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## Trading Water for Gas: Application of the Public Interest Review to Coalbed Methane Produced Water Discharge in Wyoming

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COMMENT

**Trading Water for Gas: Application of the Public Interest Review to Coalbed Methane Produced Water Discharge in Wyoming**

*C. Stephen Herlihy\**

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I. INTRODUCTION

Coalbed methane has become a productive part of Wyoming’s energy industry.<sup>1</sup> The pace of development is frenzied in areas such as the Powder River Basin, where coalbed methane (“CBM”) is plentiful and accessible.<sup>2</sup> To be sure, methane gas is a valuable resource; however, the recovery of CBM gas

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<sup>1</sup> See The Ruckelshaus Institute of Environment and Natural Resources, *Water Production from Coalbed Methane Development in Wyoming: A Summary of Quantity, Quality and Management Options*, University of Wyoming, December 2005, at 5–10 [hereinafter Ruckelshaus Report].

<sup>2</sup> Anne MacKinnon & Kate Fox, *Demanding Beneficial Use: Opportunities and Obligations for Wyoming Regulators in Coalbed Methane*, 6 WYO. L. REV. 369, 370 (2006).

causes a myriad of concerns.<sup>3</sup> This comment addresses a troublesome aspect of CBM development, which is produced water.<sup>4</sup> Specifically, in a race for CBM development, one valuable resource is being traded for another: water for gas.<sup>5</sup> Both resources are important and valuable, yet industry treats the water resource largely as a troublesome bi-product of gas production.<sup>6</sup> Management of produced water in the Powder River Basin of Wyoming and Montana raises some unique issues because of the higher quality and greater quantity of water than is produced in other CBM plays.<sup>7</sup>

A paradigm shift should occur in how the water produced in association with CBM development is viewed and managed within Wyoming.<sup>8</sup> Water in the west is a scarce and valuable resource. Humans depend on water for their very survival. A large amount of readily available groundwater is a valuable and reliable resource that should not be treated as waste bi-product of industry.<sup>9</sup> Long after the gas is gone, people living in the Powder River Basin, and in other CBM hotspots allowing the discharge of produced water, will rely on water for domestic and other uses. As a result, wise management of the associated water should temper the pace of CBM production.<sup>10</sup>

Challenging issues associated with CBM production abound, though the overarching and most contentious theme surrounds the management of discharged CBM water.<sup>11</sup> First, the *quantity* of water brought to the surface in the pursuit of coalbed methane gas has challenged many parties involved in, and those affected

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<sup>3</sup> See generally Ruckelshaus Report, *supra* note 1; Sharon Buccino & Steve Jones, *Controlling Water Pollution from Coalbed Methane Drilling: An Analysis of Discharge Permit Requirements*, 4 WYO. L. REV. 559 (2004) (discussing the environmental concerns associated with CBM water).

<sup>4</sup> Ruckelshaus Report, *supra* note 1, at v. “Produced water” is any byproduct water discharged in oil and gas exploration. *Id.* This comment addresses water discharged in the production of coalbed methane.

<sup>5</sup> See generally MacKinnon & Fox, *supra* note 2; Thomas F. Darrin, *Waste or Wasted?—Rethinking the Regulation of Coalbed Methane Byproduct Water in the Rocky Mountains: A Comparative Analysis of Approaches to Coalbed Methane Produced Water Quantity Legal Issues in Utah, New Mexico, Colorado, Montana and Wyoming*, 17 J. ENVTL. L. & LITIG. 281 (2002).

<sup>6</sup> See Darrin, *supra* note 5, at 283.

<sup>7</sup> See Mike Hightower, *Managing Coal Bed Methane Produced Water for Beneficial Uses, Initially Using the San Juan and Raton Basins as a Model*, Sandia National Laboratories, Power Point, <http://wrii.nmsu.edu/conf/forum/CBM.pdf>, at slide 1 (this slide shows that water in the Powder River Basin has lower amounts of total dissolved solids, which equates to better quality water).

<sup>8</sup> See *infra* notes 187–238 and accompanying text.

<sup>9</sup> Ruckelshaus Report, *supra* note 1, at vii.

<sup>10</sup> See MacKinnon & Fox, *supra* note 2, at 372.

<sup>11</sup> See Gary C. Bryner, *Coalbed Methane Development: The Costs and Benefits of an Emerging Energy Resource*, 43 NAT. RESOURCES J. 519, 535–541 (2003).

by, the industry.<sup>12</sup> Second, the water brought to the surface varies in degree of *quality*, posing a set of challenges in its own right.<sup>13</sup> A third emerging issue is the interconnectedness of groundwater.<sup>14</sup> This includes the management of CBM producers within the existing scheme of water law relating to groundwater when the withdrawal of groundwater to capture natural gas affects other groundwater users' water rights.<sup>15</sup> These issues impact a large swath of Wyoming's population, and any current conflicts, as well as those on the horizon, will be exacerbated as CBM production continues to play a major role in Wyoming's energy industry.<sup>16</sup>

Though the problems with water quality are numerous and important, this comment focuses on the quantity of groundwater discharged in CBM production.<sup>17</sup> Much has been written about how to minimize the impacts of the vast amount of water produced by CBM production, yet it is also important to recognize that the water itself is being largely sacrificed for the production of gas.<sup>18</sup> The primary problems associated with the loss of trillions of gallons of groundwater are not fully understood but include aquifer draw-down, which will affect surrounding wells, and the loss of a valuable resource that will likely not be replenished in our lifetime.<sup>19</sup>

This comment argues that the water associated with CBM should not be treated as a waste product of gas production; limits should be imposed on the energy industry to ensure wise use of both resources.<sup>20</sup> The background section introduces coalbed methane development, associated impacts, and the agency management scheme for CBM water.<sup>21</sup> An introduction to the public interest is given, followed by an analysis of the State Engineer Office's ("SEO's") duty pursuant to the public interest review.<sup>22</sup> The State Engineer is the steward of Wyoming's water and can impose limits on the energy industry's production of CBM water through application of the public interest review.<sup>23</sup> Specifically, this

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<sup>12</sup> *Id.*

<sup>13</sup> See generally Buccino & Jones, *supra* note 3 (discussing at length issues relating to the quality of CBM water including environmental impacts and management concerns).

<sup>14</sup> See MacKinnon & Fox, *supra* note 2 at 380–383.

<sup>15</sup> *Id.*

<sup>16</sup> See generally Ruckelshaus Report, *supra* note 1 (discussing conflict areas relating to the CBM industry).

<sup>17</sup> See *infra* notes 45–56 and accompanying text.

<sup>18</sup> See Joshua Skov & Nancy Myers, *Easy Money, Hidden Costs: Applying Precautionary Analysis to Coalbed Methane in the Powder River Basin*, A Report of the Science and Environmental Health Network at i (June 2004), <http://www.sehn.org/pdf/cbm.pdf>.

<sup>19</sup> See generally Ruckelshaus Report, *supra* note 1.

<sup>20</sup> See *infra* notes 187–250 and accompanying text.

<sup>21</sup> See *infra* notes 31–98 and accompanying text.

<sup>22</sup> See *infra* notes 99–168 and accompanying text.

<sup>23</sup> See *infra* notes 196–204 and accompanying text.

comment argues the SEO should conduct an identifiable cost-benefit analysis, pursuant to the public interest review, considering the full costs associated with the discharge of produced water.<sup>24</sup>

## II. BACKGROUND

The background section begins with an overview of coalbed methane and produced water.<sup>25</sup> A discussion of the current state of CBM development follows, with particular focus on the Powder River Basin in Wyoming.<sup>26</sup> This section includes a brief introduction to water quality considerations.<sup>27</sup> An overview of the current CBM management scheme sets the stage for an in-depth look at the public interest review.<sup>28</sup> Specifically, this section explores the sources from which the public interest review is derived in Wyoming, which other states require a public interest review, and finally, what some states' public interest reviews actually require of the state engineer.<sup>29</sup> The background section ends with a look at a current Wyoming case involving the public interest review and some of the current actions being taken by Wyoming agencies that address the discharge of CBM produced water.<sup>30</sup>

### A. Introduction to Coalbed Methane and Produced Water

Coalbed methane is natural gas located in coal deposits.<sup>31</sup> The gas that producers seek in CBM production is found virtually wherever coal seams exist.<sup>32</sup> This translates into a prevalent resource throughout Wyoming and the United States because coal deposits are widespread.<sup>33</sup> Coalbed methane can be distinguished from traditional natural gas in a number of ways. These differences have led the energy industry to sometimes refer to CBM as coalbed natural gas so as to avoid confusion with traditional natural gas.<sup>34</sup> First, traditional natural gas is found in different geologic structures than CBM, which are often sandstone formations deep within the ground.<sup>35</sup> Second, traditional natural gas does not

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<sup>24</sup> See *infra* notes 205–238 and accompanying text.

<sup>25</sup> See *infra* notes 31–44 and accompanying text.

<sup>26</sup> See *infra* notes 45–56 and accompanying text.

<sup>27</sup> See *infra* notes 57–69 and accompanying text.

<sup>28</sup> See *infra* notes 70–98 and accompanying text.

<sup>29</sup> See *infra* notes 99–147 and accompanying text.

<sup>30</sup> See *infra* notes 148–168 and accompanying text.

<sup>31</sup> Wyoming State Geological Survey: Coalbed Methane Information, [http://www.wsgs.wyo.edu/Coal/CBM\\_Info.aspx](http://www.wsgs.wyo.edu/Coal/CBM_Info.aspx) (last visited Mar. 22, 2009).

<sup>32</sup> Darrin, *supra* note 5, at 293.

<sup>33</sup> *Id.*

<sup>34</sup> Ruckelshaus Report, *supra* note 1, at 1.

<sup>35</sup> *Id.* Examples of traditional natural gas fields are the Jonah and Pinedale Anticline Fields, which are located in southwest Wyoming. *Id.*

produce the vast amount of water that CBM production does.<sup>36</sup> Because of the way coal forms, coal seams, where CBM is located, are also aquifers.<sup>37</sup> The valuable methane gas is trapped in the coal seam by the hydrostatic pressure of the water contained in the aquifer.<sup>38</sup> In order to release the gas, water must be discharged to lessen the pressure that keeps the gas in the ground.<sup>39</sup> Because coalbed methane gas is found in aquifers and the aquifer must be dewatered in order to obtain the methane gas, CBM production poses significantly different challenges than traditional natural gas production.<sup>40</sup>

People have known about CBM for centuries, yet only recently has CBM generated interest as a serious and economically viable addition to the United States energy portfolio.<sup>41</sup> In fact, development did not begin until 1987 in the Powder River Basin, and development has yet to reach anything close to nearing maximum capacity.<sup>42</sup> As of 2004, approximately 95% of CBM in the Powder River Basin had yet to be recovered.<sup>43</sup> Because of the relative newness of CBM production combined with the massive amounts of water discharged in the process of obtaining coalbed methane, it is no surprise that management practices are struggling to keep pace with CBM production and associated discharge of produced water.<sup>44</sup>

As of 2007, roughly 26,000 CBM wells have been drilled in the Powder River Basin.<sup>45</sup> About 17,400 of these wells currently produce and another 6,800

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<sup>36</sup> *Id.*

<sup>37</sup> Darrin, *supra* note 5, at 283.

<sup>38</sup> *Id.*

<sup>39</sup> *Id.*

<sup>40</sup> Kristin Keith, Jim Bauder & John Wheaton, *Coalbed Methane Frequently Asked Questions*, Water Quality and Irrigation Mgmt., The Dept of Land Res. and Env'tl Sciences, Montana State University–Bozeman (2003), <http://waterquality.montana.edu/docs/methane/cbmfaq.shtml> (last visited Mar. 22, 2009).

<sup>41</sup> Ruckelshaus Report, *supra* note 1, at 1.

<sup>42</sup> *See generally id.*

<sup>43</sup> *Id.* at 1.

<sup>44</sup> *See generally* MacKinnon & Fox, *supra* note 2; Darrin, *supra* note 5; Gary Bryner, *Coalbed Methane Development in the Intermountain West: Producing Energy and Protecting Water*, 4 WYO L. REV. 541 (2004); Buccino & Jones, *supra* note 3; Allan Ingelson, *Sustainable Development and the Regulation of Coal Bed Methane Industry in the United States*, 20 J. NAT. RESOURCES & ENVTL. L. 51 (2005–2006); Wyo. Outdoor Council v. Army Corps of Engineers, 351 F.Supp.2d 1232 (D.Wyo., 2005); Swartz v. Beach, 229 F.Supp.2d 1239 (D.Wyo., 2002).

<sup>45</sup> Jimmy Goolsby & Andy Finley, *Coalbed Natural Gas in the Powder River Basin Wyoming and Geology*, Goolsby, Finley and Associates, LLC, Power Point (June 30, 2007), <http://www.goolsbyfinley.com/presents/prbcm063007.ppt>, at slide 12 (last visited Apr. 17, 2009).

wells have been drilled but do not currently produce because they have yet to be permitted or for some other reason.<sup>46</sup> Roughly 2,000 wells have been plugged and abandoned.<sup>47</sup>

Groundwater extraction, which allows for the release of coalbed methane gas, is at the core of the majority of concerns and disputes regarding CBM development.<sup>48</sup> CBM wells discharge a significant amount of water in the Powder River Basin due to methane gas extraction.<sup>49</sup> By one estimation, as much as 11 trillion gallons of water could be lost during the fifteen to twenty year projected life of CBM production in the Powder River Basin.<sup>50</sup> That is enough water to fulfill the domestic needs of every person who lives in Wyoming and Montana for the next 150 years.<sup>51</sup> Furthermore, up to 5,000 private groundwater wells could be dewatered due to declining aquifers as a result of pumping water to produce gas.<sup>52</sup> By one estimate, this water could be worth as much as \$10 billion dollars.<sup>53</sup> A report produced by the University of Wyoming estimated total water production at about 7,150,354 acre-feet of water.<sup>54</sup> There are 325,851 gallons of water in an acre-foot.<sup>55</sup> Total water production by this estimate in gallons is about 2.3 trillion gallons of water. Total gas production is projected to be 31,700 billion cubic feet.<sup>56</sup>

### 1. *Water Quality Considerations*

Although this comment focuses primarily on the amount of groundwater discharged in CBM production, the *quality* of the water produced because of CBM development is inextricably tied to the management structure that has been developed.<sup>57</sup> CBM produced water, especially in the Powder River Basin, is notably different than produced water from other oil and gas production.<sup>58</sup> There are two main differences. First, *much* more water is produced in CBM development.<sup>59</sup>

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<sup>46</sup> *Id.*

<sup>47</sup> *Id.*

<sup>48</sup> See, e.g., MacKinnon & Fox, *supra* note 2, at 370.

<sup>49</sup> See generally Skov & Myers, *supra* note 18.

<sup>50</sup> *Id.* at 1.

<sup>51</sup> *Id.*

<sup>52</sup> *Id.*

<sup>53</sup> *Id.*

<sup>54</sup> Ruckelshaus Report, *supra* note 1, at 10. An acre-foot is the amount of water it takes to cover one acre of land one foot deep in water. *Id.* at iv.

<sup>55</sup> *Id.*

<sup>56</sup> *Id.*

<sup>57</sup> See generally Buccino & Jones, *supra* note 3.

<sup>58</sup> Darrin, *supra* note 5, at 296–300.

<sup>59</sup> *Id.* at 288.

Second, the *quality* of CBM produced water, especially in the Powder River Basin, is of significantly higher quality than water produced in other forms of oil and gas production.<sup>60</sup>

The quality of CBM water varies, in some cases drastically, from one coal seam to another.<sup>61</sup> The Powder River Basin is the focus of this comment because the quality of the produced water in general is higher than virtually any other coal seams in Wyoming and the west.<sup>62</sup> These quality discrepancies complicate management practices because varying tactics are often employed depending on the quality of produced water.<sup>63</sup> The quality of the water is affected by the amount of total dissolved solids, sodium absorption ratio, and electrical conductivity.<sup>64</sup>

While the quality of CBM produced water varies widely, it is generally better than traditional produced water from oil and gas operations.<sup>65</sup> One significant challenge is that CBM water is both valuable and hazardous.<sup>66</sup> It is valuable and hazardous precisely because there is so much water and the water varies from drinkable to so saline it is unusable and hazardous when discharged.<sup>67</sup> It is true that not all CBM produced water is of high value because of its low quality, yet much of the water can be treated to drinkable standards, though with poorer water quality, more expense is needed to treat it to reach useable levels.<sup>68</sup> As water becomes scarcer, treatment of lower quality water for domestic and stock uses may become a more economically attractive option.<sup>69</sup>

### *B. Current Management Practices for Produced Water in Wyoming*

The current management scheme of CBM produced water is three-fold.<sup>70</sup> The Wyoming Department of Environmental Quality (“WDEQ”), the State Engineer’s Office (“SEO”), and the Wyoming Oil and Gas Conservation Commission (“WOGCC”) each play a role.<sup>71</sup> The WDEQ oversees the *quality*

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<sup>60</sup> *Id.*

<sup>61</sup> Ruckelshaus Report, *supra* note 1, at 17.

<sup>62</sup> *Id.* The trend in the Powder River Basin is that the water is of higher quality in the shallow coal seams located in the southeast section of the field and decreases in quality as one heads towards the northwest. *Id.*

<sup>63</sup> See generally Buccino & Jones, *supra* note 3; Ruckelshaus Report, *supra* note 1.

<sup>64</sup> For a detailed discussion of water quality issues see Ruckelshaus Report, *supra* note 1; Buccino & Jones, *supra* note 3.

<sup>65</sup> See, e.g., Hightower, *supra* note 7 and accompanying text.

<sup>66</sup> See generally MacKinnon & Fox, *supra* note 2, at 371–74.

<sup>67</sup> *Id.*

<sup>68</sup> See Ruckelshaus Report, *supra* note 1, at 20–30.

<sup>69</sup> See generally Buccino & Jones, *supra* note 3, at 581–82.

<sup>70</sup> Ruckelshaus Report, *supra* note 1, at 33.

<sup>71</sup> *Id.*



of water discharged in connection with CBM production through the issuance of Wyoming Pollution Discharge Elimination System (“WYPDES”) permits, which is under the umbrella of the National Pollution Discharge Elimination System.<sup>72</sup> The State issues WYPDES permits pursuant to authority from the Clean Water Act.<sup>73</sup>

Responsibility lies with the SEO for managing the *quantity* of produced water.<sup>74</sup> The WOGCC is the permitting body for well construction.<sup>75</sup> Beyond permitting, the WOGCC also manages, reclamation, well spacing and density of well sites.<sup>76</sup> Finally, the WOGCC manages the permitting of “off-channel reservoir containment pits when the only use of the water will be ‘water produced in the production of coalbed methane gas.’”<sup>77</sup>

The current management scheme has sparked heated debate and spawned lawsuits by private citizens and interest groups who are unsatisfied with the manner in which CBM produced water is currently managed.<sup>78</sup> As in all conflicts there are two sides.<sup>79</sup> One side asserts that agencies handle water quality and quantity issues satisfactorily within the existing framework.<sup>80</sup> Others argue CBM produced water causes a myriad of serious problems that the current management scheme cannot and has not effectively handled.<sup>81</sup>

The serious problems caused by CBM water are changing Wyoming’s landscape right now.<sup>82</sup> These include effects of water quality and quantity to those downstream and the surrounding ecosystem.<sup>83</sup> The ecosystem, in many instances, is not meant to hold the continuous heavy flows produced by CBM

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<sup>72</sup> Wyoming Department of Environmental Quality, WYPDES Coalbed Methane Permits, [http://deq.state.wy.us/wqd/WYPDES\\_Permitting/WYPDES\\_cbm/cbm.asp](http://deq.state.wy.us/wqd/WYPDES_Permitting/WYPDES_cbm/cbm.asp) (last visited Mar. 22, 2009).

<sup>73</sup> Clean Water Act, 33 U.S.C. § 1342 (2008).

<sup>74</sup> State Engineer’s Office, <http://seo.state.wy.us/> (last visited Mar. 22, 2009). The SEO requires an application to appropriate groundwater for each CBM well. *Id.*

<sup>75</sup> Ruckelshaus Report, *supra* note 1, at 34.

<sup>76</sup> *Id.*

<sup>77</sup> Wyoming Oil and Gas Conservation Commission, <http://wogcc.state.wy.us/> (last visited Mar. 22, 2009).

<sup>78</sup> One such interest group is the Powder River Basin Resource Council, <http://www.powderriverbasin.org>. Another is the Wyoming Outdoor Council, <http://www.wyomingoutdoorcouncil.org>. *See also* *Wyo. Outdoor Council*, 351 F.Supp.2d at 1232.

<sup>79</sup> Ruckelshaus Report, *supra* note 1, at 1–2.

<sup>80</sup> *Id.*

<sup>81</sup> *Id.*; *see also* Darrin, *supra* note 5, at 288–290; Buccino & Jones, *supra* note 3, at 561–563.

<sup>82</sup> *See generally* Ruckelshaus Report, *supra* note 1; Buccino & Jones, *supra* note 3.

<sup>83</sup> Ruckelshaus Report, *supra* note 1, at 22.

wells.<sup>84</sup> Higher than normal flows cause stream bank erosion and disrupt existing ecosystems.<sup>85</sup> High flows combined with varying degrees of water quality often have negative impacts on the environment.<sup>86</sup> These negative impacts include damage to downstream crops and soils because of relatively high levels of saline in produced water, as well as salt deposition.<sup>87</sup>

### C. *Wyoming State Engineer's Office Management of Produced Water*

Applications by producers to drill wells for the production of CBM are permitted as groundwater wells by the Wyoming State Engineer's Office.<sup>88</sup> The State Engineer is required to grant such a permit application "as a matter of course" if the use is considered a "beneficial use."<sup>89</sup>

Pursuant to the Wyoming Constitution and State statutes, the State Engineer has a duty to take into consideration the public interest prior to approving an application for a well.<sup>90</sup> This comment surveys Wyoming's history regarding the public interest review in the issuance of water permits, as well as how surrounding states have historically applied this doctrine. After a period of relative calm, litigation involving the "public interest review" is heating up.<sup>91</sup>

#### 1. *Separation of Water from Coalbed Methane as a Beneficial Use*

Wyoming, a leader in western water law, has always applied the prior appropriation doctrine to administer water rights.<sup>92</sup> The prior appropriation doctrine was developed to make the best use of a scarce resource in the arid western states, and the concept of "beneficial use" is fundamental to the prior appropriation system.<sup>93</sup> The concept of public interest review must be viewed in the context of western water law. A Wyoming statute states, "[b]eneficial use is the

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<sup>84</sup> *Id.* at 20.

<sup>85</sup> *Id.*

<sup>86</sup> *Id.* at vi.

<sup>87</sup> *Id.* at 20.

<sup>88</sup> State Engineer's Office, Guidance: CBM/Ground Water Permits, <http://seo.state.wy.us/> (last visited Mar. 22, 2009).

<sup>89</sup> *Id.*

<sup>90</sup> WYO. CONST. art. VIII, § 3; WYO. STAT. ANN. § 41-4-503 (2007); WYO. STAT. ANN. § 41-3-931 (2007); *see also infra* notes 99-113 and accompanying text.

<sup>91</sup> *West v. Tyrrell*, In The District Court, First Judicial District, County of Laramie, Docket No. 170-063 (Filed May 30, 2008). This recent lawsuit was filed in Wyoming based on the public interest review. *Id.*

<sup>92</sup> Mark Squillace, *A Critical Look at Wyoming Water Law*, 24 LAND & WATER L. REV. 308, 308 (1989).

<sup>93</sup> *Id.* at 323.

basis, the measure and the limit of the right to use water. . . .”<sup>94</sup> This requirement dictates that appropriated water be put to a use that has been deemed “beneficial.” Notably, CBM production was not considered a beneficial use of water until recently.<sup>95</sup> The evolution of how the SEO came to have authority to permit CBM wells is significant because no other state takes this view.<sup>96</sup>

The State Engineer has classified water produced in CBM production as a beneficial use of water:

The State Engineer’s Office considers CBM production different than traditional natural gas production. It is similar in that the water is not the object of production; the methane reserve is the target. CBM production is different than conventional gas production due to the necessity for production of water for the production of the gas resource, thus the production of water is a requirement of the production cycle.

The intentional production, or appropriation, of ground water for the CBM production led to the designation of CBM as a *beneficial use* of water and subsequently, to a requirement for a permit to appropriate ground water.

Coal seams in many areas of Wyoming have been and continue to be important sources of ground water to appropriators for uses including, but not limited to, stock and domestic. Wyoming water law requires that water rights be administered on the basis of *prior appropriation*, giving rise to the necessity of permitting all beneficial uses from the water source in question.<sup>97</sup>

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<sup>94</sup> WYO. STAT. ANN. § 41-3-101 (2007).

<sup>95</sup> State Engineer’s Office, Guidance: CBM/Ground Water Permits, [http://seo.state.wy.us/PDF/GW\\_CBM%20Guidance.pdf](http://seo.state.wy.us/PDF/GW_CBM%20Guidance.pdf) (last visited Mar. 22, 2009).

<sup>96</sup> Darrin, *supra* note 5, at 323-324. Darrin notes:

Wyoming, unlike any other western state, places CBM water quantity jurisdiction with the state engineer. This model [prior appropriation] does not fit CBM production because . . . only a small percentage of CBM byproduct water in Wyoming can be beneficially used itself. As a result, the rest is wasted. Wyoming did not need to follow this path. It too has the byproduct provision in its oil and gas statute, which vests jurisdiction with the state oil and gas commission to oversee the ‘[d]isposal of salt water . . . which [is] uniquely associated with exploration and production operations.’ However, given that the early wells produced so much water, without any gas, for long periods of time, the State Engineer assumed jurisdiction over the initial diversion from the ground.

*Id.*

<sup>97</sup> State Engineer’s Office, Guidance: CBM/Ground Water Permits, [http://seo.state.wy.us/PDF/GW\\_CBM%20Guidance.pdf](http://seo.state.wy.us/PDF/GW_CBM%20Guidance.pdf) (last visited Mar. 22, 2009).

The definition of CBM production as a beneficial use of water is important to the discussion because it provides the SEO with authority to control produced water. Because the SEO has authority to regulate CBM produced water, the SEO also has a duty to conduct a public interest review in the course of the CBM permitting process.<sup>98</sup>

#### *D. Public Interest Review*

As if to affirm the importance of water in Wyoming, the State's founders imbedded some foundational principles of water law in the Wyoming Constitution.<sup>99</sup> One of these fundamental principles, considered so vital at the birth of Wyoming, is the concept of the "public interest review."<sup>100</sup> The public interest review has become somewhat of a legal flashpoint recently after a long period of relative dormancy.<sup>101</sup> This section explores the concept of the public interest review generally.<sup>102</sup> A discussion of what this review may require of the State Engineer follows in the analysis section.<sup>103</sup>

Water in Wyoming belongs to the state and is retained as property of the state.<sup>104</sup> The State Engineer is charged with the great responsibility of overseeing the appropriation, distribution, and diversion of the state's water.<sup>105</sup> Beginning from this premise—that waters within the state belong to the state—it seems natural that there is a public interest review requirement interposed in the administration of the state's water. While individuals are given a legal right to use water, ultimately the water belongs to the people collectively, and as such, the people's interests should be considered.<sup>106</sup>

This comment asserts that the Wyoming State Engineer has an *affirmative duty* to consider the public interest when reviewing an application for appropriation.

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<sup>98</sup> See *infra* notes 107–113 and accompanying text.

<sup>99</sup> WYO. CONST. art. VIII, § 1; WYO. CONST. art. VIII, § 2; WYO. CONST. art. VIII, § 3.

<sup>100</sup> WYO. CONST. art. VIII, § 1; WYO. CONST. art. VIII, § 2; WYO. CONST. art. VIII, § 3.

<sup>101</sup> Douglas L. Grant, *Two Models of Public Interest Review of Water Allocation in the West*, 9 U. DENV. WATER L. REV. 485, 516 (2006); see also *West v. Tyrrell*, In The District Court, First Judicial District, County of Laramie, Docket No. 170-063 (Filed May 30, 2008).

<sup>102</sup> See *infra* notes 104–130 and accompanying text.

<sup>103</sup> See *infra* notes 196–214 and accompanying text.

<sup>104</sup> WYO. CONST. art. VIII, § 1 ("The water of all natural streams, springs, lakes or other collections of still water, within the boundaries of the state, are hereby declared to be the property of the state.").

<sup>105</sup> WYO. CONST. art. VIII, § 2.

<sup>106</sup> See Ronald R. Robie, *The Public Interest in Water Rights Administration*, 23 ROCKY MTN. MIN. L. INST. 917, 921–923 (1977).

This duty comes from both the Wyoming Constitution and statutes.<sup>107</sup> Both the constitutional and statutory provisions give the SEO the authority to deny an otherwise acceptable application to appropriate water. The constitutional provision states that the SEO shall not deny an appropriation unless “such denial is demanded by the public interest.”<sup>108</sup> The language of the two statutory provisions pertaining to appropriations differ.<sup>109</sup> The first appears to be discretionary and the second appears to create an affirmative duty for the SEO to deny an otherwise valid appropriation that is detrimental to the public interest.<sup>110</sup> The language of the first statute reads, “[i]f the state engineer finds that to grant the application as a matter of course, would not be in public’s water interest, then he *may* deny the application subject to review at the next meeting of the state board of control”; as opposed to the second statute, which reads “where the proposed use conflicts with existing rights, or threatens to prove detrimental to the public interest, it *shall be the duty* of the state engineer to reject such application and refuse to issue the permit asked for.”<sup>111</sup>

Whether the SEO’s responsibility to deny a permit that does not comport with the public interest is affirmative or discretionary, the SEO must conduct some

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<sup>107</sup> WYO. STAT. ANN. § 41-3-931 (2007).

An application for a permit for a well in any areas not designated as a critical area shall be granted as a matter of course, if the proposed use is beneficial and, if the state engineer finds that the proposed means of diversion and construction are adequate. If the state engineer finds that to grant the application as a matter of course, would not be in public’s water interest, then he may deny the application subject to review at the next meeting of the state board of control. If the state engineer shall find that the proposed means of diversion or construction are inadequate, or if the application is otherwise defective, he may return the application for correction. If such correction is not made within ninety (90) days, the state engineer may cancel the application.

WYO. STAT. ANN. § 41-4-503 (2007).

All applications which shall comply with the provisions of this chapter, and with the regulations of the engineer’s office, shall be recorded in a suitable book kept for that purpose; and it shall be the duty of the state engineer to approve all applications made in proper form, which contemplate the application of the water to a beneficial use and where the proposed use does not tend to impair the value of existing rights, or be otherwise detrimental to the public welfare. But where there is no unappropriated water in the proposed source of supply, or where the proposed use conflicts with existing rights, or threatens to prove detrimental to the public interest, it shall be the duty of the state engineer to reject such application and refuse to issue the permit asked for.

WYO. CONST. art. VIII, § 3 (“Priority of appropriation for beneficial uses shall give the better right. No appropriation shall be denied except when such denial is demanded by the public interest.”).

<sup>108</sup> WYO. CONST. art. VII, § 3.

<sup>109</sup> See *supra* note 107 and accompanying text.

<sup>110</sup> *Id.*

<sup>111</sup> WYO. STAT. ANN. § 41-3-931 (2007) (emphasis added); WYO. STAT. ANN. § 41-4-503 (2007) (emphasis added).

form of public interest review to determine whether such an appropriation is, or is not, in the public interest.<sup>112</sup> Without conducting such a review, the SEO has no basis for determining whether the application is, or is not, in the public's interest, and subsequently, whether to approve or deny the appropriation. Therefore, the SEO has an affirmative duty to conduct a public interest review when evaluating pending appropriations. The SEO is not currently conducting an identifiable public interest review and should begin viewing CBM well applications through the lens of what is in the public interest.<sup>113</sup>

Black's Law Dictionary defines the public interest as, "(1) [t]he general welfare of the public that warrants recognition and protection. (2) Something in which the public as a whole has a stake; esp., an interest that justifies governmental regulation."<sup>114</sup> Dan A. Tarlock gives the following definition of the public interest review:

Water is both a private and public resource. Private rights may be acquired by putting water to beneficial use, but states have always reserved the power to limit private use. This power extends to the protection of other users and to the advancement of state or community interest in water allocation.<sup>115</sup>

Generally, a review of the public interest allows the state administrative agency to deny an application for a water right when unappropriated water is available, or to a senior appropriation in favor of a junior user.<sup>116</sup> Initially, this review came down to a cost-benefit analysis, in which the state administrator compared the competing uses and chose the use that he deemed to maximize benefits to the state.<sup>117</sup> As the view of beneficial uses of water expanded to include societies' changing environmental values, the public interest review changed as well. Tarlock notes, "[t]he public interest limitation has taken on added significance as states have incorporated environmental values into water resources allocation and have begun to formulate state water plans that are more than laundry lists of desired projects."<sup>118</sup>

Douglas L. Grant succinctly categorizes historic application of the public interest review using two models: the maximum-benefits model and the other-laws model of review.<sup>119</sup> He defines the maximum-benefits model:

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<sup>112</sup> See WYO. STAT. ANN. § 41-4-503 (2007); WYO. STAT. ANN. § 41-3-931 (2007).

<sup>113</sup> Darrin, *supra* note 5, at 335.

<sup>114</sup> BLACK'S LAW DICTIONARY, 1244 (7th ed. 1999).

<sup>115</sup> A. DAN TARLOCK, LAW OF WATER RIGHTS AND RESOURCES, § 5:51 (2008).

<sup>116</sup> *Id.* § 5:52.

<sup>117</sup> *Id.*

<sup>118</sup> *Id.*

<sup>119</sup> Grant, *supra* note 101, at 488.

[t]he core idea behind the maximum-benefits model is that the legislature intended the permitting agency to use public interest review of applications as a tool to maximize the benefits to the community from the water resource. For the agency to do that, it must ascertain a project's benefits and costs, not only to the applicant but also to others in the community.<sup>120</sup>

This contrasts with application of the other-laws model in which the legislature only intended the state engineer to apply the state's water laws, without conducting a cost-benefit analysis.<sup>121</sup> Maximization of benefits to the community is not considered in this model.<sup>122</sup> Rather, applications are granted if they meet the requirements of state law.<sup>123</sup>

A survey of how western states apply the public interest review invites some speculation because the concept is rarely defined and, even then, it is defined with open-ended factors.<sup>124</sup> The ubiquity of the public interest review among western states leads to the conclusion that the writers of each state's water laws saw the public interest review as a vital tool.<sup>125</sup> Oregon, Idaho and Alaska, among others, have defined the public interest review, though Oregon led the way by providing a definition almost 40 years prior to any other state.<sup>126</sup> This early definition called for:

[c]onserving the highest use of the water for all purposes, including . . . public recreation, protection of commercial and game fishing and wildlife . . . or any other beneficial use to which the water may be applied for which it may have a special value to the public.<sup>127</sup>

Alaska followed suit in 1966 by providing a definition of the public interest that was drafted by the former dean of the Wyoming College of Law and Wyoming

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<sup>120</sup> *Id.*

<sup>121</sup> *Id.* at 489.

<sup>122</sup> *Id.*

<sup>123</sup> *Id.*

<sup>124</sup> *See Grant, supra* note 101, at 486; Squillace, *supra* note 92, at 322.

<sup>125</sup> ALASKA STAT. § 46.15.080 (2008); CAL. WATER CODE § 1253 (West 2009); HAW. CONST. art. XI, §§ 1, 7; IDAHO CODE ANN. § 42-222 (2009); MONT. CODE ANN. § 85-2-311 (2008); N.D. CENT. CODE § 61-04-06 (2008); NEB. REV. STAT. § 46-2,116 (2008); N.M. STAT. 1978 § 72-5-7 (2009); OR. REV. STAT. § 537.230 (2009); TEX. WATER CODE ANN. § 11.122(b) (2007); UTAH CODE ANN. § 73-3-8 (2008); REV. CODE WASH. ANN. § 90.03.290 (2009).

<sup>126</sup> Act of Feb. 28, 1929, ch. 245, § 1, 1929 Or. Laws 252-53 (codified as amended at OR. REV. STAT. § 537.170(8)(a) (2005)).

<sup>127</sup> *Id.*

water law archetype, Frank J. Trelease.<sup>128</sup> The Alaska statute lists eight factors to be considered by the state engineer in deciding whether to permit an application for a water right. These factors are:

- (1) the benefit to the applicant resulting from the proposed appropriation;
- (2) the effect of the economic activity resulting from the proposed appropriation;
- (3) the effect on fish and game resources and on public recreational opportunities;
- (4) the effect on public health;
- (5) the effect of loss of alternate uses of water that might be made within a reasonable time if not precluded or hindered by the proposed appropriation;
- (6) harm to other persons resulting from the proposed appropriation;
- (7) the intent and ability of the applicant to complete the appropriation; and
- (8) the effect upon access to navigable or public water.<sup>129</sup>

Even with the guidance of the factors listed above, application of the public interest review remains nebulous.<sup>130</sup> Few courts have addressed the application of the public interest review, but the following decisions give valuable insight.

#### *E. Public Interest Review Case Law*

An early case examining the public interest review is *Young & Norton v. Hinderlider*.<sup>131</sup> In this 1910 case from New Mexico, the territorial engineer, confronted with conflicting applications for the same water, chose Young's later appropriation, over Henderlider's, based on public interest considerations.<sup>132</sup> The territorial engineer stated, "it would not be to the best interests of the public to approve the application of M.C. Hinderlider, thereby forcing the protestants to

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<sup>128</sup> See Frank J. Trelease, *Alaska's New Water Use Act*, 2 LAND & WATER L. REV. 1, 26 (1967).

<sup>129</sup> ALASKA STAT. § 46.15.080 (2008).

<sup>130</sup> See generally Grant, *supra* note 101.

<sup>131</sup> *Young & Norton v. Hinderlider*, 110 P. 1045 (N.M. 1910).

<sup>132</sup> *Id.* at 1047.



pay double price for their water rights.”<sup>133</sup> Hinderlider appealed the decision to the board of water commissioners, who reversed the territorial engineer, and used a narrower construction of public interest review stating, “[t]he board is of the opinion that the statute contemplated that the territorial engineer may reject an application if he finds that the project would be contrary to the public interests, in that it would be a menace to the public health or safety.”<sup>134</sup>

*Hinderlider* exemplifies how public interest review can be narrowly or broadly interpreted.<sup>135</sup> The territorial engineer appeared to be applying a model of public interest review in which he intended to maximize the benefit of the water to the public, which here, was in the form of lower priced water.<sup>136</sup> The board, on the other hand, seemed to rely strictly on the prior appropriation system basing their decision on the fact that Hinderlider’s project was feasible, first, and that there was unappropriated water.<sup>137</sup> The board narrowly construed public interest statute, finding it should only be applied to protect the public health and safety.<sup>138</sup> The New Mexico Supreme Court remanded the case with instructions to the district court to conduct a seemingly detailed cost-benefit analysis of the projects based on the parties’ arguments.<sup>139</sup> It is this type of cost-benefit analysis that is argued for here.

A seminal, and much more recent, case regarding public interest review is the Idaho case *Shokal v. Dunn*.<sup>140</sup> Though Idaho did not require the application of a public interest review until 1978, it did not take long before a public interest case made it to the courts.<sup>141</sup> In *Shokal*, the dispute involved the granting of a permit for the withdrawal of 100 cubic feet per second from a creek.<sup>142</sup> The Idaho Supreme Court explored how the public interest review requirement should be interpreted.<sup>143</sup> The court began by surveying the public interest requirements of other western states and adopted Alaska’s public interest criteria as a starting point for the consideration.<sup>144</sup> The court remanded the case to the Department of Water Resources to review the permit through a cost-benefit analysis, which

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<sup>133</sup> *Id.*

<sup>134</sup> *Id.* at 1048.

<sup>135</sup> *See generally id.*

<sup>136</sup> *Hinderlider*, 110 P. at 1048.

<sup>137</sup> *Id.*

<sup>138</sup> *See id.*

<sup>139</sup> *Id.* at 1050–51.

<sup>140</sup> *Shokal v. Dunn*, 707 P.2d 441 (Idaho 1985).

<sup>141</sup> Grant, *supra* note 101, at 501.

<sup>142</sup> *Shokal*, 107 P.2d at 337.

<sup>143</sup> *Id.* at 337–341.

<sup>144</sup> *Id.* at 337–339.

was to include, but not be limited to, factors outlined by the court, which were essentially the Alaska factors.<sup>145</sup> In adopting the Alaska factors and remanding the case so that a cost-benefit analysis could be conducted, the court in *Shokal* adopted a maximum-benefits model of review.<sup>146</sup> In lieu of specific statutory language or case law on the subject regarding how the state engineer is to apply the public interest review in Wyoming, the SEO, legislature, and courts may look to the case law of surrounding states.<sup>147</sup>

#### *F. Recent Wyoming Public Interest Review Case Law*

In June 2007, four residents of the Powder River Basin filed a case against the Wyoming State Engineer and Board of Control.<sup>148</sup> The suit alleged the SEO and Board of Control's actions violated the Wyoming Constitution and laws.<sup>149</sup> In their complaint, plaintiffs, the Turners and Wests, collectively alleged that the discharge of CBM water damaged vegetation, soil, and their ability to irrigate their ranches.<sup>150</sup> Plaintiffs further alleged that CBM "water drilling has depleted their ground water wells."<sup>151</sup>

Specifically, "[p]laintiffs claim[ed] the SEO's current practice of permitting and regulating the production and storage of water associated with coalbed methane (CBM) fail[ed] to consider the various public interests affected by CBM production."<sup>152</sup> The Wests and Turners sought a declaratory judgment holding that the State Engineer's permitting practices for CBM wells, which fail to consider the public interest, were in violation of the Wyoming Constitution, Wyoming Statutes, plaintiff's due process rights, and the Wyoming Administrative Procedure Act.<sup>153</sup>

In response to the plaintiffs' complaint, the State Engineer and Board of Control filed a motion to dismiss.<sup>154</sup> The state raised two primary arguments asserting, "[p]laintiffs have not presented a justiciable case, and any action by this court would invade the provinces of the Legislative and Executive branches

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<sup>145</sup> *Id.* at 441.

<sup>146</sup> See generally Grant, *supra* note 101.

<sup>147</sup> Another case addressing the public interest with a powerful dissent is *Pyramid Lake Paiute Tribe of Indians v. Washoe County*, 918 P.2d 697 (Nev. 1996).

<sup>148</sup> West v. Tyrrell, In The District Court, First Judicial District, County of Laramie, Docket No. 170-063 (filed May 30, 2008).

<sup>149</sup> *Id.* at 1.

<sup>150</sup> *Id.* at 7.

<sup>151</sup> *Id.*

<sup>152</sup> *Id.*

<sup>153</sup> West v. Tyrrell, at 1.

<sup>154</sup> *Id.*

of the Wyoming Government.”<sup>155</sup> In the alternative, the SEO argued, “the court should exercise prudential restraint and dismiss the current action.”<sup>156</sup> The court interpreted these assertions as two arguments and addressed both in turn.

On the first issue the state appeared to be arguing that the legislature is aware of problems associated with CBM development and it holds the sole authority to act, not the court.<sup>157</sup> Plaintiffs countered this argument by asserting the separation of powers doctrine of checks and balances.<sup>158</sup> Plaintiffs argued that they simply sought the court to rule on “the validity and construction of agency regulations.”<sup>159</sup> Ultimately, the court agreed with the Plaintiffs noting:

Plaintiffs are not seeking to have the Court create new regulations on its own. Instead, plaintiffs seek a declaratory judgment on whether the current permitting process is in accordance with the Wyoming Constitution and laws. Such a determination is within the power of the Court if the Plaintiffs have standing to bring the current action.<sup>160</sup>

The court then addressed the issue of whether the plaintiffs had standing to bring the action against the State Engineer and Board of Control.<sup>161</sup> The court first laid out a test for standing from a United States Supreme Court case, *Lujan v. Defenders of Wildlife*.<sup>162</sup> However, the court did not apply the *Lujan* test, but instead applied a test set forth under the Wyoming Uniform Declaratory Judgments Act. This is a four-element test and the court took each in turn. The elements are:

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<sup>155</sup> *Id.* at 1–2.

<sup>156</sup> *Id.* at 2.

<sup>157</sup> *Id.*

<sup>158</sup> *West v. Tyrrell*, at 4.

<sup>159</sup> *Id.*

<sup>160</sup> *Id.*

<sup>161</sup> *Id.*

<sup>162</sup> *Lujan v. Defenders of Wildlife*, 504 U.S. 555, 560–561 (1992). The elements of standing under the *Lujan* test are:

First, the plaintiff must have suffered ‘injury in fact’—an invasion of a legally protected interest which is (a) concrete and particularized and (b) ‘actual or imminent, not ‘conjectural’ or ‘hypothetical.’” Second, there must be a causal connection between the injury and the conduct complained of—the injury has to be ‘fairly . . . traceable to the challenged action of the defendant, and not . . . the result of the independent action of some third party not before the court.’ Third, it must be ‘likely,’ as opposed to merely ‘speculative,’ that the injury will be ‘redressed by a favorable decision.’

*Id.*

- (1) The parties must have existing and genuine, as distinguished from theoretical, rights or interests.
- (2) The controversy must be one upon which the judgment of the court may effectively operate, as distinguished from a debate or argument evoking a purely political, administrative, philosophical or academic conclusion.
- (3) It must be a controversy the judicial determination of which will have the force and effect of a final judgment in law or decree in equity upon the rights, status or other legal relationships of one or more of the real parties in interest, or, wanting these qualities to be of such great and overriding public moment as to constitute the legal equivalent of all of them.
- (4) The proceedings must be genuinely adversary in character and not a mere disputation, but advanced with sufficient militancy to engender a thorough research and analysis of the major issues.<sup>163</sup>

The court found that the plaintiffs had satisfied elements one, three, and four, but ultimately found element two unsatisfied.<sup>164</sup> The court stated that for the purposes of the motion to dismiss the defendants had admitted their actions had caused injury to the plaintiffs, so the first element was met.<sup>165</sup> Further, the third element was met because finding a solution to issues associated with CBM water was a constitutional question of great public importance, and that the fourth element was met because the proceedings were genuinely adversarial.<sup>166</sup> As to the second element, the court decided that a decision would not resolve the controversy.<sup>167</sup> The court concluded that a decision would not only not resolve the instant case but that, “. . . any decision by this court most certainly will evoke political, administrative, philosophical, and/or academic debate or argument.”<sup>168</sup>

Because the Turners' and Wests' case was dismissed for lack of standing, the court did not reach the merits of the case and so the underlying issues remain unresolved. The Wests and Turners have appealed their case to the Wyoming Supreme Court.

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<sup>163</sup> *West v. Tyrell*, at 7 (citing *Pedro/Aspen, Ltd. v. Bd. of County Comm'rs for Natrona County*, 94 P.3d 412, 415 (Wyo. 2004)).

<sup>164</sup> *Id.* at 8.

<sup>165</sup> *Id.*

<sup>166</sup> *Id.*

<sup>167</sup> *Id.*

<sup>168</sup> *West v. Tyrell*, at 8.

### G. Current Actions Addressing the Discharge of Produced Water in Wyoming

The issues associated with CBM produced water have not escaped the State Engineer, nor the legislature.<sup>169</sup> The SEO has taken steps to tackle these issues by addressing CBM producers whose wells produce large quantities of water for long periods with no significant gas production.<sup>170</sup> The legislature has acknowledged the issues through the creation of the Wyoming Coal Bed Natural Gas Water Management Task Force (“Task Force”). The Governor also commissioned a report entitled, “Water Production from Coalbed Methane Development in Wyoming: A Summary of Quantity, Quality and Management Options.”<sup>171</sup>

The Task Force was created in May of 2006 to address issues associated with CBM produced water.<sup>172</sup> The Task Force was charged with a two-part mission: (1) to review both statutes and regulations relating to CBM produced water, and (2) to evaluate “produced water management and alternatives and options currently available to or used by the coalbed natural gas industry.”<sup>173</sup> The Task Force was composed of major players in the management structure of produced water, members of the Legislature, interest groups, and the public.<sup>174</sup> The Task Force proposed some interesting solutions and new laws to better address the management of produced water.<sup>175</sup>

The Task Force made a number of recommendations for the management of CBM produced water, including proposing a pipeline be constructed to facilitate the use or retention of produced water.<sup>176</sup> The task force also recommended that the SEO establish a “threshold water-to-gas ratio necessary for establishing or continuing beneficial use after a period of time.”<sup>177</sup>

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<sup>169</sup> See Wyoming CBM Water management Task Force, Final Recommendations, Power Point, <http://governor.wy.gov/Media.aspx?MediaId=214> (last visited Mar. 22, 2009); Letter by the State Engineer, Review of Existing Coalbed Methane (CBM) Permits to Verify Beneficial Use of Water, (Dec. 11, 2007), <http://seo.state.wy.us/Press/2007/121807.aspx> (last visited Mar. 22, 2009).

<sup>170</sup> See *infra* notes 169–186 and accompanying text.

<sup>171</sup> Ruckelshaus Report, *supra* note 1.

<sup>172</sup> Wyoming Coal Bed Natural Gas Water Management Task Force, Interim Report, (December 14, 2006), <http://209.85.173.104/search?q=cache:zopfXiyKvykJ:cbm.moose.wy.gov/documents/FinalInterimReport.pdf+Wyoming+CBM+Task+Force&hl=en&ct=clnk&cd=5&gl=us&client=firefox-a> (last visited Mar. 22, 2009).

<sup>173</sup> *Id.*

<sup>174</sup> *Id.* The Task Force consisted of 15 members: the director of the Wyoming Department of Environmental Quality, Supervisor of the Wyoming Oil and Gas Conservation Commission, Chairman of the Wyoming Pipeline Authority, Wyoming State Engineer, three members representing the coal bed natural gas industry, four members from the Legislature, and one member from the public at large. *Id.*

<sup>175</sup> Wyoming CBM Water management Task Force, Final Recommendations, Power Point, <http://governor.wy.gov/Media.aspx?MediaId=214> (last visited Mar. 22, 2009).

<sup>176</sup> *Id.*

<sup>177</sup> *Id.*

The State Engineer has acknowledged the fact that CBM wells can discharge water for years with very little to no gas production to show for the discharged water.<sup>178</sup> In December 2007, the State Engineer sent a letter to ten CBM companies requiring those companies to explain by February 1, 2008, how water being discharged from certain wells was being put to a beneficial use when no gas had been produced over the life of the well.<sup>179</sup> This review of CBM groundwater permits was sparked because, “[a]pproval of a permit to appropriate ground water for CBM production carries with it an expectation that production of gas will proceed in a timely fashion and in such a way as to minimize the impact to the ground water resource.”<sup>180</sup> In this letter, the State Engineer reserved the right to cancel permits where CBM operators could not show that the water from their wells was being put to the beneficial use of obtaining gas.<sup>181</sup>

This “show cause” letter was sent to appropriators regarding 296 wells.<sup>182</sup> As a result of this letter numerous actions were taken by the SEO.<sup>183</sup> The SEO issued a second round of show cause letters in August 2008.<sup>184</sup> These letters were sent to forty-three companies regarding a total of 992 wells.<sup>185</sup> This action indicates that the SEO acknowledges some level of water to gas ratio should be enforced, so that CBM wells do not produce water and no, or very little, gas for long periods.<sup>186</sup>

### III. ANALYSIS

The State Engineer and Board of Control should act to reduce the virtually unlimited discharge of produced water.<sup>187</sup> This comment argues the SEO should apply a maximum-benefits model of public interest review as a limit to the virtually

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<sup>178</sup> Letter by the State Engineer, Review of Existing Coalbed Methane (CBM) Permits to Verify Beneficial Use of Water, December 11, 2007, <http://seo.state.wy.us/Press/2007/121807.aspx> (last visited Mar. 22, 2009).

<sup>179</sup> *Id.*

<sup>180</sup> *Id.*

<sup>181</sup> *Id.*

<sup>182</sup> Telephone Interview with Harry C. LaBonde, Deputy State Engineer, Wyoming State Engineers Office (Mar. 3, 2009).

<sup>183</sup> *Id.* Of the 296 wells at issue in the letters, 197 have had their permits cancelled or are in the process of canceling the permit. *Id.* The permits of 86 wells have been suspended. *Id.* There was a data mistake on 9 permits and 4 permits are still under review. *Id.*

<sup>184</sup> *Id.*

<sup>185</sup> *Id.* The SEO cancelled 192 of these permits and suspended 255 more. *Id.* There was a data error regarding 215 wells that should not have been on the list, while 39 of the wells rarely pumped and were also suspended. *Id.* Finally, 212 of the permits remain active and 79 are still under review. *Id.*

<sup>186</sup> *See supra* notes 178–185 and accompanying text.

<sup>187</sup> *See infra* notes 205–238 and accompanying text.

unlimited discharge of CBM produced water in Wyoming because this discharge does not comport with the public interest.<sup>188</sup> The state legislature should revisit and clarify the SEO's duties pursuant to the public interest review and if the legislature fails in this regard, the SEO should promulgate a set of factors that can be applied.<sup>189</sup> Finally, Wyoming courts should enforce the SEO's duty to conduct a public interest review and should clarify what the review requires, if the SEO and legislature continue to fail to act.<sup>190</sup>

The analysis section begins by examining how the classification of CBM production as a beneficial use of water provides the SEO with the authority to regulate CBM wells.<sup>191</sup> This comment asserts that the SEO has an affirmative duty to consider the public interest when evaluating an application for an appropriation.<sup>192</sup> Since the SEO has taken management responsibility of CBM wells, the SEO has a duty to conduct a public interest review regarding CBM well permitting.<sup>193</sup> A discussion follows of what this review could entail.<sup>194</sup> This comment suggests that the SEO apply a model of public interest review that takes into consideration the full costs and benefits of CBM production.<sup>195</sup>

#### A. *Application of the Beneficial Use Principle*

Though the concept of "beneficial use" is not at the core of this comment it is vital to the discussion because defining CBM production as a beneficial use of water provides the SEO with the authority to regulate the quantity of water discharged.<sup>196</sup> Because the State Engineer has classified CBM production as a "beneficial use," each CBM well is required to be permitted by the SEO.<sup>197</sup> The SEO should have control over CBM water because CBM water is Wyoming's groundwater and the State Engineer is the steward of Wyoming's water.<sup>198</sup>

Though the SEO has identified the production of CBM as a beneficial use, he has also introduced the concept of a "further beneficial use."<sup>199</sup> The idea behind a

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<sup>188</sup> See *infra* notes 215–238 and accompanying text.

<sup>189</sup> Squillace, *supra* note 92, at 322.

<sup>190</sup> See *infra* notes 239–241 and accompanying text.

<sup>191</sup> See *infra* notes 196–204 and accompanying text.

<sup>192</sup> See *supra* notes 107–111 and accompanying text.

<sup>193</sup> See *supra* notes 88–98 and accompanying text.

<sup>194</sup> See *infra* notes 205–238 and accompanying text.

<sup>195</sup> *Id.*

<sup>196</sup> See *infra* notes 197–204 and accompanying text.

<sup>197</sup> State Engineer's Office, *Guidance: CBM/Ground Water Permits*, [http://seo.state.wy.us/PDF/GW\\_CBM%20Guidance.pdf](http://seo.state.wy.us/PDF/GW_CBM%20Guidance.pdf) (last visited Mar. 22, 2009).

<sup>198</sup> See MacKinnon & Fox, *supra* note 2, at 378.

<sup>199</sup> *Id.*; State Engineer's Office, *Guidance: CBM/Ground Water Permits*, [http://seo.state.wy.us/PDF/GW\\_CBM%20Guidance.pdf](http://seo.state.wy.us/PDF/GW_CBM%20Guidance.pdf) (last visited Mar. 22, 2009).

“further beneficial use” is that water discharged in the production of CBM, thus meeting the beneficial use requirement, can be put to a “further beneficial use” by a subsequent appropriator who has obtained a water use permit.<sup>200</sup> Despite the challenges in classifying the production of CBM as a beneficial use of water, this is a reasonable determination by the state’s administrative agency charged with the management of water.<sup>201</sup> This classification provides the SEO with the authority to regulate the *quantity* of produced water discharged.<sup>202</sup> Though reasonable, the SEO should enforce a strict amount limitation for the withdrawal of water to obtain CBM.<sup>203</sup> The SEO can use authority under the public interest review to establish this limitation.<sup>204</sup>

*B. Application of the Public Interest Review in Wyoming to Produced Water*

Application of the public interest review in Wyoming has changed over time. Originally, the Wyoming SEO applied a version of the maximum-benefits model, where the SEO conducted a cost-benefit analysis.<sup>205</sup> The current SEO appears to be following the other-laws model, in which the SEO approves permits for unappropriated water that meet the definition of a beneficial use.<sup>206</sup> The maximum-benefits approach should be applied by the SEO because a significant amount of Wyoming’s groundwater is being discharged so that gas may be obtained.<sup>207</sup> Further, of the water that is discharged in the Powder River Basin, only a fraction is being put to a “further beneficial use,” and aquifers that could serve as valuable sources of water for the people of Wyoming are being dewatered for the sole purpose of obtaining CBM.<sup>208</sup>

What is in the public interest does not remain static.<sup>209</sup> As noted earlier, one definition of the public interest is “the general welfare of the public that

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<sup>200</sup> See MacKinnon & Fox, *supra* note 2, at 379.

<sup>201</sup> *Id.*

<sup>202</sup> *Id.*

<sup>203</sup> See Darrin, *supra* note 5, at 330–31. The classification of CBM production as a beneficial use of water is perhaps suspect because much of the water is not put to a further beneficial use and arguably wasted. *Id.*

<sup>204</sup> See *supra* note 106–112 and accompanying text.

<sup>205</sup> See *Big Horn Power Co. v. State*, 148 P. 1110, 1110–11 (Wyo. 1915); TARLOCK, *supra* note 115, § 5:52.

<sup>206</sup> See generally Grant, *supra* note 101; Darrin, *supra* note 5; Wyoming State Engineer’s Office, *Guidance: CBM/Ground Water Permits*, [http://seo.state.wy.us/PDF/GW\\_CBM%20Guidance.pdf](http://seo.state.wy.us/PDF/GW_CBM%20Guidance.pdf) (last visited Mar. 22, 2009).

<sup>207</sup> See *supra* notes 45–56 and accompanying text.

<sup>208</sup> See generally Darrin, *supra* note 5.

<sup>209</sup> Bruce Babbitt, *Essay: The Public Interest in Western Water Law*, 23 ENVTL. L. 933, 937–941 (1993).



warrants recognition and protection.”<sup>210</sup> Dan A. Tarlock notes that “[t]he public interest limitation has taken on added significance as states have incorporated environmental values into water resources allocation and have begun to formulate state water plans that are more than laundry lists of desired projects.”<sup>211</sup>

If the SEO chooses, he may conduct a cost-benefit analysis, consistent with the maximum-benefits model of public interest review, when reviewing appropriations for CBM wells.<sup>212</sup> The SEO should apply a set of identifiable factors when conducting this review, so that the people of Wyoming know that their interests, both present and future, have been considered and what that consideration entailed.<sup>213</sup> In the Powder River Basin, a vast amount of water is being discharged to obtain CBM and the SEO appears to be, through his actions of approving CBM well appropriation, condoning that discharge of Wyoming’s water wholesale.<sup>214</sup>

### 1. *Unlimited Discharge of Produced Water is not in the Public’s Interest*

Because so much of Wyoming’s groundwater is being discharged in the pursuit of CBM, the SEO should set forth a list of factors and conduct a formal public interest review to analyze the full costs and benefits of this use of Wyoming’s water.<sup>215</sup>

The State Engineer, legislature, or Wyoming courts may consider adopting some or all of the elements contained in other states’ water codes so that an identifiable public interest review can be conducted.<sup>216</sup> The elements set forth in the Alaska water code might be a useful starting point.<sup>217</sup> Other water scholars and

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<sup>210</sup> BLACK’S LAW DICTIONARY, 1244 (7th ed. 1999).

<sup>211</sup> TARLOCK, LAW OF WATER RIGHTS AND RESOURCES, *supra* note 115, § 5:52.

<sup>212</sup> *See generally* Grant, *supra* note 101.

<sup>213</sup> *See generally* MacKinnon & Fox, *supra* note 2; Darrin, *supra* note 5; Squillace, *supra* note 92.

<sup>214</sup> *See generally* Wyoming State Engineer’s Office, *Guidance: CBM/Ground Water Permits*, [http://seo.state.wy.us/PDF/GW\\_CBM%20Guidance.pdf](http://seo.state.wy.us/PDF/GW_CBM%20Guidance.pdf) (last visited 3/22/09); MacKinnon & Fox, *supra* note 2; Darrin, *supra* note 5.

<sup>215</sup> *See, e.g.*, MacKinnon & Fox, *supra* note 2, at 382; Squillace, *supra* note 92, at 322–324; Darrin, *supra* note 5, at 335–338.

<sup>216</sup> *Id.*

<sup>217</sup> *See* ALASKA STAT. § 46.15.080 (2008). These factors are:

- (1) The benefit to the applicant resulting from the proposed appropriation;
- (2) the effect of the economic activity resulting from the proposed appropriation;
- (3) the effect on fish and game resources and on public recreational opportunities;
- (4) the effect on public health;
- (5) the effect of loss of alternate uses of water that might be made within a reasonable time if not precluded or hindered by the proposed appropriation;
- (6) harm to other persons resulting from the proposed appropriation;
- (7) the intent and ability of the applicant to complete the appropriation; and
- (8) the effect upon access to navigable or public water.

states have suggested their own sets of factors.<sup>218</sup> Whatever set of factors is applied, it should probably be a nonexclusive list, because of the changing nature of the public interest. Further, not every factor is applicable to each factual situation; therefore it may be appropriate to weigh some factors more heavily than others or not at all if they simply do not apply.

In an analysis of the factors set forth in the Alaska statute in the context of CBM production in Wyoming, benefit to the applicant resulting from the appropriation is great. The value of Wyoming CBM production in 2003 was roughly \$1.5 billion.<sup>219</sup> In total, the Wyoming CBM resource has been valued at \$140 billion.<sup>220</sup> Substantial benefits also lie in the economic value accrued to the state because of royalties paid by energy companies.<sup>221</sup> Expected royalties to be accrued by the State of Wyoming are \$12.8 billion over the life of the industry.<sup>222</sup> Another factor that must be considered in this analysis, not present in the Alaska factors, is the boon to the regional and national economies.<sup>223</sup> It is expected that \$8.2 billion will go to the county governments and another \$2.5 billion to the federal government.<sup>224</sup> The economic activity from the appropriations is undeniably beneficial to the state economy as well by generating jobs and infusing cash into local businesses.

Loss of alternative uses of water that otherwise would be available for future appropriations must be weighed on the opposite side of the scale. In obtaining the gas resource the state is sacrificing a reliable water resource that will not be available for the current and future use Wyoming's inhabitants.<sup>225</sup> Estimates of the amount of water that may be discharged vary greatly, but range from 2.3 trillion to 11 trillion gallons.<sup>226</sup> The population of Wyoming is currently only about a half a million people.<sup>227</sup> CBM hotspots like the Powder River Basin have relatively

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<sup>218</sup> Squillace, *supra* note 96, at 322. The factors suggested by Professor Squillace are:

- (1) The value to both the individual and the community of the use proposed for the water;
- (2) the extent to which the use represents efficient use of water resources;
- (3) the extent and value of other uses which may be precluded by the proposed use;
- (4) the impact of the appropriation on fish and wildlife;
- (5) the impact of the appropriation on water quality; and
- (6) the extent to which the appropriation interferes with compliance with local, state, and federal laws.

<sup>219</sup> Ruckelshaus Report, *supra* note 1, at v.

<sup>220</sup> *Id.*

<sup>221</sup> Skov & Myers, *supra* note 18, at 5.

<sup>222</sup> Ruckelshaus Report, *supra* note 1, at v.

<sup>223</sup> See ALASKA STAT. § 46.15.080 (2008).

<sup>224</sup> Ruckelshaus Report, *supra* note 1, at v.

<sup>225</sup> *Id.*

<sup>226</sup> See Ruckelshaus Report, *supra* note 1, at vi; Skov & Myers, *supra* note 18, at 5.

<sup>227</sup> United States Department of Agriculture, Economic Research Service, <http://www.ers.usda.gov/Statefacts/WY.htm> (last visited Apr. 17, 2009).

small populations, but as Wyoming's population in these areas grows people will need water for domestic and other uses.

One study applied the principle of "precautionary economics" to exploitation of the CBM resource in the Powder River Basin.<sup>228</sup> The goal of precautionary economic analysis is to "assign[] full value to human health and the environment, taking uncertainty into account and describing full costs and harms."<sup>229</sup> Economic analysis in general strives to construct a cost-benefit analysis in an attempt to determine the value of an action and how those costs and benefits are distributed amongst the public.<sup>230</sup> Ultimately, this study found that the benefits of CBM production in the Powder River Basin heavily favor the energy companies and will occur primarily in the short term, while the costs of production will occur over the longer term and "accrue to the public."<sup>231</sup>

The methodology applied in this study is instructive and described as such:

Instead of assigning monetary values to all possible costs, we concentrated on trade-offs: a short-term source of natural gas to help meet high short-term demand versus long-term security of water supplies, quality of life, health of surrounding ecosystems, and the viability of existing rural economic activity. We describe who reaps the benefits and who bears the costs, over what time frame. The differences are qualitative, not quantitative. They involve distributions of benefits and costs, lifestyles, and different economic opportunities for the present and future. They call for *choices* based on value and values, monetary and non-monetary. A few numbers with "cost" and "benefit" written next to them cannot tell us how to make those choices.<sup>232</sup>

This study exemplifies the importance of looking at the whole picture, which is what this comment also urges.

The harm to other persons from the proposed use is exemplified in the *West* case, where the Wests and Turners alleged harm from CBM produced water discharge.<sup>233</sup> While some ranchers and others downstream of CBM discharge do

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<sup>228</sup> Skov & Myers, *supra* note 18, at 5.

<sup>229</sup> *Id.* at 2.

<sup>230</sup> *Id.*

<sup>231</sup> *Id.* at 1.

<sup>232</sup> *Id.* at 2 (emphasis added).

<sup>233</sup> *West v. Tyrrell*, at 1.

not always welcome the high flows, especially if the water has not been sufficiently treated, others benefit from added water for irrigation and other purposes.<sup>234</sup>

What is of particular concern to this author is the rate of discharge, which is not necessarily addressed by the Alaska factors because CBM produced water was not a prevalent issue when Dean Trelease generated the list.<sup>235</sup> Wyoming CBM wells discharge water at an average of nine and one-half gallons per minute.<sup>236</sup> Produced water is being discharged at a rate far greater than the rate at which the water can be put to a “further beneficial use.”<sup>237</sup> If the rate of discharge were limited to the rate at which the water could be put to a further beneficial use, then it might be possible to wisely use both resources.<sup>238</sup>

2. *Wyoming Courts Should Enforce the State Engineer’s Duty to Consider the Public Interest in the Permitting of Coalbed Methane Wells*

The recent Wyoming case *West v. Tyrrell* may be a harbinger of further litigation seeking to clarify the SEO’s duty pursuant to the public interest review requirement. In *West*, the First Judicial District Court did not reach the merits of the argument because the case was dismissed for lack of standing.<sup>239</sup> The Wyoming Supreme Court dismissed the suit for lack of standing as well, holding in part that

the Plaintiff’s claims are simply too general to be justiciable. They do not connect the alleged deficiencies in the State’s administration of water to a direct harm they have suffered. Nor do they make a sufficient showing that a ruling by the court will have an actual effect on them.<sup>240</sup>

If the SEO were to consider the public interest, the Wests and Turners interests would be considered along with the needs of the energy industry for the disposal of produced water as demanded by Wyoming law.<sup>241</sup> Alternatively,

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<sup>234</sup> Ruckelshaus Report, *supra* note 1, at vi.

<sup>235</sup> Darrin, *supra* note 5, at 320.

<sup>236</sup> *Id.*

<sup>237</sup> *See id.*

<sup>238</sup> *See generally* Darrin, *supra* note 5; MacKinnon & Fox, *supra* note 2.

<sup>239</sup> *West v. Tyrrell*, at 8.

<sup>240</sup> *West v. Tyrrell*, In The Supreme Court, State of Wyoming, 2009 WY 62, S-08-0161, S-08-0162 (Published May, 7 2009), available at <http://www.courts.state.wy.us/Opinions/2009WY62.pdf>.

<sup>241</sup> *See supra* notes 107–113 and accompanying text.

perhaps prospective plaintiffs could find another avenue to bring their case other than the Wyoming Uniform Declaratory Judgments Act. A court that hears such a case will have an opportunity to urge the legislature or SEO to promulgate specific criteria that must be considered in a public interest review and to further conduct a review using these factors.

#### IV. CONCLUSION

The CBM boom is in high gear.<sup>242</sup> With energy prices fluctuating wildly and a growing unease over our nation's dependence on foreign sources of energy, domestic energy production has never been more important.<sup>243</sup> It is also important, however, to temper development with the wise use of resources.<sup>244</sup> CBM development should be limited by reasonable use of produced water, which goes hand-in-hand with that development.<sup>245</sup> The State Engineer should apply, and courts should enforce, a model of public interest review that accounts for the full costs of the virtually unlimited discharge of Wyoming's groundwater water.<sup>246</sup>

Long after the CBM is gone, people will remain in the Powder River Basin, as well as other CBM hotspots, and those people will need water. The water that is produced because of CBM development belongs to the people of Wyoming.<sup>247</sup> In other words, it is the people's water. The State Engineer is the steward of Wyoming's water.<sup>248</sup> Because the State Engineer is assigned the weighty task of overseeing the water resource, it is not enough to grant permits simply because a CBM producer has submitted a proper permit for unappropriated water.<sup>249</sup> The State Engineer should not sit on the sideline while trillions of gallons of water are traded for gas; the SEO should conduct a public interest review on the record so that the people of Wyoming know their interests are being formally considered.<sup>250</sup>

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<sup>242</sup> See generally Ruckelshaus Report, *supra* note 1.

<sup>243</sup> See generally Darrin, *supra* note 5, Mackinnon & Fox, *supra* note 2.

<sup>244</sup> See generally Bryner, *supra* note 11.

<sup>245</sup> See *supra* notes 215–238 and accompanying text.

<sup>246</sup> *Id.*

<sup>247</sup> WYO. CONST. art. VIII, § 1 (“The water of all natural streams, springs, lakes or other collections of still water, within the boundaries of the state, are hereby declared to be the property of the state.”).

<sup>248</sup> See *supra* notes 88–98 and accompanying text.

<sup>249</sup> See *supra* notes 215–238 and accompanying text.

<sup>250</sup> See *supra* notes 196–238 and accompanying text.