 in context, however, the court explained that the section "does not reflect a broad grant of authority to regulate for the protection of the environment"[50];

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42. *Id.* § 187.
43. *Id.* § 225.
44. *Id.* § 195.
45. Ctr. for Biological Diversity v. Bureau of Land Mgmt., 937 F. Supp. 2d 1101, 1160 (N.D. Cal. 2013).
46. *Id.* at 1160–61 ("Nothing in the language suggests that courts may affirmatively compel BLM to require lessees to employ certain technologies, however reasonable or economically viable.").
47. *Id.* at 1161.
48. *See* State of Wyoming v. U.S. Dep't of the Interior, No. 2:15-CV-041-SWS, 2016 WL 3509415, at *4 (D. Wyo. June, 2016) ("The BLM asserts authority to promulgate the Fracking Rule under an array of various statutes: The Federal Land Policy and Management Act of 1976, 43 U.S.C. §§ 1701-1787; the Mineral Leasing Act of 1920, 30 U.S.C. §§ 181–287; the 1930 Right-of-Way Leasing Act, *id.* §§ 301–306; the Mineral Leasing Act for Acquired Lands, *id.* §§ 351–360; the Federal Oil and Gas Royalty Management Act of 1982, *id.* §§ 1701–1759; the Indian Mineral Leasing Act of 193, 25 U.S.C. §§ 396a–396g; and the Indian Mineral Development Act of 1982, *id.* §§ 2101–2108.").
49. *Id.* at *7.
50. *Id.*

rather, it simply requires "that certain specific lease provisions appear in all federal oil and gas leases for the safety and welfare of miners [and] the prevention of undue waste."[51] The District Court of Wyoming hence concluded, in no uncertain terms, that Congress did not intend to delegate the authority to regulate fracking to the BLM.[52] However, the decision was never appealed due to the Trump Administration's choice to withdraw the rule.

B. THE FEDERAL LAND POLICY MANAGEMENT ACT

FLPMA was passed in 1976 to "establish a public land use policy . . . and the guidelines for its administration [and] to provide for the management, protection, development, and enhancement of the public lands."[53] FLPMA expressly declares that, in managing public lands, the BLM should protect the quality of air, atmospheric, and water resources.[54] FLPMA also compels the BLM to manage public lands under the dual principles of "multiple use" and "sustained yield."[55] The definition of multiple use requires the BLM to manage public lands "so that they are utilized in the combination that will best meet the present and future needs of the American people."[56] This combination should take into account "the long term needs of future generations for renewable and nonrenewable resources," and is not necessarily the use combination that will lead to the greatest economic return.[57] Echoing the long view taken in the statutory definition of multiple uses, sustained yield requires the BLM to achieve and maintain "a high-level annual or regular periodic output" of the renewable resources on public lands in a manner consistent with multiple uses.[58]

FLPMA's definition of multiple use seems to be a clear expression of anti-waste sentiments. However, the Supreme Court has referred to multiple use management as "a deceptively simple term" that demands balancing fiercely competitive interests.[59] The text of FLPMA also explicitly states that future generations are not necessarily best served by a combination of practices that generate the greatest opportunity for economic return.[60]

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51. *Id.*
52. *See id.* at *12.
53. Federal Land Policy and Management Act of 1976, Pub. L. No. 94-579, 90 Stat. 2743 (codified as amended at 43 U.S.C. 35 §1701 et seq. (1976)).
54. *See* 43 U.S.C. § 1701(a)(8) (2012).
55. *Id.* § 1732.
56. *Id.* § 1702(c).
57. *Id.*
58. *Id.* §1702(h).
59. For an in-depth discussion on recent interpretations of multiple use and sustained yield, *see* New Mexico ex rel. Richardson v. Bureau of Land Mgmt., 565 F.3d 683, 690 (10th Cir. 2009); *see also* Norton v. S. Utah Wilderness Alliance, 542 U.S. 55, 58 (2004); Lujan v. Natl. Wildlife Fed'n., 497 U.S. 871, 877 (1990).
60. *See* 43 U.S.C. § 1702(c).

C. BLM VENTING AND FLARING RULE

The dawn of the Trump Era has meant the continual deployment of the Congressional Review Act ("CRA") and a targeted assault on the body of federal environmental law.[61] One rule that has managed to escape the claws of the CRA is the Obama-era VFR.[62] When it comes to fracking regulations put forth by the Obama administration, the VFR embodies a nexus between traditional notions of anti-waste sentiments and progressive environmental values.

The VFR was promulgated to "reduce waste of natural gas from venting, flaring, and leaks during oil and natural gas production activities on onshore Federal . . . leases."[63] The BLM cites three justifications for curtailing the waste. First, venting, flaring, and leaking create a substantial missed economic opportunity; in 2010, the Government Accountability Office reported that state, tribal, and federal taxpayers lost as much as $23 million in royalties from vented, flared, and leaked natural gas.[64] Second, BLM cited the risk of venting and flaring to local communities in close proximity to well sites, which may be harmed from the smog, particulate matter, and other toxic chemicals—such as the carcinogen benzene—arising from venting and flaring.[65] Finally, the BLM cited climate change concerns arising from the climate impact of methane, the "primary constituent" of natural gas which has a climate impact of roughly twenty-five times that of CO_2.[66]

Subpart 3179 of the VFR takes specific aim at waste prevention and resource conservation on all onshore federal and tribal oil and gas leases[67] by explicitly and narrowly defining unavoidably lost oil and gas as "produced oil or gas that is lost from [a discrete list] of operations and sources . . . that cannot be recovered in the normal course of operations, where the operator has taken prudent and reasonable steps to avoid waste."[68] Gas from fracking wells may only be flared or vented under conditions of unavoidable loss;[69] all other lost oil and gas is defined as "avoidable waste" and is subject to the provisions of the statute.[70] Such

61. Chelsea Harvey & Juliet Eilperin, *Senate Unexpectedly Rejects Bid to Repeal a Key Obama-era Environmental Regulation*, THE WASH. POST (May 10, 2017), https://www.washingtonpost.com/news/energy-environment/wp/2017/05/10/senates-poised-to-repeal-a-final-obama-era-rule-as-soon-as-wednesday/?utm_term=.d92306c4b3fa.

62. *Id*.

63. Waste Prevention, *supra* note 8, at 83,008.

64. DEPT. OF INT., FACT SHEET ON METHANE AND WASTE REDUCTION RULE (2016), https://www.doi.gov/sites/doi.gov/files/uploads/methane_waste_prevention_rule_factsheet.pdf.

65. Waste Prevention, *supra* note 8, at 83,009.

66. *Id*. The twenty-five times climate impact potential is measured over a 100-year period. If measured over a twenty-year period, methane has a climate impact of eighty-six times that of CO_2.

67. 43 C.F.R. § 3179.1. The stated purpose of subpart 3179.1 is to "implement statutes relating to prevention of waste from Federal and Indian . . . lease, conservation of surface resources, and management of the public lands for multiple uses as *sustained yields*" (emphasis added).

68. *See id*. § 3179.4.

69. *Id*. § 3179.6.

70. *Id*.

provisions include meeting a monthly "capture percentage" of avoidable losses and estimating or measuring all "volumes of gas vented or flared" on the lease site.[71]

Though not referencing the MLA directly, BLM stated it had "a statutory obligation to reduce waste of gas" when defending the changes made to the originally proposed rule.[72] In an unexpected twist, the Senate voted to essentially let this statutory obligation be borne out by not giving the VFR the CRA axe.[73] Although it remains to be seen if the rule will be rewritten by the Department of the Interior, industry groups have signaled a willingness to "work with the Interior Department on a targeted, meaningful solution."[74]

III. STATE-LEVEL EXPRESSIONS OF THE PUBLIC TRUST DOCTRINE

With little guidance at the federal level, state law is the next obvious choice for regulating the fracking industry. Similar to federal adoption of the public trust doctrine, some states have enshrined the doctrine in constitutional provisions or statutes, and some states have seen the public trust upheld as a result of common law.[75] The following section provides an overview of public trust provisions at the state level in an attempt to relate state-level regulatory structures with those found at the federal level. First, this section looks at constitutional provisions from Pennsylvania and Montana which imbed certain public trust principles within the state constitution itself. This section then examines judicial interpretations of the public trust doctrine in Louisiana and North Dakota.

A. THE PUBLIC TRUST DOCTRINE IN STATE CONSTITUTIONS

1. Pennsylvania

In 1971, Pennsylvania amended its state constitution to include the Environmental Rights Amendment ("Section 27"):

> "The people have a right to clean air, pure water, and to the preservation of natural, scenic, historic, and esthetic values of the environment. Pennsylvania's public natural resources are the common property of all the people, including generations yet to come. As trustee of these resources, the Commonwealth shall conserve and maintain them for the benefit of all the people."[76]

In *Robinson Township v. Pennsylvania*, Section 27 was front-row center to a dispute between municipalities and the state. The main issue before the court was

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71. *Id.* § 3179.7.
72. Waste Prevention, *supra* note 8, at 83,050.
73. Harvey & Eilperin, *supra* note 61.
74. *Id.* (quoting the president of the Independent Petroleum Association of America, Barry Russell).
75. Alexandra B. Klass, *Fracking and the Public Trust Doctrine: A Response to Spence*, 93 TEX. L. REV. 47, 53 (2015) [hereinafter Klass, *Fracking and the Public Trust*].
76. PA. CONST. art. I, §27.

whether Act 13, which would implement a uniform, statewide regulatory regime of the fracking industry, was constitutional. The citizens of Robinson township claimed that the Commonwealth, in an attempt to occupy the field of oil and gas regulation, barred the municipalities from upholding their fiduciary obligation as trustees under Section 27.[77] Petitioners argued that municipalities retain their constitutional obligation to evaluate short- and long-term cumulative effects of oil and gas operations, regardless of statutory enactments stating the contrary.[78]

Siding with the petitioners, the Pennsylvania Supreme Court interpreted Section 27 to codify common law public trust principles.[79] As a constitutional provision that "speaks on behalf of the people, to the people directly," the court declared Section 27 protects individual rights and is a self-executing provision.[80] These rights in turn place duties upon various actors within the political system to ensure the rights are upheld.[81] The Commonwealth violated these individual rights by abolishing the decision making authority of municipalities when it came to the placement and operation of oil and gas operations. The Pennsylvania Supreme Court concluded that the Commonwealth, as the fiduciary, "has a duty to act towards the corpus of the trust – the public natural resources – with prudence, loyalty and impartiality."[82] Finding public natural resources not only include state-owned lands but all resources that implicate the public trust (such as ambient air and surface and ground water), *Robinson* endows the Commonwealth with a sweeping obligation to balance the interests of future and present beneficiaries of these trust resources.

2. Montana

Pennsylvania is not alone in enshrining public trust principles into its state constitution.[83] Montana's constitution provides that all persons have an inalienable right to a "clean and healthful environment," and that the state and private parties have a duty to "maintain and improve a clean and healthful environment in Montana for present and future generations."[84] Although no fracking-related litigation has been brought under Montana's constitutional articles, the Montana Supreme Court has interpreted the state environmental rights amendment broadly, much in the same way that Pennsylvania's highest court did in *Robinson*.

In *Montana Environmental Information Center (MEIC) v. Department of Environmental Quality*, an environmental NGO brought suit in an attempt to

77. Robinson Twp., Washington Cty v. Comm., 623 Pa. 564, 629 (2013).
78. *Id*. at 629.
79. *Id*. at 673.
80. *Id*. at 684.
81. *Id*.
82. *Id*. at 655.
83. Klass, *Fracking and the Public Trust*, *supra* note 75, at 50.
84. MONT. CONST. art. II § 3; *id*. art. IX, §1.

prevent the discharge of mining contaminants into a river that would adversely impact water quality.[85] MEIC sought an injunction to suspend an exploration license which had already been issued by the Montana Department of Environmental Quality to the mining company.[86] The Montana Supreme Court found for petitioners, concluding the legislature violated the Montana constitution when it promulgated a blanket exception to nondegradation review which enabled the license to be granted to the mining company in the first place.[87]

In analyzing Article II, § 3 of the Montana constitution, the Montana Supreme Court concluded that the drafters intended to "provide protections which are both anticipatory and preventative."[88] There need not be a conclusive linkage to health or environmental degradation for an action to be unconstitutional under Article II, § 3.[89] Furthermore, the Montana Supreme Court concluded, in the same way the Pennsylvania Supreme Court concluded, that the rights contained within Article II, § 3 were self-executing and were expected to be upheld regardless of legislative action or citizen enforcement.[90]

Montana and Pennsylvania are unique amongst the states. First, the codification of public trust principles into their respective state constitutions enshrines the principle of intergenerational equity as amongst the highest laws of the land. Montana and Pennsylvania are committing themselves to ensuring that natural resources are preserved for present and future generations. Second, because both the Montana and Pennsylvania Supreme Courts found the environmental rights articles to be self-executing, the courts are providing a perpetual right of action for citizens, municipalities, or the state to enforce the protection of environmental rights.

Still, these provisions remain aspirational. The provisions themselves are, by necessity, quite broad and have seldom found success in being the sole cause of action.[91] The question then becomes whether these broad constitutional provisions can mutually reinforce legislation or common law claims, such as the public trust doctrine itself, to serve as a basis for fracking related litigation.

B. STATE-LEVEL INTERPRETATIONS OF THE PUBLIC TRUST DOCTRINE

Like Montana and Pennsylvania, North Dakota and Louisiana are two shale-rich states that have expressions of the public trust doctrine rooted in statutory and common law interpretations.[92] Unlike Montana and Pennsylvania, North

85. Mont. Envtl. Info. Ctr. v. Dep't of Envtl. Quality, 1999 MT 248, 296 Mont. 207, 988 P.2d 1236.
86. *Id.*
87. *Id.*
88. *Id.* at 1249.
89. *See id.* (concluding that the Montana Constitution "does not require that dead fish float on the surface of our state's rivers . . . before farsighted environmental protections can be invoked.").
90. *See* Klass, *supra* note 30, at 716.
91. Klass, *Fracking and the Public Trust*, *supra* note 75, at 42.
92. *Id.* at 53.

Dakota and Louisiana do not have environmental clauses and principles of intergenerational equity fixed within their respective state constitutions. Instead, the public trust doctrine has evolved in North Dakota and Louisiana through judicial interpretation and statutory construction.

1. Louisiana

Article IX of the Louisiana constitution provides the following:

> "The natural resources of the state, including air and water, and the healthful, scenic, historic, and esthetic quality of the environment shall be protected, conserved, and replenished insofar as possible and consistent with the health, safety, and welfare of the people. The legislature shall enact laws to implement this policy.[93]

In *Save Ourselves, Inc. v. Louisiana Environmental Control Commission*, the Louisiana Supreme Court held that Article IX imposes a duty of environmental protection on all state agencies and officials.[94] *Save Ourselves, Inc.* further established that Article IX, though not establishing environmental protection as an exclusive goal in its own right, imposes a balancing process by which environmental costs and benefits are weighed alongside economic and social factors.[95]

In applying the decision of *Save Ourselves* to subsequent cases, Louisiana courts have created a list of factors (known as the "IT factors") to help determine compliance with the public trust doctrine.[96] The Louisiana Court of Appeals summarized the IT factors in the following questions:

1. Have the potential and real adverse environmental effects [of the proposed action] been avoided to the maximum extent possible?
2. Does the cost of environmental impact outweigh social and economic benefit conferred by the project?
3. Are there alternative projects which would offer more environmental protection without unduly curtailing non-environmental benefit?
4. Are there alternative sites which would increase environmental protection without unduly curtailing non-environmental benefit?

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93. LA. CONST. art. IX §1.

94. Save Ourselves, Inc. v. La. Envtl. Control Com'n, 452 So. 2d 1152, 1156 (La. 1984).

95. Ryan M. Seidemann, *The Public Trust Doctrine and Surface Water Management and Conservation: A View from Louisiana* (40th Annual Conference on Environmental Law, Mar. 17–19, 2011) (discussing potential impacts of public trust doctrine on development of shale resources in Louisiana).

96. In the Matter of Rubicon, Inc., 670 So. 2d 475 (La. App. 1st Cir. 1996) (citation omitted). The name "IT Factors" originates from a prior case, *Blackett v. Louisiana Department of Envtl. Quality*, 506 So. 2d 749, 754 (La. App. 1st Cir. 1987), which dealt with a company called the IT Corporation.

> 5. Are there mitigating measures which would offer more protection for the environment without unduly curtailing non-environmental benefit?[97]

The IT Factors are aimed at the decisions of state agencies that implicate natural resource management and/or environmental matters.

Recently, the IT factors have been thrust back into the limelight. As Louisiana sits atop a portion of the Haynesville shale formation, water usage due to fracking related activities began to skyrocket in 2008.[98] On average, one Haynesville fracking site requires around 600,000 gallons of water through the course of the well's lifetime, whereas pre-fracking withdrawals were minimal.[99] When production of the Haynesville formation began in earnest, it was apparent that the vast withdrawals of water were not being subjected to IT factor analysis.[100] The response was a public outcry demanding the state of Louisiana consider competing public trust values when allocating permits that effect natural resources.[101]

As a result of the public criticism, the Louisiana Attorney General and Secretary of the Louisiana Department of Natural Resources ("LDNR") co-issued a guidance memorandum in February 2010.[102] The guidance memorandum asserted that "persons, with the possible exception of riparian land owners, are not authorized to remove state owned surface water without obtaining the prior written approval of the State and without paying a fair value."[103] According to Louisiana Assistant Attorney General Ryan Seidemann, "both [the Department of Justice and the LDNR] believed that they had an affirmative duty under the public trust doctrine . . . to ensure the consumptive uses of the State's water were being done in such a way as not to harm the environment or threaten the resource."[104]

The guidance memorandum led to the enactment of Act 955, which requires a scheme for consumptive use analysis of Louisiana's surface waters.[105] Conspicuously absent from Act 955 are enforcement mechanisms for the Attorney General and local law enforcement. Though lack of enforcement authority is still a hurdle Louisiana must overcome if a robust public trust regime is to be recognized, substantial progress has been made. Importantly, the recent progress seen in Louisiana is the result of public pressure arising from fracking-related activities in the Haynesville formation. The 2010 guidance memorandum and Act 955

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97. *Id*. (citing Blackett, 506 So. 2d at 754).
98. Seidemann, *supra* note 95.
99. *See id*.
100. *Id*.
101. *See* Klass, *Fracking and the Public Trust*, *supra* note 75, at 54.
102. *See* Memorandum to All State Surface Water Managers from Attorney General James D. "Buddy" Caldwell and LDNR Secretary Scott A. Angelle (Feb. 2, 2010), https://perma.cc/V2JF-MCDP.
103. *Id*.
104. Seidemann, *supra* note 95.
105. *See* LA. STAT. ANN. §§ 30: 961–963 (2017).

would likely not exist were it not for public pressure to apply the IT factors to surface water withdraw in the Haynesville formation.

2. North Dakota

Similar to Louisiana, North Dakota has seen advancement of the public trust doctrine through judicial interpretation. The North Dakota constitution does not contain specific provisions relating to state trusteeship of natural resources.[106] However, the public trust doctrine is expressed through two statutory provisions designating specific water sources as "public"[107] and calling for consideration of "future needs" when developing state water policy.[108]

Both surface water and groundwater are designated as public under North Dakota law.[109] The declared water resources policy of the state is that "the public health, safety, and general welfare . . . of all people of the state depend in large measure on the optimum protection, management and wise utilization of the water and related land resources of the state."[110]

The North Dakota Supreme Court was tasked with interpreting this statutory declaration in *United Plainsmen Ass'n v. North Dakota State Water Conservation Commission*. Petitioner, an NGO, sought to enjoin the issuance of future water permits to power plants until the state engineer developed a "comprehensive short- and long-term plan for conservation and development of the state's natural resources."[111] Petitioner claimed that both Section 61-01-26 of the North Dakota Century Code and the public trust doctrine created an obligation for the state to undertake precautions aimed at water conservation.[112] The court disagreed that the Code created an obligation to affirmatively address water conservation through a permit review program. However, the court did agree with the petitioner that the public trust doctrine "prohibits the state from alienating further quantities of public water without first performing an analysis of the present supply and future need."[113] Hence, the statutory designation of surface and groundwater as a public resource created an affirmative duty for the state to apply public trust principles to the usage of surface and groundwater.

Although both North Dakota and Louisiana have dealt with fracking-related litigation as it relates to groundwater usage, neither state has seen any attempt to

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106. Nancy Jean Strantz, *Rights to Ground Water in North Dakota: Trends and Opportunities*, 71 N.D. L. REV. 619, 638 (1995).

107. N.D. CENT. CODE ANN. § 61-01-01 (West 2017).

108. *Id.* § 61-01-26.

109. *Id.*§ 61-01-01.

110. *Id.* § 61-01-26(1).

111. United Plainsmen Ass'n v. N. Dakota State Water Conservation Comm'n, 247 N.W.2d 457, 459 (N.D. 1976).

112. *Id.* at 459–60.

113. Danielle Spiegel, *Can the Public Trust Doctrine Save Western Groundwater?*, 18 N.Y.U. ENVTL. L.J. 412, 451 (2010).

apply public trust principles to the waste of natural gas. Whether this is because there is a lack of public interest or lack of statutory framework is a hypothesis which remains untested. What is clear, however, is the public trust doctrine as applied to fracking is no longer a foreign concept in either state because of recent litigation.

IV. ANTI-WASTE SENTIMENTS IN STATE OIL AND GAS STATUTES

This Part examines anti-waste sentiment in state oil and gas laws from Colorado and Wyoming. These two states provide an interesting comparison of oil and gas regulation, because neither are inherently restrictive but have resulted in two different approaches within each state.

A. COLORADO

Established in 1927, Colorado's Gas Conservation Commission was tasked with adopting "reasonable rules and regulations as may be proper for the conservation of the gas resources of the state and the prevention of gas waste."[114] In 1951, the Colorado General Assembly passed the Oil and Gas Conservation Act ("OGCA"), changing the mandate—and the name—of the original commission. The newly formed Colorado Oil and Gas Conservation Commission ("COGCC") was created to promote the oil and gas industry in the face of seemingly limited recoverable petroleum resources.[115]

The statutory mandate of COGCC is to "foster the responsible, balanced development, production and utilization of the natural resources of oil and gas in the state of Colorado," and to "protect the public and private interests against waste in the production and utilization of oil and gas."[116] To fulfill COGCC's statutory mandate, the Colorado General Assembly vested authority in COGCC to promulgate rules and enjoin violations.[117] COGCC also retains jurisdiction over "all persons and property, public and private necessary to enforce the provisions of [the] Act."[118] The Colorado General Assembly's express creation of a regulatory body with extensive jurisdictional power to oversee the "responsible, balanced development, production and utilization" of natural gas embodies the ethos of the public trust doctrine.[119] However, the Colorado Supreme Court rejected the formal application of the public trust doctrine in the context of local fracking moratoria, concluding that the public trust doctrine is preempted by state law.[120] Notably, there are similarities that can be drawn between the BLM's adherence to public

114. *See* COLO. STAT. ANN. ch.118, §§ 66–67 (1935).
115. *See* COLO. REV. STAT. ANN. § 34-60-101 (West 2018).
116. *Id.* § 34-60-102(1)(a)(II).
117. *Id.* § 34-60-105.
118. *Id.*
119. *Id.* § 34-60-102(1)(a)(II).
120. *See* City of Longmont v. Colorado Oil & Gas Ass'n, 369 P.3d 573, 586 (2016).

trust principles and principles embedded in the Colorado Oil and Conservation Act.

Similar to the BLM's adherence to multiple uses as a management technique, COGCC has a statutory obligation to first identify and then balance competing interests in the development of natural gas. The inclusion of "balanced" in relation to "development" and "production" signals an acknowledgement that maximum natural gas extraction is not the ultimate mandate of COGCC.[121] Rather, natural gas extraction is an activity which must be undertaken "in a manner consistent with the protection of public health, safety, and welfare."[122] The inclusion of "responsible" and "balanced development" signals an obligation to develop oil and gas resources in a way that mirrors the "sustained use" ideology central to both BLM practices and the public trust doctrine.

The OGCA goes on to explicitly state that it is the intent of the Act to "permit each oil and gas pool in Colorado to produce up to its maximum efficient rate of production, subject to the prevention of waste."[123] Moreover, the Act declares it to be "in the public interest" to protect against waste.[124] And not just natural gas waste; "waste *in the production and utilization* of oil and natural gas."[125] The drafters of the Act could have limited the language to just "waste of oil and natural gas," but chose to include a more holistic, lifecycle approach to natural gas production and utilization. Further evidence of this general approach to anti-waste sentiment can be seen on COGCC's website. Under "Our Mission," COGCC states that "responsible development results in the prevention of waste."[126] The Colorado Supreme Court may have rejected the application by name, but the OGCA seems to embrace a few crucial concepts behind the public trust doctrine, namely preserving and protecting specific, public natural resources by encouraging responsible development.

B. WYOMING

Similar to Colorado, Wyoming has an Oil and Gas Conservation Commission ("WOGCC") that regulates fracking activities in the state.[127] However, the WOGCC has a substantially different mandate than its Colorado counterpart. The

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121. *See* Martinez v. Colorado Oil & Gas Conservation Comm'n, 2017 COA 37, 2017 WL 1089556, ¶ 19 (Colo. App. March 23, 2017).

122. *See id.* ¶¶ 22–23 (finding that the plain meaning of the statutory language "indicates that fostering balanced, nonwasteful development is in the public interest when that development is completed subject to the protection of public health, safety, and welfare.").

123. COLO. REV. STAT. ANN. § 34-60-102(1)(b) (West 2016).

124. *Id.* § 34-60-102(1)(a).

125. *Id.* § 34-60-102(1)(a)(II) (emphasis added).

126. *Our Mission*, COLO. OIL & GAS CONSERVATION COMM'N, http://cogcc.state.co.us/about.html#/about (last visited Apr. 24, 2018).

127. William J. Brady & James P. Crannell, *Hydraulic Fracturing Regulation in the United States: The Laissez-Faire Approach of the Federal Government and Varying State Regulations*, 14 VT. J. ENVTL. L. 39, 63 (2012).

Wyoming Oil and Gas Act ("WOGA") explicitly prohibits the waste of oil and gas and vests within the WOGCC the explicit authority to conduct investigations "to determine whether waste exists or is imminent."[128] The WOGCC in turn has promulgated Rules and Regulations for Oil Generations, which were "promulgated to prevent waste and to conserve oil and natural gas in the State of Wyoming."[129] The only type of waste the Wyoming Act concerns itself with is that of oil or gas. Nowhere in the Act are anti-waste sentiments that reach beyond natural gas to resources used during the production and utilization of natural gas.[130]

Regarding conservation of the public lands or resources, the Wyoming Act makes no reference to any type of preservation requirement or balancing. Rules promulgated by the WOGCC concerning pollution and "surface damage" are "intended to protect human health and the environment by avoiding contamination of the soils and the underground and subsurface waters at drilling or producing locations."[131] Compared with the broad range of impacts with which COGCC concerns itself, the WOGCC is primarily concerned with human health and environmental impacts that arise at the drilling location.[132]

Although there has been no litigation surrounding Wyoming's oil and gas regulations, it is worth noting that many Wyoming politicians have spoken out against the BLM venting and flaring rule addressed in Part II.[133] The WOGCC seems to be unequivocally charged with the prevention of waste and the conservation of oil and natural gas in the state of Wyoming, yet Wyoming Senators Mike Enzi and John Barrasso are against regulations that would ensure fracking waste is minimized on public lands.[134]

CONCLUSION: TWO IDEAS SERVING MANY ACTORS

As demonstrated above, the public trust doctrine and anti-waste sentiments are often relied upon during fracking-related regulation and litigation. At both federal and state levels, anti-waste sentiments are embodied in constitutional and statutory passages that call for the efficient use of resources. The public trust doctrine

128. WYO. STAT. ANN. §§ 30-5-102(a), 30-5-104(b) (West 2016).

129. 055-0001-2 WYO. CODE R. § 1(a) (LexisNexis 2018).

130. While "waste" is defined to include "underground or aboveground waste in the production or storage of oil, gas or condensate," the term "waste" is always preceded by "oil or gas" when used in the remainder of the statute. WYO. STAT. ANN. § 30-5-101(a)(i)(F) (2016).

131. 05-0001-4 WYO. CODE R. § 1(a) (LexisNexis 2018).

132. *See id.* § 1.

133. *See* Harvey & Eilperin, *supra* note 61 (quoting Senate Environment and Public Works Committee Chairman John Barrasso of Wyoming).

134. Press Release, Senator Enzi, Senator Enzi Statement on BLM's Final Venting and Flaring Rule (Nov. 15, 2016), http://www.pinedaleonline.com/news/2016/11/SenatorEnzistatement.htm; Press Release, Senator Barrosso, Barrosso Statement on BLM's Final Venting and Flaring Rule (Nov. 15, 2016), https://www.barrasso.senate.gov/public/index.cfm/news-releases?ID=4DB74A50-D6A9-4F3C-8EB3-AD7B93EEF6EA.

goes a step further, calling for the balancing of competing interests and considerations of intergenerational equity.

Together, the public trust doctrine and anti-waste sentiments can be employed to serve a wide array of interests, both in terms of regulation and fracking-related litigation. The spectrum ranges from encouraging the implementation of efficient production techniques—as illustrated by the BLM venting and flaring rule—to using the public trust doctrine and anti-waste sentiments to call for the more efficient allocation of water used during the fracking process—as illustrated by the Louisiana IT factors. Because both anti-waste sentiments and the public trust doctrine are accepted at federal and state levels in most fracking states, litigants and regulators are best served by understanding the synergy between the two concepts. Through the employment of both concepts, a stronger argument is made when seeking to protect and conserve resources used during fracking.

In the past, the idea of marrying the public trust doctrine to anti-waste sentiments may have seemed farfetched—and in certain locations, it still may be. But, in states like Colorado and Pennsylvania, there is strong public awareness of fracking issues, and state regulatory bodies have dealt with the issue before. This Note suggests that a coherent litigation strategy with roots in the public trust doctrine's acknowledgement of anti-waste sentiments could be a winning strategy in facing the litany of federal and state jurisprudence concerning fracking.