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Introduction

In October 2004, gas companies and residents of Dooralong, Autstralia met at a public meeting to discuss coalbed methane ("CBM")[1] development in the Dooralong and Yarmalong Valleys of Australia.[2] Local residents came to this meeting intent against CBM development. They feared that "gas mining [would] contaminate surrounding land and waterways, including the underground aquifer, and waste millions of litres of town water."[3] To demonstrate the reality of CBM mining's environmental threat, local residents produced "graphic evidence of massive environmental damage caused by [CBM drilling] operations in Wyoming and Montana."[4]

In the Powder River Basin of Wyoming and Montana, gas drillers have been exploiting CBM resources for almost ten years, with limited environmental review.[5] This CBM boom accelerated under pressure from the Bush administration to develop all domestic oil and gas reserves in order to limit dependence on foreign oil.[6] The Bureau of Land Management ("BLM") estimates

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1. "Coalbed methane is a form of natural gas found in coal seams." N. Plains Res. Council, Inc. v. U.S. Bureau of Land Mgmt., 298 F. Supp. 2d 1017, 1020 (D. Mont. 2003).

2. Mark Nolan, *Local Fury Over Gas Mining Plan*, DAILY TELEGRAPH (Sydney, Australia), Oct. 21, 2004, at 2.

3. *Id.*

4. *Id.*

5. *See, e.g.*, Alan C. Miller et al., *White House Puts the West on Fast Track for Oil, Gas Drilling*, L.A. TIMES, Aug. 25, 2004, at A1.

6. *See, e.g.*, Exec. Order No. 13,212, 66 Fed. Reg. 28,357 (May 18, 2001) (establishing a task force to find ways to expedite permit review for energy-related projects); Felicity Barringer, *Bush's Record: New Priorities in Environment*, N.Y. TIMES, Sept. 14, 2004, at A1 (describing the Bush administration's push to develop

that oil and gas companies will drill 165,000 new wells over the next twenty years in the Basin.[7] Extracting the CBM will not come without a cost to local populations. CBM extraction entails "dewatering" the land, which often leaves landowners' wells dry and exposes all Powder River Basin residents to possible water shortages.[8]

Just like Australian residents, residents from the Powder River Basin have also protested CBM development.[9] For several reasons, Powder River Basin residents are fighting an uphill battle. Most residents own only the surface estate of their land, which leaves the mineral estate for the government.[10] The mineral estate is the dominant estate, which legally places the reigns in the government's hands.[11] Because residents do not often have vested property rights that protect their land from environmental degradation, they have used environmental statutes to protect their interests and to limit the negative effects of CBM drilling.[12]

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domestic oil and gas reserves from public lands, most notably the Arctic National Wildlife Refuge).

7. Theo Stein, *Energy Project Draws Suit*, DENVER POST, May 23, 2004, at C2.

8. N. Plains Res. Council, Inc. v. U.S. Bureau of Land Mgmt., 298 F. Supp. 2d 1017, 1020 (D. Mont. 2003) (explaining that CBM extraction involves pumping available water from the coal seams, which also function as aquifers, thereby reducing the water pressure and allowing the gas to move towards the wellhead for collection).

9. Wealthy Bozeman, Montana residents rallied to postpone CBM development in their county. Blaine Harden, *In Montana, Gas Drilling Hits a Rare Roadblock*, WASH. POST, July 5, 2004, at A1. Traditionally conservative Westerners, such as gun owners, hunters, and fishermen, went to Washington to protest a Bush-backed energy bill that offered subsidies to CBM drillers. Mike Sorgahan, *Drilling Riles Hunters*, DENVER POST, Jan. 29, 2004, at A4.

10. Amoco Prod. Co. v. S. Ute Indian Tribe, 526 U.S. 865, 870 (1999).

11. Wyo. Outdoor Council v. Army Corp of Engineers, 351 F. Supp. 2d 1232, 1245 (D. Wyo. 2005) (citing Mingo Oil Producers v. Kamp Cattle Co., 776 P.2d 736, 741 (Wyo. 1989)).

12. *Wyo. Outdoor Council*, 351 F. Supp. 2d at 1245-46 (stating that "the surface owner has no right to deny access or surface disturbance that is 'reasonably necessary' to oil and gas production"). In addition to environmental litigation, some property owners execute damage agreements with gas drillers. *See* Joshua Skov & Nancy Myers, *Easy Money, Hidden Costs: Applying Precautionary Economic Analysis to Coalbed Methane in the Powder River Basin*, Science and Environmental Health Network, 31 (June 2004), *at* http://www.sehn.org/pdf/cbm.pdf (last visited Sept. 10, 2005) (describing a damage agreement as a legal agreement drafted to "address conflict between surface rights and CBM mineral rights"). This Article will not consider damage agreements. Damage agreements often provide inadequate protection from environmental degradation. The law does not require gas drillers to execute damage agreements with property owners. *Id.* at 30-32. Therefore, whether property owners execute a damage agreement rests on the property owner's legal savvy and the goodwill of the gas driller, neither of which is guaranteed. Ted Turner provides a notable exception to this generalization. His damage agreement with gas drillers

This Article begins by exploring the history of the Western split estate and by explaining more recent events that have led to the mass exploitation of CBM resources.[13] Part I examines the case law surrounding CBM development, which includes cases brought under the Clean Water Act, the National Environmental Policy Act, and the Freedom of Information Act.[14] Part I concludes by discussing how Hawaii used the public trust doctrine to ensure conservation of its water resources in a situation similar to that in Wyoming and Montana.[15] Part II analyzes the adequacy of statutory protection for local populations and their water resources and argues that current protection measures are inadequate.[16] This Article then considers the feasibility of using the public trust doctrine to protect Western water rights.[17] In conclusion, this Article finds that a statutory enactment of the public trust doctrine would improve water conservation and human well-being in the Western states, as it has done in Hawaii.[18]

I. Background

A. General History of the Split Estate

The Western split estate traces its roots back to the 1860s. During that time, Congress encouraged settlement of the West by enacting pro-settlement legislation.[19] In both the 1862 Homestead Act and the 1873 Coal Lands Act, Congress conveyed property to homesteaders in fee simple absolute,[20] reserving no part of the

constrained their ability to affect negatively the water or surface of his land in a variety of creative ways. Powder River Basin Resource Council, *VERMEJO PARK RANCH COALBED METHANE PROJECT MINERAL EXTRACTION AGREEMENT SUMMARY at* http://www.powderriverbasin.org/cbm/turners_vermejo_park_ranch.shtml (last visited Sept. 11, 2005).

13. *See infra* Part I.A-B.

14. *See infra* Part I.D.

15. *See infra* Part I.E.

16. *See infra* Part II.A-B.

17. *See infra* Part II.C.

18. *See infra* Part II.C.

19. *See* Homestead Act, ch. 75, 12 Stat. 392 (1862); Coal Lands Act, ch. 205 § 1, 13 Stat. 343 (1864); Coal Lands Act, ch. 279 § 1, 17 Stat. 607 (1873); Desert Land Act, ch. 107, 19 Stat. 377 (1877). Current versions are available at Unites States Code, title 43, sections 321-23.

20. *See* Jesse Dukeminier & James E. Krier, PROPERTY, 240 (5th ed. 2002) (describing fee simple absolute as an estate in land that "cannot be divested" and "will not end if any event happens in the future").

mineral estate to the United States.[21] Settlers could buy land under the Homestead Act for the price of "entry and cultivation," while land procured under the Coal Lands Acts cost settlers about ten to twenty dollar an acre.[22]

At the turn of the twentieth century this system came under fire. First, the West was experiencing a coal shortage, putting pressure on the government to encourage development of Western coal.[23] Second, many settlers simply failed to report the existence of coal on their lands, leaving the government with an empty hand.[24] In response to this crisis, President Theodore Roosevelt withdrew sixty-four million acres of public land from the Homestead Act and the Coal Lands Act, angering many settlers who had already begun working the land.[25] As a compromise, Congress passed statutes in 1909 and 1910 allowing settlers to remain on lands if they had already "made good-faith agricultural entries onto tracts later identified as coal lands,"[26] but subjected that grant to "a reservation to the United States of all coal in said lands, and the right to prospect for, mine and remove the same."[27] More than twenty million acres in the West currently exist under this framework.[28]

Oil and gas speculators gain access to these minerals owned by the United States by leasing a tract of land overlaying those resources.[29] The Federal Onshore Oil and Gas Leasing Reform Act provides that leases will be awarded to the highest bidder at an auction.[30] The BLM acts as the auctioneer in this process and decides which tracts will be open for bidding.[31]

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21. Amoco Prod. Co. v. S. Ute Indian Tribe, 526 U.S. 865, 868 (1999).

22. *Id.*

23. *Id.*

24. *Id.* at 869.

25. *Id.*

26. *Id.* at 870 (quoting 30 U.S.C. § 81 (1988)).

27. *Id.*

28. *Id.*

29. *See, e.g.*, 30 U.S.C. § 226(b) (1988). Whether the lessee gained a strong property right in the leased minerals is an open question. *See* George Cameron Coggins & Jane Elizabeth Van Dyke, *NEPA and Private Rights in Public Mineral Resources: The Fee Complex Relative?*, 20 ENVTL. L. 649, 666-70 (explaining that property interests in leased minerals were once strong but are now dependent on environmental review). Recent developments in the environmental review process have lead some to characterize a lessee's interest in leased minerals as merely "an exclusive procedural license" to mine. *Id.* at 670.

30. 30 U.S.C. § 226(b) (1988).

31. 43 C.F.R. § 3120.1-2 (2004) (originally enacted within the Mineral Leasing Act of 1920).

B. The Political Push to Develop CBM

Until recently, the United States did not lay claim to its reservation of rights to CBM in the Powder River Basin. CBM did not become a marketable product until the 1970s;[32] CBM drilling did not become profitable until the skyrocketing gas prices of 2002-2003.[33] Recent large-scale acquisitions in the oil and gas industry reflect the Powder River Basin's desirability. Wood MacKenzie, an energy research firm, reported that "[t]he Rocky Mountains is fast becoming a focal region for companies chasing growth."[34] The government refers to the Basin as a "Persian Gulf" of gas.[35]

The Bush administration has enthusiastically spurred the growth and development of CBM in the Rocky Mountains.[36] Within months of coming into office, President Bush issued several executive orders to expedite oil and gas development,[37] reasoning that increased CBM production would provide a short-term solution to a looming national energy crisis.[38] After failing several times to pass a new National Energy Policy through Congress, the

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32. Bobbier Johnson, *Coalbed Methane Ownership Rights in Wyoming*, 8 GREAT PLAINS NAT. RESOURCES J. 46, 49 (2004).

33. Felicity Barringer, *Bush's Energy Policy Lives Where the Deer and the Antelope Play*, N.Y. TIMES, Dec. 14, 2003, § 1, at 41.

34. *See, e.g.*, Sheila McNulty & James Politi, *Pioneer Agrees to Buy Evergreen in Dollars 2.1bn Deal US Energy Producers*, FIN. TIMES (London), May 5, 2004, at 29 (reporting that oil and gas companies with gas leases in the Powder River Basin are fast becoming a hot commodity for larger oil and gas companies seeking growth).

35. *Rocky Mountain Energy Council*, White House Task Force on Energy Project Streamlining *at* http://www.etf.energy.gov/pdfs/RMEC_WhitePaper.pdf (last visited Sept. 20, 2005) (quoting Colorado School of Mines geologist Fred F. Meissner).

36. *See, e.g.*, Joby Warrick & Juliet Eilperin, *Oil and Gas Hold the Reins in the Wild West: Land-Use Decisions Largely Favor the Energy Industry*, WASH. POST, Sept. 25, 2004, at A1 (original title: *Old and Gas Hold the Reins in the Wild West: Land-Use Decisions Largely Favor the Energy Industry*, corrected Sept. 26, 2004, at A2) (arguing that the Bush administration has made domestic energy development, specifically in the Rocky Mountains, a top priority and reporting that the Administration has "eased development restrictions" on more than sixty million acres of public lands for purposes such as drilling).

37. *See* Exec. Order No. 13,211, 66 Fed. Reg. 28,355 (May 18, 2001) (requiring agencies to explain delays in permitting energy projects to superior offices); Exec. Order No. 13,212, 66 Fed. Reg. 28,357 (May 18, 2001) (calling for agencies to expedite review of permits for energy-related projects and establishing an interagency task force to streamline the process).

38. *See* National Energy Policy Development Group, *Reliable, Affordable, and Environmentally Sound Energy for America's Future*, viii (May 2001), *available at* http://www.whitehouse.gov/energy (last visited Sept. 13, 2005) (describing the current energy crisis as the worst since the oil embargoes of the 1970s, and citing the cause as a "fundamental imbalance between supply and demand").

Administration "moved forward with a regulatory approach."[39] President Bush formed an Interagency Energy Task Force and its regional spin-off, the Rocky Mountain Energy Council, for the sole purpose of speeding domestic energy development.[40] These bodies coordinate agency decisions in order to quickly authorize energy projects such as new gas wells.[41] The Administration also created new incentives to issue permits for new gas wells.[42] Interior Secretary Gale Norton "challenged Wyoming BLM workers to triple the number of drilling permits approved annually, from 1,000 to 3,000 a year."[43] Furthermore, the federal government supports CBM development through subsidies.[44]

The federal government's encouragement of energy development in the Rocky Mountains has worked, possibly at the expense of careful environmental review.[45] Indeed, its strategy has vastly increased the number of wells in the Powder River Basin and throughout the Rocky Mountains.[46]

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39. Craig Welch, *For Good or Ill, Bush Clears Path for Energy Development*, SEATTLE TIMES, Sept. 26, 2004, at A22 (quoting James Connaughton, chairman of the White House Council on Environmental Quality and the Interagency Energy Task Force); *see also id.* (quoting Dave Alberswerth, former Clinton adviser) ("What they've done, successfully, over the last 3-1/2 years is embed, in obscure documents, some pretty dramatic changes in direction . . . . They haven't changed any statutes. They haven't changed any regulations. But they've changed a whole lot of practices and policies without any real public scrutiny.").

40. *See* Exec. Order No. 13,212, 66 Fed. Reg. at 28,357; White House Task Force on Energy Project Streamlining; Public Organization Meeting of the Proposed Rocky Mountain Energy Council, 68 Fed. Reg. 44,950 (July 31, 2003); Skov & Myers, *supra* note 12, at 22.

41. *Id.*

42. Warrick & Eilperin, *supra* note 36, at A6 (describing the BLM and Interior officials recent practice of offering "awards and incentives to field office employees who work 'diligently' and 'creatively' to speed approval of new drilling permits").

43. *Id.*; *cf.* Welch, *supra* note 39 (reporting that the BLM grants more than eighty percent of requests for waivers of seasonal drilling bans).

44. Skov & Myers, *supra* note 12, at 18-22 (calculating that the Powder River Basin gas industry will save between $707 million and $1.65 billion over the next five years due to federal tax breaks and subsidies, both direct and indirect); Mike Soraghan, *Scramble for Energy*, DENVER POST, Dec. 21, 2003, at A1 (reporting that CBM drillers may earn a new three billion dollar tax break).

45. *See, e.g.*, Miller et al., *supra* note 5, at A14 ("'All we do is issue permits for oil and gas,' said a career BLM staff member in a Western office who spoke on the condition that he not be named. 'We're told to follow new deadlines that are totally driven by industry. We're not given time to do adequate [environmental reviews] and to consider the consequences of our decisions.'").

46. Stein, *supra* note 7 and accompanying text; Welch, *supra* note 39 ("[T]he number of new oil and natural-gas drilling permits yearly on federal lands under President Bush is [sixty] percent higher than it was under President Clinton."); Editorial, *Powder River Showdown*, N.Y. TIMES, Aug. 4, 2002, § 4, at 12 ("The administration's plans for the basin are breathtakingly ambitious. It aims to sink 51,000 coal bed methane wells in Wyoming over 10 years, and 26,000 more in

C. The Environmental Impacts of CBM Drilling

Drilling CBM wells comes at a heavy cost to surface estate owners with CBM wells on their land and to entire populations in the Powder River Basin. When an oil company extracts CBM from the ground, it also extracts equal or greater amounts of water.[47] A technical report prepared for a Montana EIS found that CBM development placed numerous private, public, and irrigation wells at risk of "drawdown."[48] Even wells near but outside of a CBM field are subject to drawdown.[49] The arid climate of the Powder River Basin amplifies this threat of depleting limited water supplies.[50] The Montana BLM acknowledges that springs and wells throughout Southeastern Montana will dry up within the next twenty years, meaning that "agriculture . . . or CBM development [will] need to be limited."[51] The Montana Department of Natural Resources concluded that CBM drilling could reduce water levels in targeted aquifers for long periods of time.[52]

Aside from depleting groundwater, CBM extraction also threatens surface water. For ranchers, this means endangering irrigation supplies as well as drinking water.[53] CBM threatens surface water because CBM wastewater often contains salts and metals "that can degrade soil and kill irrigated crops and native plants."[54] CBM wells can also directly pollute rivers, lakes, or

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Montana.").

47. *See* Brief for Appellant, N. Plains Res. Council, Inc. v. U.S. Bureau of Land Mgmt., No. 04-35002 (D. Mont. March 30, 2004) (explaining that the Montana BLM estimates that CBM drillers will extract fifty-eight billion cubic feet of water over the next twenty years); *see also* Skov & Myers, *supra* note 12, at 3 (stating that as much as eleven trillion gallons of water could be lost "if current expansions are carried out").

48. J. Daniel Arthur et al., *Coal Bed Methane in the Powder River Basin of Montana*, 17-18, http://www.all-llc.com/CBM/cbm_technical_report.pdf.

49. *See id.* at 17.

50. *See, e.g.*, Blaine Harden & Douglas Jehl, *Ranchers Bristle as Gas Wells Loom on the Range*, N.Y. TIMES, Dec. 29, 2002, at 22 (noting that the Powder River Basin is "an arid region prone to persistent drought").

51. Brief for Appellant, *supra* note 47, at 5 (quoting a report from the Montana BLM).

52. *Id.*; *see also* Skov & Myers, *supra* note 12, at 3 (quoting that an estimated 5,000 groundwater wells could go dry "as the water table drops up to 600 ft. in CBM extraction regions"); Harden & Jehl, *supra* note 50, at 1 (reporting on one rancher who already hauls in water because CBM drillers depleted the property's well).

53. *See* Miller et al., *supra* note 5, at A14 ("Ranchers in the Powder River area . . . have complained that drinking water from their wells has been fouled . . . .").

54. Brief for Appellant, *supra* note 47, at 5; *see also* N. Plains Res. Council, Inc. v. Fidelity Exploration and Dev. Co., 325 F.3d 1155 (9th Cir. 2003) (holding that

wells when methane escapes into water or soil rather than into the wellhead itself.[55] Despite the existence of an Interagency Task Force to coordinate agency decisions, the permitting agencies have required very little environmental review of drilling projects.[56] In fact, most evidence suggests that the government proceeded without considering the environmental effects[57] and that it has used any and all means to accelerate gas extraction.[58] Over the past few years, the Administration has struggled with the EPA over the ability to use hydraulic fracturing, a practice of injecting high pressure fluids into the ground to fracture rocks containing CBM or natural gas in order to gain access to the resource.[59]

Economic benefits of CBM extraction partially counter the environmental degradation of mining.[60] Because of CBM extraction and high gas prices, Wyoming currently has the "largest surplus in the nation as a percent of budget" and expects to collect $1.2 billion more in tax revenues than previously projected.[61] Regardless of this surplus, it is unclear if the money will have a long-term impact on Wyoming's welfare, or if it will improve the

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CBM wastewater is a pollutant under the Clean Water Act).

55. *See, e.g.*, Swartz v. Beach, 229 F. Supp. 2d 1239, 1247, 1261 (D. Wyo. 2002) (finding that sufficient facts were alleged in a claim charging that the discharge of CBM wastewater into a local creek destroyed water for irrigation purposes and surrounding land); Harden & Jehl, *supra* note 50, at 1 (describing that the Bell Fourche River "bubbles like champagne" as it travels through ranchland dotted with gas wells).

56. *See, e.g.*, Miller et al., *supra* note 5, at A12 (using interviews with BLM workers to describe the deterioration of the environmental review process).

57. *See* Pennaco Energy, Inc. v. U.S. Dep't of Interior, 377 F.3d 1147, 1158 (10th Cir. 2004) (pointing out that the BLM ignored evidence that "existing NEPA analyses were not adequate to address the impacts of CBM development" and that CBM production threatened groundwater more than typical oil and gas wells).

58. *See* Tom Hamburger & Alan C. Miller, *A Changing Landscape: Haliburton's Interests Assisted by the White House*, L.A. TIMES, Oct. 14, 2004, at A1 (reporting that the Bush administration advocated for environmental acceptance of hydraulic fracturing, a drilling technique that increases gas production, despite the fact that the EPA, the Safe Drinking Water Act, and the Eleventh Circuit have limited its use); Tom Hamburger & Alan C. Miller, *Investigation of Drilling Regulations is Urged*, L.A. TIMES, Oct. 15, 2004, at A15 (reporting that "five members of Congress called . . . for investigations into the Bush [a]dministration's regulation of hydraulic fracturing, an oil and gas drilling practice pioneered by Haliburton").

59. Hamburger & Miller, *Investigation of Drilling Regulations is Urged, supra* note 58, at A25 (reporting that a June 2004 EPA report sanctioning hydraulic fracturing for CBM drilling triggered attacks from EPA insiders including a whistleblower who stated that hydraulic fracturing posed a danger to public health and safety).

60. *See* Arthur et al., *supra* note 48, at 16 (noting that CBM development should stimulate the Montana economy).

61. Kirk Johnson, *Energy Boom Has Wyoming Coffers Overflowing*, N.Y. TIMES, Mar. 4, 2004, at A16.

standard of living of individual citizens.[62] Typically in Western energy booms, the money dries up shortly after the coal or oil is extracted, leaving locals with few long-term benefits.[63] One Wyoming economist explained that during boom periods towns typically expand services for the community.[64] Then, during bust periods, towns can no longer afford these services (such as health insurance or retirement benefits for county employees) and politicians "are caught in a struggle to maintain services while facing a continuously shrinking budget."[65]

Recently, one hundred Western economists wrote to President Bush and the Western governors with this concern in mind.[66] The economists warned that leaders should not invest heavily in extractive industries because extractive industries degrade the environment, and the environment is necessary for economic prosperity in the West.[67] Economists warned that these industries have a limited ability to create new jobs and increase local incomes.[68]

D. Cases Brought by Powder River Basin Residents Addressing CBM Development's Environmental Issues

Most case law surrounding CBM reflects the struggle between landowners and oil companies to determine ownership of CBM gas.[69] Comparatively few cases actually wrestle with issues

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62. *See* Skov & Myers, *supra* note 12, at i (noting that oil and gas companies from outside of Montana and Wyoming, with no vested interest in the area, are reaping the profits); McNulty & Politi, *supra* note 34, at 29 (describing the exploitation of CBM by international conglomerates). In a recent memorandum to the Montana BLM, a consulting company described the Montana portion of the Basin as a rural, agricultural area that overlaps areas with significant minority populations, three Indian reservations, and counties with elevated poverty levels. Arthur et al., *supra* note 48, at 15. The Wyoming portion of the Basin is also primarily rural and agricultural, with a total population of 38,436, or eight percent of Wyoming's total population. Memorandum from Watts and Associates, Inc. to Wyoming Water Development Commission (February 2002), http://waterplan.state.wy.us/plan/powder/techmemos/popproj.pdf.

63. *See* Johnson, *supra* note 61, at A16 (describing past, short-lived booms in Wyoming).

64. James G. Thomson & Douglas Bryant, *Fiscal Impact in a Western Boomtown: Unmet Expectations*, 3 IMPACT ASSESSMENT BULLETIN 3, 18-19 (1992).

65. *Id.* at 19.

66. *A Letter from Economists to President Bush and the Governors of Eleven Western States Regarding the Economic Importance of the West's Natural Resources* (Dec. 3, 2003) (Ed Whitelaw, ed.), http://www.econw.com/pdf/12303.pdf.

67. *Id.* at 2.

68. *See id.* ("[I]f a community's natural environment is degraded, it has greater difficulty retaining and attracting workers and firms.").

69. *See, e.g.*, Amoco Prod. Co. v. S. Ute Indian Tribe, 526 U.S. 865, 873-79

of environmental damage or surface owners' rights, possibly reflecting the lack of accessible statutory protection.[70]

1. Cases Brought Under the Clean Water Act

The Clean Water Act[71] ("CWA") sets water quality standards with the goal of preserving American waters for beneficial uses.[72] For example, it sets a maximum amount of pollution that can be discharged into waters and expressly protects surface waters from excess pollution.[73] Nonetheless, the CWA does not unequivocally protect groundwater from either pollution[74] or excessive pumping.[75] Instead, state laws separately govern the use of groundwater. For example, Wyoming requires gas drillers to apply for permits before dewatering CBM wells[76] and Montana has declared the Powder River Basin to be a "controlled groundwater area," which requires CBM operators to propose mitigation measures for damage, among other things.[77]

When agencies fail to enforce the CWA, citizens can file claims under the CWA's "citizen suit" provision,[78] which is

(1999) (addressing CBM ownership within federal coal seams); Johnson, *supra* note 32, at 46, 49 ("[T]he primary legal controversy involving CBM is the ownership of gas . . . .").

70. *See infra* Parts I.D.1-3 (describing six cases that delve into environmental issues and surface owner rights).

71. 33 U.S.C. § 1251 (1972) (amended 1977, renumbered 1987).

72. 33 U.S.C. § 1313(c)(2)(A) (2004).

73. *See* Gary Bryner, *Coalbed Methane Development in the Intermountain West: Producing Energy and Protecting Water*, 4 WYO. L. REV. 541, 547 (2004).

74. Thomas D. Marks, *Toward a National Groundwater and Future Courses of Action*, 61 FLA. B.J. 10, 11-12 (1986) ("EPA has neither established the groundwater quality 'criteria' or 'information' mandated in § 304(a), nor has it sought to regulate groundwater quality at the federal level or to require it at the state level. Ion [sic] addition, EPA has rejected the idea of requiring National Pollutant Discharge Elimination System (NPDES) permits under 33 U.S.C. § 1342 for groundwater pollution activities, citing 'substantial legal problems' in applying the system. Therefore, the Clean Water Act, as presently interpreted and enforced, is insufficient to protect groundwater resources.").

75. *See* 33 U.S.C. §§ 1251-1387 (2004) (refraining from explicit regulation of groundwater).

76. WYO. STAT. ANN. § 41-3-905 (2004).

77. Mont. Department of Natural Resources, *Final Order In the Matter of the Designation of the Powder River Basin Controlled Groundwater Area* (1999), http://www.dnrc.state.mt.us/wrd/final%20order.htm.

78. *See, e.g.*, 33 U.S.C. § 1365(a) (1972) (amended 1987); Leonard O. Townsend, *Hey You, Get Off [of] My Cloud: An Analysis of Citizen Suit Preclusions Under the Clean Water Act*, 11 FORDHAM ENVTL. L.R. 75, 77-78 (1999) ("[T]he 'Citizen Suit' provision allows private citizens to initiate proceedings against a violator or against the Administrator if the Administrator fails to perform his statutory duties. The provision for citizen suits is not unique to the CWA; it is found in various forms within many statutes having environmental significance.").

intended to play second fiddle to "agency enforcement."[79] In the Powder River Basin, plaintiffs successfully used the CWA to protect themselves against inappropriate discharge of CBM wastewater.[80] In *Swartz v. Beach*,[81] the plaintiff, a rancher downstream from a CBM operation, brought suit alleging violations of the CWA and both physical and regulatory takings of his land.[82] Swartz originally brought suit because wastewater from a CBM operation flowed downstream to his land where it "caused permanent soil damage because of the elevated salinity and sodium absorption ratio."[83] The CBM operation used so much water that it decreased the stream flow in Wildcat Creek, his main source of irrigation water.[84] Consequently, Swartz did not irrigate his hay meadows in 2000 or 2001 because of either lack of water or degraded water quality.[85]

The Tenth Circuit found that Swartz alleged "sufficient facts to state a claim for a physical and regulatory taking and those claims [were] ripe for review."[86] The court found that the defendants' discharge of wastewater onto Swartz's ranch would amount to constructive possession of Swartz's land, thereby fulfilling the requirements of a physical taking.[87] In the alternative, the court found the plaintiff's claim alleging a regulatory taking valid because there were sufficient facts alleging that the defendants destroyed economically viable uses of the land by "failing to enforce federal and state laws"[88] and that their inaction "failed to advance a legitimate government interest."[89] Both the physical and regulatory taking of Swartz's ranch

79. Townsend, *supra* note 78, at 92 ("[T]he legislative history of citizen suits notes that 'the great volume of enforcement actions [are intended to] be brought by the State and that citizen suits are proper only if the Federal, State, and local agencies fail to exercise their enforcement responsibility.' Thus, a claimed lack of diligence must rise to the level of a catastrophic failure by the governing agency for a citizen-plaintiff to defeat preclusion based only on the diligence prong under the CWA.").

80. *See* N. Plains Res. Council, Inc. v. Fidelity Exploration and Dev. Co., 325 F.3d 1155, 1157 (9th Cir. 2003) (finding CBM wastewater a pollutant under the CWA).

81. 229 F. Supp. 2d 1239 (D. Wyo. 2002).

82. *Id.* at 1240.

83. *Id.* at 1248.

84. *Id.*

85. *Id.*

86. *Id.* at 1267.

87. *Id.* at 1261.

88. *Id.* at 1262-63.

89. *Id.*

stemmed from the government's failure to enforce the CWA.[90] The finding for Swartz entitled him to just compensation for the land taken by the government.[91] However, this finding did not guarantee the eradication of pollution or the rehabilitation of his land.[92]

A recent case in Wyoming also resolved a dispute over the validity of a permit issued under the CWA, this time to discharge "dredge and fill material," which is used to contain the produced CBM water in reservoirs.[93] The Army Corps of Engineers issued a general permit allowing gas drillers to discharge "dredge and fill material" throughout the entire region.[94] Such a permit can be granted only after the agency determines that the permit will result in only minimal environmental damage.[95] In this case, the court found that the Army Corps of Engineers failed to consider the effects the permit would have on aquatic life, in violation of its own guidelines.[96] This failure resulted in a violation of the CWA, which allows for a general permit only if it will have a minimal cumulative adverse effect on the environment."[97]

The facts of *Northern Plains Resource Council, Inc. v. Fidelity Exploration and Development Co.*[98] replayed the same basic facts of *Swartz*.[99] In *Fidelity*, the defendant discharged "unaltered groundwater produced in association with gas extraction"[100] into Montana's Tongue River and Squirrel Creek, thereby destroying the downstream water for irrigation. The Ninth Circuit found this CBM wastewater to be a pollutant within the meaning of the CWA[101] and the cause of the Tongue River's pollution.[102]

While these rulings require CBM producers to comply with

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90. *Id.* at 1261-62.

91. U.S. CONST. amend. V (guaranteeing that private property shall not "be taken for public use, without just compensation").

92. *See* Corbello v. Iowa Prod., 850 So. 2d 686, 700 (La. 2003) ("The citizens of this state are better served by having an expert regulatory agency enforce the environmental statutes rather than waiting for the private citizen to bring individual actions for damages and restoration, which are no guarantee that the pollution will be eradicated.").

93. Wyo. Outdoor Council v. Army Corps of Engineers, 351 F. Supp. 2d. 1232, 1237 (D. Wyo. 2005).

94. *Id.*

95. 33 U.S.C. § 1344(e)(1) (2001).

96. *Wyo. Outdoor Council*, 351 F. Supp. 2d. at 1257.

97. 33 U.S.C. § 1344(e)(1).

98. 325 F.3d 1155, 1155-60 (9th Cir. 2003).

99. *See id.* at 1158-60.

100. *Id.* at 1157-58.

101. *Id.* at 1157.

102. *Id.* at 1162.

the CWA, they do not mean that CBM producers can no longer discharge CBM wastewater into streams.[103] Rather, these rulings mean CBM producers will need to obtain a National Pollution Discharge System (NPDES) permit if they trigger the CWA (by discharging a pollutant into a stream, drainage, or a storage pond).[104] A CBM producer can acquire the NPDES permit from the EPA.[105]

2. Cases Brought Under the National Environmental Policy Act

Both Wyoming and Montana plaintiffs have used the National Environmental Policy Act[106] ("NEPA") to challenge agency decisions expanding CBM development.[107] NEPA requires that an agency such as the BLM take a "hard look" at environmental impacts before deciding upon a course of action.[108] The agency can satisfy the "hard look" requirement by performing proper environmental review of a project before making a decision.[109]

People who are concerned with CBM development in the Powder River Basin question whether the BLM really gave CBM's environmental effects a "hard look."[110] BLM officers in both Wyoming and Montana claimed to satisfy NEPA's requirements by basing their CBM expansion decisions on various environmental impact statements ("EISs") or resource management plans created between 1984 and 1999.[111] However, these studies were all

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103. *See* Jan G. Laitos & Elizabeth H. Getches, *Multi-Layered, and Sequential, State and Local Barriers to Extractive Resource Development*, 23 VA. ENVTL. L.J. 1, 23-24 (2004) (explaining the process by which CBM producers may request permits allowing them to continue the discharge of CBM wastewater).

104. *See id.* (emphasizing that the increased regulatory burdens present a mess of red tape for CBM producers).

105. *Fidelity*, 325 F.3d at 1159.

106. 42 U.S.C. §§ 4321-70 (2000).

107. *See* Pennaco Energy, Inc. v. U.S. Dep't of the Interior, 377 F.3d 1147 (10th Cir. 2004); N. Plains Res. Council, Inc. v. U.S. Bureau of Land Mgmt., 298 F. Supp. 2d 1017 (D. Mont. 2003).

108. *Pennaco*, 377 F.3d at 1150 (describing that the "hard look" test "does not impose substantive limits on agency conduct" and allows agencies substantial freedom in deciding whether to prepare an EIS and in actual preparation and interpretation of an EIS).

109. *Id.*

110. *See id.*; *N. Plains Res. Council*, 298 F. Supp. 2d at 1019.

111. *Pennaco*, 377 F.3d at 1152 (noting that the manager of the Buffalo BLM office concluded that two existing EISs from 1985 and 1999 satisfied the NEPA requirements); *N. Plains Res. Council*, 298 F. Supp. 2d at 1021 (stating that the Montana BLM based its decision to permit eleven CBM wells on a 1994 EIS that the BLM itself considered possibly inadequate).

conducted before CBM drilling became prevalent in the Powder River Basin and did not consider CBM drilling's impacts separately from impacts caused by other oil and gas drilling.[112] Because common oil and gas drilling do not require extensive mine dewatering, they do not threaten water as much as CBM drilling.[113] Thus, oil and gas studies do not give BLM officials a thorough enough understanding of CBM drilling.

In *Pennaco v. United States Department of the Interior*,[114] the Tenth Circuit held that CBM development posed unique hazards to both air and water and that previous environmental review (the 1984 and 1999 studies) was not sufficient.[115] Consequently, the court upheld an Interior Board of Land Appeals decision, which required the BLM to perform supplementary EISs before auctioning more oil and gas leases.[116] This decision ensures that the BLM will at least formally consider CBM drilling's impacts on water before expanding CBM operations in Wyoming.[117] The *Wyoming Outdoor Council* court followed the precedent set by *Pennaco* when it invalidated a general permit that failed to comply with NEPA.[118] It held that the permit could not possibly comply with NEPA because the Army Corps of Engineers did not evaluate the cumulative impacts of the general permit it issued for the discharge of dredge and fill material.[119]

In Montana, the BLM found more support for its permitting decisions. In *Northern Plains Resource Council v. U.S. Bureau of Land Management*,[120] a Montana district court held that the BLM "was not required to perform a new EIS prior to issuing the oil and gas leases, nor was it required to halt issuance of the leases pending completion"[121] of an EIS underway at the time of decision. At the time this Article was written, four lawsuits were pending in the Montana district courts questioning the sufficiency of the most recent EIS conducted by the oil and gas industry.[122] Plaintiffs

112. *N. Plains Res. Council*, 298 F. Supp. 2d at 1020-21; *Pennaco*, 377 F.3d at 1153 (noting CBM drilling's profound effects on water and air quality).

113. *Pennaco*, 377 F.3d at 1158.

114. *Id.* at 1147.

115. *Id.* at 1159.

116. *Id.* at 1150.

117. *Id.* at 1153-54.

118. Wyo. Outdoor Council v. Army Corps of Engineers, 351 F. Supp. 2d. 1232, 1242 (D. Wyo. 2005) (writing that the permit must reflect consideration of the cumulative impacts to the "natural and physical environment").

119. *Id.* at 1243.

120. 298 F. Supp. 2d 1017 (D. Mont. 2003).

121. *Id.* at 1024.

122. *Id.* at 1021-22 n.5.

brought these suits under the Administrative Procedure Act's general standing authorization,[123] since NEPA does not contain a specific citizen suit provision, as does the CWA. However, after the Supreme Court decided *Lujan v. Defenders of Wildlife,*[124] plaintiffs have found it more difficult to obtain standing.[125] With more difficulty establishing standing, plaintiffs cannot easily challenge agency decisions.[126]

3. Cases Brought Under the Freedom of Information Act

Environmental groups have also used the Freedom of Information Act[127] ("FOIA") as a tool to protect the Powder River Basin from opaque political processes and arguably negative political decisions. One recent FOIA request resulted in protracted litigation surrounding CBM development.[128] The FOIA claim alleged that Deputy Secretary of the Interior Stephen J. Griles failed to keep his private interests separate from his public duties.[129] As Deputy Secretary of the Interior, "Griles is responsible for managing public lands, including approximately seven hundred million acres of subsurface mineral rights."[130] Griles' former positions as an executive for three separate energy companies and his continued communications with these companies triggered suspicion that he did not make impartial decisions about management of public lands with regard to oil and gas leases.[131] Griles' criticism of an Environmental Protection Agency EIS that ranked CBM production as an environmental hazard raised hackles in the environmental community.[132]

After the Department of the Interior ("DOI") and the Office of Government Ethics refused to comply fully with plaintiffs' request for documents pertaining to Griles' financial dealings with his former employers, the plaintiffs filed suit.[133] They achieved a

123. *See* 5 U.S.C. § 702 (2005).

124. 504 U.S. 555 (1992).

125. In *Lujan*, the Court reinforced the requirement that plaintiffs experience an imminent and concrete injury. *Id.* at 560; *see also* Daniel R. Mandelker, NEPALL 2d § 4:14 (2004).

126. *See Lujan*, 504 U.S. at 560.

127. 5 U.S.C. § 552 (2000).

128. Defenders of Wildlife v. U.S. Dep't of Interior, 314 F. Supp. 2d 1 (D.D.C. 2004).

129. *Id.* at 5-6.

130. *Id.* at 5.

131. *Id.* at 5-6.

132. *Id.* at 5-7.

133. *Id.* at 7.

limited victory when the D.C. Circuit ordered the defendants to consent to a more thorough search and to forward the plaintiffs' FOIA request to the higher-up offices.[134] This decision gave plaintiffs easier access to documents that could clarify the DOI's decision-making process, but did not produce any substantive change in CBM policy.[135]

E. People Facing Similar Environmental Troubles Have Found Shelter in the Courts and in the Law

The island of Oahu provided the setting for a struggle over water resources similar to the one in the Powder River Basin. In *In re Water Use Permit Applications*[136] *(Waiahole)*, Hawaiian sugar farmers, and some others, were watering their sugar crops with a combination of ground and surface water that nineteenth century sugar growers had channeled from Oahu's Ko'olau Mountain Range to the island's dry central plain.[137] This diversion of water minimized the ability of local streams to support aquatic life and was suspected of destroying local fisheries.[138] Consequently, the Hawaii Commission on Water Resources limited the amount of water available for private use, thereby sparking a dispute.[139]

The Hawaii Supreme Court resolved this dispute by looking to the public trust doctrine, which Hawaiians voted to include within the Hawaii Constitution in 1978.[140] The public trust-based provisions provide that "[f]or the benefit of present and future generations, the state shall conserve and protect Hawaii's natural beauty and all natural resources . . . including water."[141]

This Hawaiian innovation derived from a majority opinion by Justice Field in *Illinois Central Railroad Co. v. Illinois*.[142] Justice Field stated that "[t]he State can no more abdicate its trust over property in which the whole people are interested . . . so as to

134. *Id.* at 23.

135. *Id.*

136. 9 P.3d 409 (Haw. 2000).

137. *Id.* at 423.

138. *Id.*

139. *Id.*

140. *See* C. Ede, *He Kanawai Pono no ka Wai (A Just Law for Water): The Application and Implications of the Public Trust Doctrine in* In re Water Use Permit Applications, 29 ECOLOGY L.Q. 283, 291 (2002).

141. HAW. CONST. art. XI, § 1 (2003); *see* HAW. CONST. art. XI, § 7 (2003) (providing specifically for preservation of water resources).

142. 146 U.S. 387 (1892) (holding that the state could not relinquish its interest in the Chicago Harbor to the Illinois Central Railroad Company through the Lake Act of 1869).

leave them entirely under the use and control of private parties . . . than it can abdicate its police powers in the administration of government and the preservation of peace."[143] The public trust doctrine languished quietly on the pages of Field's opinion until 1970 when a popular article by Joseph Sax brought it to life once again,[144] arguing for its use "as a general weapon for the budding environmental movement."[145]

Following Sax's article, the public trust doctrine emerged as a useful tool in several environmental disputes. Probably the most notable case relying on the public trust doctrine is *National Audobon Society v. Superior Court of Alpine County*,[146] more commonly known as the "*Mono Lake*" case. Just like the courts in Oahu and the Powder River Basin, the *Mono Lake* court confronted a dispute over water allocation. The court resolved the dispute by limiting private rights to the water and held that a party cannot "acquir[e] a vested right to appropriate water in a manner harmful to the interests protected by the public trust."[147]

In applying the public trust doctrine to the Oahu water dispute, the Hawaii Supreme Court protected its state's water resources and the Hawaiian public by holding that the public trust doctrine protected all of Hawaii's water, including ground and surface water. This holding represents the first and only time the judiciary utilized the public trust doctrine to protect groundwater resources.[148] "The *Waiahole* [c]ourt articulated three valid purposes for the public trust: 1) the protection of water resources, including maintenance of waters in their natural state . . . ; 2) the protection of domestic uses, particularly the provision of drinking water; and 3) the protection of Native Hawaiian and traditional and customary uses."[149] The court emphasized that while there are some "examples generally demonstrat[ing] that the public trust may allow grants of private interests in trust resources under certain circumstances, they in no way establish private

143. *Id.* at 453.

144. Joseph L. Sax, *The Public Trust Doctrine in Natural Resource Law: Effective Judicial Intervention*, 68 MICH. L. REV. 471 (1970).

145. Joseph D. Kearney & Thomas W. Merrill, *The Origins of the American Public Trust Doctrine: What Really Happened in* Illinois Central, 71 U. CHI. L. REV. 799, 806 (2004).

146. 658 P.2d 709 (1983).

147. *Id.* at 727.

148. Joseph Sax commented that the *Waiahole* decision was unique because it applied the public trust doctrine to domestic uses, ground water, and native use. Denise E. Antolini, *Water Rights and Responsibilities in the Twenty-First Century*, 24 U. HAW. L. REV. 1, 5 (2001).

149. Ede, *supra* note 138, at 295.

commercial use as among the public purposes *protected* by the trust."[150]

The Hawaii court relied partially on the *Mono Lake* decision in deciding how to balance consumptive uses and conservation of water within the framework of the public trust doctrine.[151] In particular, it followed California's lead in stating that water rights would not be granted "to the detriment of public trust purposes."[152] As a practical matter, the court endowed the Commission on Water Resource Management with the power to weigh "competing public and private water uses on a case-by-case basis,"[153] granting permits when appropriate. To inform the Commission's permitting decisions, the court supported creating minimum instream flow standards[154] to "prescrib[e] responsible limits to the development and use of public water resources"[155] and supported leaving more water to instream uses than conservative estimates would warrant.[156] The court also explained how to prioritize water use under the public trust doctrine. It stated that private commercial water uses warrant a higher level of scrutiny than other uses.[157] The most important uses of the water included preservation of the stream, providing water for people to drink, and protecting Native Hawaiian uses.[158]

On a critical note, the public trust doctrine imparts an impractical, utopian feeling that sometimes undermines its usefulness.[159] The doctrine's ambiguity often does not lend itself to clear practical solutions to environmental problems.[160] Some have

150. In re Water Use Permit Applications (*Waiahole*), 9 P.3d 409, 450 (Haw. 2000).

151. *Id.* at 453.

152. *Id.*

153. *Id.* at 454.

154. *Id.* at 459 n.48 (defining "'instream flow standard' as 'a quantity or flow of water or depth of water which is required to be present at a specific location in a stream system at certain specified times of the year to protect fishery, wildlife, recreational, aesthetic, scenic, and other beneficial instream uses'").

155. *Id.* at 460-61 (explaining that instream flow standards ensure protection of water supplies and avoide an "ad hoc planning process driven by immediate demands").

156. *Id.* at 459 (explaining that some water would be reserved as a groundwater buffer and as an agricultural reserve).

157. *Id.* 454. The court also explained that the burden to justify commercial uses should ultimately lie with a party seeking to engage in such use. *Id.*

158. Ede, *supra* note 140, at 295.

159. Ede, *supra* note 140, at 298; *see also* Kearney & Merrill, *supra* note 145, at 806 (discussing Justice Field's lifelong ideological support of the public interest against private influence groups).

160. Ede, *supra* note 140, at 298-303.

criticized the *Waiahole* decision for such ambiguities.[161] For example, one critic of the *Waiahole* court wrote that the decision "did not adequately explain how to balance the three purposes of the [public trust doctrine]" and that the court's reliance on instream flow requirements as a basis for water allocation decisions created a dilemma because no instream flow measurement standards exist.[162] Regardless of such criticisms, the public trust doctrine has proven to be workable in California following the *Mono Lake* decision. Jan Stevens, advisor to California on water allocation following *Mono Lake*, "suggested that the legal complexities of the public trust doctrine are formidable but not insurmountable, and that California courts and agencies have been able to consider the impacts of water allocation decisions on public trust values."[163]

II. Analysis of the Adequacy of Environmental Review in the Powder River Basin

A. Local Populations' Lack of Political Clout Relative to Gas Drillers Limits Their Ability to Protect Their Interests

When it comes to CBM drilling in the Powder River Basin, political decisions unabashedly favor gas interests over those of property owners in the Basin. President Bush and Vice President Cheney earned their fortunes in the oil and gas industry and their oil and gas connections materialized in administrative appointments, such as that of Stephen J. Griles.[164] The Administration's energy policies push production of domestic energy, particularly from the Rocky Mountains and Alaska,[165] and reflect a preference for gas production over environmental review

161. *See id.* at 298-99.

162. *Id* .at 298-303. Hawaii did not already have instream flow standards because stream depths had never been measured before the creation of the Waiahole Ditch system. *Id.* However, instream flow standards are typically available. *Id.* For example, instream flow measurements are commonly used to classify streams in most watersheds. KENNETH BROOKS ET AL., HYDROLOGY AND THE MANAGEMENT OF WATERSHEDS 242 (3d ed. 2003) (describing widespread methods for studying and classifying streams that require measurement of stream depth); *see, e.g.*, MONT. CODE ANN. § 85-20-401 (2003) (illustrating an example of a water rights agreement in Montana using instream flow measurements to determine water rights).

163. Antolini, *supra* note 148, at 8.

164. Defenders of Wildlife v. U.S. Dep't of Interior, 314 F. Supp. 2d 1, 5-6 (D.D.C. 2004).

165. *See supra* notes 36-44 and accompanying text (presenting an overview of the recent rush to develop energy resources).

and public health.[166] The Energy Task Force, under Vice President Cheney, advanced this set of priorities by promoting the practice of hydraulic fracturing, which increases gas production and profits while endangering public water supplies.[167] Under President Bush's direction, the Administration opened more public lands than ever before for oil and gas exploration.[168] Oil and gas subsidies, tax breaks, and research subsidies pushed the development even further, making CBM drilling economically feasible for industry.[169]

Surface owners in the Basin became the political losers in the gas drilling frenzy.[170] Oil and gas companies, backed by government subsidies and tax breaks, earned profits but brought relatively few jobs to the Powder River Basin.[171] This is not surprising considering the political vulnerability of the Powder River Basin population in comparison to the oil and gas industry.[172] The Basin itself contains relatively high populations of minorities and people in poverty and rests in two states that muster only six electoral votes in combination.[173] Towns dot the Powder River Basin even less generously than they do in the rest of the region and ranching is a common occupation.[174] The Powder River Basin simply does not have any political capital to spend.

CBM expansion not only compromises the natural environment of the Powder River Basin, it also exacerbates an inequity between gas giants and farmers, ranchers, and common citizens.[175] While bringing extractive industries into the Basin brings immediate economic benefits, such as huge budget surpluses and cash to spend on new socially-beneficial programs, past energy booms have been followed by busts where the tax money and people flow out of the economy as fast as they came.[176]

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166. *See supra* notes 47-50 and accompanying text. *Contra*, Exec. Order No. 13,212, 66 Fed. Reg. 28,357 (May 18, 2001) (specifying that the Administration aimed to accelerate energy production while maintaining safety and public health).

167. *Supra* note 58 and accompanying text.

168. *Supra* note 36 and accompanying text.

169. *See supra* note 44 and accompanying text.

170. *See supra* Part I.B-C.

171. *Supra* notes 61-68 and accompanying text.

172. *Cf. supra* Part I.B (explaining the political push to develop CBM in Washington); *supra* note 62 (describing the population as a group typically underrepresented in national politics).

173. *Supra* note 62.

174. *Supra* note 62.

175. *See supra* notes 61-68 and accompanying text (explaining that economic benefits will ultimately settle with big business and not local populations).

176. *See supra* notes 60-68 and accompanying text (explaining the boom and

Not only do energy booms leave towns with fleeting economic benefits, they also compromise the area's ability to initiate new economic growth.[177] Past Western energy booms have left counties struggling to fund and maintain programs and infrastructure they can no longer afford.[178] Extractive energy booms cause an even more fundamental problem because resource extraction compromises the environment, which many Western economists argue is the West's most important resource for sustaining agriculture, attracting new businesses and population, and generally growing the economy.[179]

This situation presents a classic violation of the public trust doctrine as framed by Justice Field in 1892: the Administration has "abdicate[d] its trust over property in which the whole people are interested . . . so as to leave [the property] entirely under the use and control of private parties . . . ."[180] In this case, the federal government granted private oil and gas companies easy access to CBM and natural gas at the expense of private landowners and local water supplies,[181] much like the Illinois state legislature granted the Illinois Central Railroad access to the Chicago Harbor in the classic public trust case, *Illinois Central*.[182] In its effort to speed up the permitting process, the government hampered careful environmental review that should ensure gas wells do not negatively affect the surrounding environment.[183] Granting favors to gas companies and waivers of normal restrictive procedures has become standard practice.[184] In its role as trustee of our natural resources, the government encouraged exploitation of gas at the expense of water, an essential resource for life.[185] Existing statutes and regulations do not provide an adequate remedy for this inequity.[186]

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bust of Western energy development spurts).

177. *Supra* notes 64-68 and accompanying text.

178. *Supra* note 64.

179. *Supra* notes 66-67 and accompanying text.

180. Ill. Cent. R.R. Co. v. Illinois, 146 U.S. 387, 453 (1892).

181. *See supra* notes 6, 37, 46 and accompanying text (noting the increase of land available for oil and gas drilling); *see also supra* Part I.C. (detailing the environmental impacts of CBM development).

182. *See supra* note 142 and accompanying text.

183. *See supra* Part I.B (describing the federal government's push to develop CBM, the subsequent increase in CBM wells, and the sloppiness of the environmental review process).

184. *See supra* notes 42-44 (describing the procedural latitude given to oil and gas companies).

185. *See supra* notes 35-44 and accompanying text.

186. *See supra* Part I.C.

B. Powder River Basin Residents Do Not Have Adequate Protection from CBM Drilling

1. The Clean Water Act is Good, but Not Good Enough

Given current statutory options, the CWA presents the best protection for Powder River Basin residents faced with CBM-derived water pollution. The Ninth Circuit's decision in *Fidelity* requires that gas drillers acquire an NPDES permit before disposing of CBM wastewater in Montana waters.[187] If enforced, this holding will prevent pollution of surface water in Montana.[188] If authorities fail to enforce the CWA, aggrieved citizens can file claims under the CWA's citizen suit provision,[189] as the plaintiffs did in *Swartz*, *Fidelity*, and *Wyoming Outdoor Council*.[190]

Notwithstanding the CWA's benefits, it presents some significant inadequacies for Powder River Basin plaintiffs. First, a citizen suit can be brought only *after* gas drillers discharge pollutants into the water.[191] Thus, the damage is done before a citizen can take action. For example, Wildcat Creek intermittently ran dry or contained highly polluted water *before* Swartz brought suit.[192] Fidelity Exploration polluted the Tongue River *before* plaintiffs could bring suit.[193]

Swartz's takings clause claim also failed to prevent pollution. Establishing a constitutional taking entitled Swartz to receive compensation only for his damaged land.[194] Compensation, however, cannot restore polluted land to its former level of quality.[195] Depending on the level and type of damage, money presents an inadequate or limited solution to land and water rehabilitation.[196] Given that Swartz and many other Powder River Basin residents ranch for a living, soil and water quality form the basis for their livelihoods and, consequently, intensify their

187. *See* N. Plains. Res. Council, Inc. v. Fidelity Exploration & Dev. Co., 325 F.3d 1155, 1159, 1165 (explaining that the CWA required an NPDES permit for discharge of pollutants into navigable waters and holding that CBM-produced water is a pollutant).

188. *See id.* at 1158-59 (distinguishing CBM water from river water and characterizing CBM water's effect on surface water).

189. *See supra* note 78 and accompanying text.

190. *See supra* notes 80-101 and accompanying text.

191. *See supra* note 79 and accompanying text.

192. Swartz v. Beach, 229 F. Supp. 2d. 1239, 1248-49 (D. Wyo. 2002).

193. *Fidelity*, 325 F.3d at 1158.

194. U.S. CONST. amend. V.

195. *See supra* note 91 and accompanying text.

196. *See supra* note 91 and accompanying text.

personal stake in environmental injuries.[197]

Citizen suits will never prevent environmental damage, except as a scare tactic, because they are brought after the fact. The CWA can, however, prevent pollution when government agencies adhere strictly to its requirements.[198] Given the current political climate and frenzy to increase CBM gas production in the Powder River Basin, strict environmental compliance is not the norm.[199] Furthermore, even when government agencies do issue permits, water quality is not guaranteed. For example, the Wyoming Department of Environmental Quality issued an NPDES permit to the drillers discharging pollution onto Swartz's land.[200] If not for Swartz's citizen suit, the CWA violation would not have been exposed.

The CWA fails in another area as well: it protects only surface water, not groundwater.[201] Because gas drilling threatens groundwater with both over-pumping and pollution, the CWA provides inadequate protection.[202] In the semi-arid Powder River Basin, depletion of groundwater because of CBM drilling presents a serious problem.[203]

2. The National Environmental Policy Act is Good, but Not Good Enough

NEPA also provides Powder River Basin residents with some protection from the impacts of gas drilling.[204] In Wyoming, for instance, the *Pennaco* court forced the BLM to perform further studies on CBM drilling's groundwater impacts before auctioning gas leases.[205] As *Pennaco* demonstrated, NEPA fills a gap left by the CWA; its breadth allows plaintiffs to file claims regarding the over-pumping of groundwater.[206]

NEPA, however, does not guarantee that federal agencies will protect groundwater. In Montana, for example, the BLM

197. *See supra* notes 88-89 and accompanying text.

198. *Cf.* Swartz v. Beach, 229 F. Supp. 1239, 1262-63 (D. Wyo. 2002) (noting that if the agency had followed the CWA, Swartz's land would not have been polluted).

199. *See id.* at 1248 (explaining that Swartz could not irrigate his crops because of pollution).

200. *Id.* at 1247.

201. *See supra* notes 71-77 and accompanying text.

202. *See supra* notes 71-77 and accompanying text.

203. *See supra* notes 46-49 and accompanying text.

204. *See supra* notes 115-119 and accompanying text (describing how *Pennaco* and *Wyo. Outdoor Council* used NEPA to protect the environment).

205. *See supra* note 116 and accompanying text.

206. *See supra* note 116 and accompanying text.

decided not to consider groundwater effects before permitting new CBM wells.[207] NEPA does not explicitly require that any agency maintain groundwater levels, set maximum pumping standards, or even mention groundwater.[208] NEPA defers to government agencies (in this case the BLM) by requiring agencies to take a "hard look" at the environmental issue in question, and prepare an EIS when necessary.[209] Even if the agency prepared an EIS stating that CBM drilling severely threatened groundwater, it could proceed to auction gas leases and permit wells freely.[210]

Through its procedural focus NEPA brings the public into the environmental review process and requires agencies to make considered decisions, but it does not provide substantive environmental protection.[211] In other words, NEPA improves agency decision-making, but does not guarantee protection of groundwater.[212] Gas drillers desperately want the water, and government agencies have been giving it to them. When one places high value on groundwater protection, NEPA alone is not enough.

Finally, standing requirements limit citizens' abilities to file claims to protect their resources under both CWA and NEPA.[213] While all Montana and Wyoming residents (even future residents) have an interest in healthy groundwater levels, few have actual standing to sue.[214]

3. FOIA Presents a Good Option for Non-Profit Groups to Protect Average Citizens, but Not for Average Citizens to Protect Themselves

The fact that non-profit groups used FOIA to protect the Powder River Basin from CBM drilling signals that statutory protection of Powder River Basin residents, and their water rights, is insufficient. In one way, this litigation sought to root out the problem, namely an administration that promotes CBM drilling over the welfare of Montana and Wyoming residents.[215] In another

207. *See supra* note 121 and accompanying text.
208. *See supra* note 108 and accompanying text.
209. *See supra* note 108 and accompanying text.
210. Coggins & Van Dyke, *supra* note 29, at 650.
211. *Id.* at 649-50.
212. *See supra* notes 47-52 (explaining the poor prognosis for groundwater in the Basin).
213. *See supra* notes 123-126 and accompanying text.
214. *See supra* notes 123-126 and accompanying text.
215. *See supra* notes 47-50 and accompanying text.

sense, this litigation did not address the substantive issues raised by CBM drilling in the Powder River Basin, such as water pollution and groundwater depletion.[216] Furthermore, FOIA presents a valid option for legal redress only when a public official fails to administer his or her duties ethically.[217] Residents of the Basin should not have to wait for such an opportunity to protect their rights.

4. Current Environmental Protection is Too Responsive to Political Pressure

NEPA, the CWA, and FOIA all serve a necessary purpose in the environmental review/landowner protection process. In both Montana and Wyoming the courts have limited pollution of surface waters through the CWA, and the *Penneco* court required the BLM to perform rigorous environmental review through NEPA. However, these statutes cannot fully protect groundwater from CBM development.

As they currently exist, NEPA and the CWA cannot guarantee protection of the Powder River Basin's groundwater when the executive branch exerts pressure on agencies to increase resource development.[218] As the mineral-leasing program exploded in the past few years, the environmental review process for oil and gas drilling projects deteriorated.[219] This deterioration did not result from a new national energy policy, amendments to the CWA or NEPA, or any other transparent government process.[220] Rather, the executive branch simply formed new energy-related committees, clarified domestic energy production priorities, and placed pressure on government agencies to comply with those priorities.[221] Government agencies responded to this pressure by issuing gas and oil permits at an accelerated rate and by giving less time to environmental review.[222] The fact that the Bush administration could simply influence agency operations to increase permitting in the Powder River Basin reveals a serious flaw in the environmental review process.

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216. *See supra* notes 47-50 and accompanying text.

217. Defenders of Wildlife v. U.S. Dep't of Interior, 314 F. Supp. 2d 1, 5 (D.D.C. 2004).

218. *See supra* Part I.B-C (explaining the push to develop CBM and the environmental consequences).

219. *See supra* notes 45-46 and accompanying text.

220. *See supra* note 39 and accompanying text.

221. *See supra* Part I.B.

222. *See supra* notes 45-46 and accompanying text.

NEPA, in particular, has proven to be overly responsive to political pressure in that it dictates environmental review procedure[223] but does not guarantee substantive protection of any natural resources.[224] In Montana and Wyoming, the BLM or similar agencies, can fully comply with NEPA while allowing CBM operators to drain groundwater at an inappropriate pace.[225] Because environmental review procedure has not prevented groundwater depletion, Montana and Wyoming should adopt laws that require substantive protection of groundwater.

C. Surface Owners Need Legislation that Will Protect Groundwater

1. The Public Trust Doctrine Provides a Good Solution to Resource Allocation Problems

The Hawaii formulation of the public trust doctrine strikes a sustainable balance between resource development and conservation because it prescribes a "controlled development of resources."[226] Resource development would be controlled under Hawaii's model because the model allows resource exploitation only when it is compatible with "public use, access, and enjoyment."[227]

Basing water allocation decisions on instream flow standards will enable Hawaii to maximize the amount of water available for permits without compromising stream integrity.[228] Setting and following instream flow standards should be relatively simple because the process requires only that the Commission find out how much water is available and how much of that water should be made available for offstream uses.[229] Hawaii's clearly outlined water use priorities should further simplify the Commission's permitting decisions. Following the *Waihole* court's stated priorities should ensure a healthy stream and sufficient water for drinking and Native uses, before any other uses will be allowed.[230]

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223. *See supra* note 45 and accompanying text.

224. *See* Coggins & Van Dyke, *supra* note 29, at 649-50.

225. *See id.* at 650-51.

226. In re Water Use Permit Applications (*Waiahole*), 9 P.3d 409, 453 (Haw. 2000) (quoting Payne v. Kassab, 312 A.2d 86, 94 (1973)).

227. *Id.* at 454.

228. *Id* at 461 (explaining that without instream flow standards permitting would be unplanned and driven by immediate demand).

229. *See supra* notes 154-155 and accompanying text.

230. *See* Ede, *supra* note 140, at 295 (outlining the court's priorities).

Instream flow standards coupled with clear priorities should provide a workable solution to Hawaii's resource allocation dilemma.

The public trust doctrine however generates some difficulties. It will not be easy for the Commission to carry out the *Waiahole* decision because of uncertainty over setting instream flow standards.[231] It will be difficult to set instream flow standards given that no one measured stream depths before the Waiahole Ditch System construction.[232] In fact, few people living in Hawaii today have ever seen stream levels that were not compromised by the ditch system.[233] This uncertainty will make it more difficult to know how much water is necessary to maintain a healthy stream and how much water can be granted for drinking, Native uses, and agriculture.[234] The Commission resolved this problem by setting higher instream flow standards than might be necessary in order to preserve the ecosystem.[235]

The *Waiahole* court's version of the public trust doctrine also generates a problem for farmers or others who want water but do not qualify for permits. There is no way to soften the blow for farmers who will not be able to irrigate their crops to the extent they would like. The Commission's application of the public trust doctrine will force people to reevaluate their business choices and actual water needs.[236] If enough water permits are not available, it simply will not be feasible to build a water-intensive business in Oahu's dry central plain, such as a golf course.[237] Regardless of this problem, the entire population will benefit from sustainable use of Oahu's water resources because the water will support a unique ecosystem and will continue to provide water, albeit a limited amount, for generations to come.[238]

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231. *Supra* note 155 and accompanying text.

232. *See* Ede, *supra* note 140, at 299-300.

233. A majority of the Waihole Ditch System was constructed from 1913-1916. *Waiahole*, 9 P.3d at 423.

234. *See* Ede, *supra* note 140, at 299-300.

235. *See Waiahole*, 9 P.3d at 466-67 (describing that the instream flow standards included a buffer).

236. *See generally id.* at 409-521 (interpreting the public trust doctrine in a way that places a higher value on conserving water than granting water use permits).

237. *See id.* at 485-86.

238. *See id.* at 458 (discussing the Commission's view that instream flow standards will improve the environment).

2. The Public Trust Doctrine Would Provide a Good Solution for the Powder River Basin's Water Allocation Problems

A statute grounded in the public trust doctrine that prescribes minimum instream flow standards would work to preserve water in the Powder River Basin for current and future generations. In many ways the Powder River Basin dilemma is similar to the problem in Oahu; both regions are struggling with water conservation and allocation issues.[239] The public trust doctrine provided a good solution for Oahu, and it could work equally as well in the Powder River Basin.

For practical reasons, the public trust doctrine, as formulated by the *Waiahole* court, would ensure water conservation anywhere.[240] Maintaining minimum stream flows would help to maintain groundwater supplies, since a large component of stream flow comes from groundwater.[241] Consequently, healthy stream flow measurements reflect a good supply of groundwater. Besides setting the minimum stream flow, the statute would also need to rank possible water uses in order of priority. Hawaii's ranking provides a useful guideline.[242] Application of the public trust doctrine would require government agencies to maintain a minimum stream flow in order to ensure the continued flow of streams.[243] Drinking water would be the second highest priority, then perhaps stock-watering and agricultural uses, and, finally, industrial uses such as mine dewatering. Unlike Oahu, Montana and Wyoming would not face as much difficulty selecting appropriate instream flow standards because they already have a better record of stream flow measurements than Oahu ever had.[244] Therefore, it would be easier to establish minimum instream flow standards for the Basin than for Oahu, and it would be simpler to grant permits confidently, in accordance with the public trust doctrine.[245]

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239. *See supra* Part I.C and I.E.

240. The Powder River Basin could incorporate the terms of successful damage agreements into statutory protection for the entire basin. *See supra* note 12 and accompanying text (noting that Ted Turner has successfully protected his land from environmental damage with a well-planned damage agreement).

241. *See, e.g.*, *Waiahole*, P.3d at 447 (quoting Reppun v. Bd. of Water Supply, 656 P.2d 57, 71-72 (1982)) (describing ground and surface water as a "single integrated source of water").

242. *See* Ede, *supra* note 140 (outlining the goals of Hawaii's public trust doctrine).

243. *See id.*

244. *See supra* note 162 (explaining that stream flow standards are available for most watersheds and that Hawaii's lack of standards is an anomaly).

245. *See supra* note 162 and accompanying text (discussing a limitation in

The statute would need to prescribe a remedy if stream flow fell below a minimum standard.[246] In this event, the affected region should place a moratorium on the least important water uses. Therefore, if the region's streams dropped below minimum standards, indicating a possible groundwater shortage, industrial uses would need to cease.[247] This provision might prove to be useful during the late summer and fall when the region is particularly dry and streams disappear altogether.

This type of statute strikes a balance between private industrial and public uses of water. Although CBM drilling would be the first use cut in times of shortage, CBM drilling would not be prohibited entirely.[248] This proposal would force CBM drilling to fit into a sustainable ecosystem, which it presently is not doing.[249] In addition, the proposal would privilege ranchers who currently face water shortages because of CBM drilling, hopefully sustaining Western ranching in a more comfortable fashion.

Legally, such a statute modeled after the public trust doctrine would provide several advantages. Unlike NEPA and the CWA, the proposed statute would force CBM drillers to practice sustainable use of water.[250] Furthermore, a statute that clearly established the rights of parties would offer private citizens an opportunity to take a case to court without relying on the ephemeral citizen suit provisions.[251] CBM drillers would always need to comply with the statute.

Moreover, this statute would avoid problems with causation, such as CBM drillers claiming that it is impossible to tell if they caused the water shortage.[252] By simply proscribing CBM drilling during low flow periods, the CBM drillers would not have the

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implementing minimum stream standards in Hawaii's situation that would not apply in the Powder River Basin).

246. Because stream flow provides a measure of groundwater, it is important to maintain a minimum stream flow. *See supra* note 241 and accompanying text.

247. *See supra* note 241 and accompanying text.

248. *See* In re Water Use Permit Applications (*Waiahole*), 9 P.3d 409, 480-82 (Haw. 2000) (explaining that the Commission's designation of "nonagricultural" water uses means that those uses are subject to greater review when competition for water arises).

249. *See supra* notes 46-59 (describing CBM mining's current deleterious effects on land and water).

250. *See supra* notes 75-77, 121, 249 and accompanying text.

251. *See supra* notes 78-79 and 125 and accompanying text (describing the limited role of the citizen suit).

252. Because no particular well can be identified as the culprit for water shortages, it would be difficult to prove who specifically caused the problem. *Cf.* Arthur et al., *supra* note 48, at 18 ("Water wells adjacent to but outside of a producing CBM field may also be adversely impacted.").

opportunity to raise such a defense. The statute would not allow industry to shield itself from responsibility for groundwater depletion because it would remove causation from the equation.

There is one problem with such a statute: who would enact it? Montana, Wyoming, both states, or the federal government could enact such a statute.[253] Because the Powder River Basin straddles the Wyoming/Montana border, it would be important that both states or the federal government enact the law.[254] If only one state passed such a statute, it may even not benefit from its own self-discipline because groundwater does not respect political boundaries.[255] Aquifers overlap the Montana and Wyoming border, and one state's activities impact the groundwater used by the other.[256] Therefore, the two states should enter into a legally binding agreement that governs groundwater management or the federal government should enact the statute. Perhaps the states could create a Powder River Basin Groundwater District with a single set of rules that apply to the entire watershed.

Conclusion

This Article has examined the case law surrounding CBM development in the Powder River Basin, bringing to light both positive and negative aspects of current environmental protection. In some instances, the law has worked to ensure protection of the people and environment, such as in *Pennaco* where the court forced the BLM to perform a more thorough EIS before auctioning several gas leases. In both states, judicial application of the CWA limited the ability of gas drillers to pollute surface water. Despite

253. U.S. CONST. art. I, §§ 9-10 (making no grant or denial of a state or federal power to enact a public trust statute); U.S. CONST. amend. X ("The powers not delegated to the United States by the Constitution, nor prohibited by it to the States, are reserved to the States respectively, or to the People.").

254. The depletion of groundwater in one state will affect the other, so, in order to gain maximum benefit from new statutory protection, the statute needs to affect both states. *See supra* notes 48-52, 252 and accompanying text (explaining the extent of potential groundwater depletion and the regional impact of CBM water production).

255. *See supra* note 254 and accompanying text.

256. *See* Part I.D. Montana and Wyoming have responded to CBM drilling asymmetrically. *Compare* Pennaco Energy, Inc. v. U.S. Dep't of the Interior, 377 F.3d 1147 (10th Cir. 2004) (concluding previous environmental reviews of CBM development were insufficient) *with* N. Plains Res. Council, Inc. v. U.S. Bureau of Land Mgmt., 298 F. Supp. 2d 1017, 1024 (D. Mont. 2003) (stating the BLM "was not required to perform a new EIS prior to issuing the oil and gas leases nor was it required to halt issuance of leases pending completion"). The Wyoming courts have been harder on gas drillers than have Montana courts for a variety of reasons. *See supra* notes 62-65.

these successes, groundwater is not adequately protected, demonstrating the need for better statutory protection. An underlying problem with CBM development is that the environmental statutes have proven to be too responsive to political pressure. Amidst the current push to develop domestic oil and gas, environmental review has weakened.

Using the public trust doctrine as protection for environmental issues, such as CBM development, is attractive because it sets clear priorities that place value on water conservation and human well-being. Making these values enforceable through law likely would result in a more controlled development of resources, benefiting the Western environment and the people tied to it.