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COMMENT

The Wyoming State Engineer's Order for Corrective Controls within the Laramie County Control Area: Is It Effective or Does It Need Improvement?

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I. INTRODUCTION

"Irrigation wells are going dry. We are truly losing water, [and] something needs to be done. We need to use less [water]."[1] Dwayne Anderson is a farmer who lives in Pine Bluffs, Wyoming, and has seen the problems of groundwater depletion within the area firsthand.[2] Laramie County, specifically the eastern portion, has a groundwater depletion problem. Water depletion within the area became so bad within the past several decades that the State Engineer designated it the Laramie Country Control Area ("LCCA") and has implemented a new Corrective Control Order ("Order").[3] The Order was implemented following a hydrogeology study conducted by the State Engineer's Office ("SEO"). The LCCA Order increased restrictions on groundwater pumping; the Order contains controls for water adjudication, well spacing, flow metering, and data collection.[4] While the current LCCA Order has good intentions and implements productive corrective controls, the Order does not do enough to address the depletion problems in the area. First, the SEO should encourage the LCCA to implement its own corrective controls plan.[5] If an LCCA constructed plan cannot be implemented, the current Order's controls should be improved by extending the boundaries and metering requirements, imposing more protections and penalties in the Order, and implementing a permanent program for continued data collection within the control area.[6]

Part II of this comment discusses Wyoming's water law, including groundwater and the administration of water rights throughout the state, and details how a control area is designated and the rules and regulations that pertain to a control area.[7] Part II also addresses the LCCA and, specifically, the control area's water use, the background leading up to the current Order, and breaks down the current Order into key segments.[8] Finally, Part III analyzes the Order's corrective controls and proposes recommendations to implement a control area water plan or, in the alternative, ways to improve and modify the current Order by increasing monitoring and metering, protections and penalties, and extending the timeline for data collection.[9]

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[1] Telephone Interview with Dwayne Anderson, Farmer (Apr. 20, 2015) [hereinafter Anderson Interview].

[2] *Id.*

[3] *See Order of the State Engineer: Laramie County Control Area*, WYO. ST. ENGINEER'S OFF. 2, https://perma.cc/GQU7-26C2 [hereinafter *LCCA Order*] (citing 1945 Wyo. Sess. Laws 139).

[4] *See id.*

[5] *See infra* notes 127–35 and accompanying text.

[6] *See infra* notes 136–53 and accompanying text.

[7] *See infra* notes 136–53 and accompanying text.

[8] *See infra* notes 10–126 and accompanying text.

[9] *See infra* notes 127–53 and accompanying text.

II. BACKGROUND

A. Wyoming's Water Law and Water Administration

Because Wyoming has a deep history of water rights and water laws, the following sections discuss how Wyoming appropriates water, who has the authority to appropriate water, and the groundwater laws within the state.

1. Wyoming's Water Law History and Water Administration

The waters within the state, both surface and groundwater, belong to the state.[10] Wyoming follows the doctrine of prior appropriation for the allocation of water, allowing any person who uses water in a beneficial way and has a priority date to obtain a water right from the state.[11] The water user's priority date is set when the state receives that user's application.[12] One of the main tenets of prior appropriation is that the water must be used in a beneficial way; thus, no appropriation shall be denied if water is being used beneficially.[13] According to Wyoming Statute section 41-3-101, "[b]eneficial use shall be the basis, the measure and limit of the right to use water at all times . . . ."[14]

The Wyoming Constitution assigns the Board of Control ("BOC")—consisting of division superintendents and the SEO—the authority to govern and administer Wyoming's water rights.[15] The SEO and BOC have the authority to approve and appropriate water rights.[16] Wyoming is divided into four distinct water divisions, which are further divided into water districts.[17] Each water district has its own water commissioner who has the actual, physical authority[18] to "divide, regulate, and control the use of the water . . . [and the] sources of water within his district as will prevent the waste of water or its use in excess of volume . . . ."[19]

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[10] *See* WYO. CONST. art. VIII, § 1.

[11] *See* WYO. CONST. art. VIII, § 3.

[12] *See* WYO. STAT. ANN. § 41-4-512 (2015).

[13] *See* WYO. CONST. art. VIII, § 3.

[14] WYO. STAT. ANN. § 41-3-101 (2015).

[15] *See* WYO. CONST. art. VIII, §§ 2, 5.

[16] Interview with Lisa Lindemann, Groundwater Division Administrator, Wyoming State Engineer's Office (Apr. 8, 2015) [hereinafter Lindemann Interview].

[17] *See* WYO. CONST. art. VIII, § 4; WYO. STAT. ANN. § 41-3-601 (2015).

[18] *See* WYO. STAT. ANN. § 41-3-601; Lindemann Interview, *supra* note 16.

[19] WYO. STAT. ANN. § 41-3-603(a) (2015).

2. Groundwater within the State

Wyoming Statute section 41-3-901(a)(ii) defines underground water as "any water, including hot water and geothermal steam, under the surface of the land or the bed of any stream, lake, reservoir, or other body of surface water,"[20] and all spring water used for domestic and stock purposes which does not yield more than twenty-five gallons per minute.[21] The first groundwater laws in Wyoming were enacted in 1945.[22] Groundwater laws are similar to surface water laws and follow the doctrine of prior appropriation.[23] It was not until 1957 that the legislature required permits for future groundwater users.[24] Domestic and stock groundwater uses were initially exempted from the permitting process and were declared preferred uses.[25] In 1969, all groundwater uses, including domestic and stock groundwater users, were required to obtain water permits from the SEO.[26] However, domestic and stock users were given a preferred right over other uses.[27] After 1969, potential groundwater permits were received through the SEO's Groundwater Division; this practice continues today. Wyoming's groundwater laws also designate control areas if groundwater levels drop too low.

B. Control Areas and the Corresponding Rules and Regulations

Wyoming is allowed to designate certain areas as water control areas.[28] Therefore, the following sections explore how an area is designated as a control area.[29] The sections will also explain the State Engineer's heightened powers throughout the control areas that allow the SEO to refuse to grant groundwater permits without a hearing or proceeding and to implement corrective controls within the control areas.[30]

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[20] WYO. STAT. ANN. § 41-3-901(a)(ii) (2015).

[21] WYO. STAT. ANN. § 41-3-902 (2015).

[22] *See LCCA Order*, *supra* note 3, at 2 (citing 1945 Wyo. Sess. Laws 139).

[23] *See id.* (citing 1947 Wyo. Sess. Laws, ch. 107, § 1).

[24] *See id.* at 3 (citing 1957 Wyo. Sess. Laws, ch. 169, § 2).

[25] *See About the Ground Water Division*, WYO. ST. ENGINEER'S OFF., https://perma.cc/43N3-SBXX.

[26] *Id.*

[27] *See* WYO. STAT. ANN. § 41-3-907 (2015). In a time of drought, domestic and stock users would have priority over other water users even if the domestic and stock users have a younger priority date.

[28] *See* WYO. STAT. ANN. § 41-3-912 (2015).

[29] *See infra* notes 30–68 and accompanying text.

[30] *See LCCA Order*, *supra* note 3, at 5.

1. Designation of a Control Area

When the legislature amended the groundwater laws in 1957, it emphasized the need to conserve groundwater resources and allowed the State Engineer to designate "critical areas," if needed.[31] The LCCA Order noted that critical areas are needed "when groundwater use was approaching the recharge rate, groundwater levels were declining, user conflicts were occurring or were foreseeable, waste was occurring, or other conditions required regulation in the public interest."[32] The SEO is afforded more discretion within the critical areas, and each critical area has its own advisory board.[33] The first critical areas, established in 1971, were the Pine Bluffs and Carpenter Groundwater Critical areas, located in the southeastern corner of Laramie County.[34] The establishment of these critical areas were necessitated by an increase in groundwater use for irrigation from 1,500 acre feet in 1936 to 17,000 acre feet in 1964, causing a substantial decline in groundwater levels.[35] The "critical areas" were renamed "control areas" in 1973.[36]

Control areas are considered special groundwater management areas.[37] If the SEO believes a control area should be formed, the State Engineer shall inform the BOC.[38] Next, the BOC will investigate, make its own findings, hold public hearings, and listen to outside evidence.[39]

> The [BOC] may designate a control area for the following reasons:
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> (i) The use of underground water is approaching a use equal to the current recharge rate;
>
> (ii) Groundwater levels are declining or have declined excessively;
>
> (iii) Conflicts between users are occurring or are foreseeable;
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> (iv) The waste of water is occurring or may occur; or
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> (v) Other conditions exist or may arise that require regulation for the protection of the public interest.[40]

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[31] *Id.* at 2.

[32] *Id.* at 3.

[33] *Id.*

[34] *Id.* at 5.

[35] *Id.* at 4.

[36] *Id.* at 5.

[37] Lindemann Interview, *supra* note 16.

[38] *See* WYO. STAT. ANN. § 41-3-912(b) (2015).

[39] *See* WYO. STAT. ANN. § 41-3-912(c).

[40] WYO. STAT. ANN. § 41-3-912(a).

If the BOC determines an area fits within one of the above criteria, it may form a control area with the SEO's approval.[41] After a control area is formed, the BOC defines the area geographically and stratigraphically, and then appoints five district board members to form a control area advisory board.[42] The control area advisory board—members of which live in the control area—recommends policies to the SEO and BOC concerning groundwater application and development within the control area.

2. Heightened Rules and Regulations within the Control Areas

Water users within control areas have additional rules and regulations they are required to follow. The creation of a control area requires all appropriators with unadjudicated wells to submit adjudication materials.[43] After the adjudication, public notice of the findings must be published.[44] If an appropriator refuses to adjudicate or provide the information needed for the adjudication, his or her well may be tagged or locked.[45]

The permitting process within control areas also differ from the ordinary application process because permits are not issued as a matter of course.[46] Once an application has been submitted to the SEO, the application must be published for three weeks in the local newspaper of that county.[47] If objections are filed, or if the SEO believes the application could be contrary to the public's water interest, the control area advisory board and the SEO will hold a public hearing.[48] The SEO will consider the advisory board's recommendations and conduct its own findings of fact, and if the SEO sees fit, the State Engineer may accept or deny the objection.[49]

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[41] *See* WYO. STAT. ANN. § 41-3-912(c).

[42] *See id.*

[43] *See* WYO. STAT. ANN. § 41-3-914(a) (2015). The adjudicative material includes a timeline of when the water right began and a "plat, showing the location of the well(s) and/or springs, and the point(s) of use and distribution system . . . ." *Permitting/Adjudication/Changes*, WYO. ST. ENGINEER'S OFF., https://perma.cc/4QC5-2F44 [hereinafter *Permitting/Adjudication/Changes*]. This enables the SEO to assign a priority date and adjudicate the water right. *Id.* "Adjudication of a water right confirms beneficial use in accordance with the permit under which the water right was issued, and confirms the rate and/or amount of water used." *LCCA Order*, *supra* note 3, at 22.

[44] *See* WYO. STAT. ANN. § 41-3-914(a).

[45] *See* WYO. STAT. ANN. § 41-3-914(b).

[46] Lindemann Interview, *supra* note 16. In regards to a traditional groundwater permit for domestic and stock use, the water user must submit a complete and accurate "Application for Permit to Appropriate Ground Water" to the SEO Groundwater Division.

[47] WYO. STAT. ANN. § 41-3-932(a) (2015).

[48] WYO. STAT. ANN. § 41-3-932(a)–(b).

[49] WYO. STAT. ANN. § 41-3-932(a)–(c).

> The application . . . shall be granted . . . if . . . there are unappropriated waters in the proposed source, that the proposed means of diversion or construction is adequate, that the location of the proposed well or other work does not conflict with any well spacing or well distribution regulation, and that the proposed use would not be detrimental to the public interest.[50]

A decision made by the SEO may be appealed within thirty days to the BOC.[51] Despite these procedures, the control area statutes give the SEO the final say: "Whenever a control area has been designated . . . the state engineer may, without hearings or other proceedings, refuse to grant permits for the drilling of any wells within the control area."[52]

3. Corrective Controls within the Control Area

Once a control area is established, the SEO is allowed to issue corrective controls.[53] The SEO may determine whether the water supply within a control area is insufficient and may adopt one or more of the follow corrective controls: (1) close the control area and refuse to grant any applications for groundwater, provided that the area may be reopened if the SEO sees fit; (2) "determine the permissible total groundwater withdrawal for each day, month, or year," and apportion the water according to these determinations; (3) order junior appropriators to stop or reduce withdrawals if they are adversely affecting senior appropriators and/or the water supply; (4) implement a water rotation scheme if the prohibition of junior appropriators does not repair the problem; or (5) implement well spacing requirements for new well applications.[54] The SEO is required to hold a public hearing before the State Engineer can implement one or more of the controls.[55]

The control area advisory board may institute its own corrective controls for withdrawal rates, well spacing, apportionment, rotation, or proration of groundwater instead of having the SEO construct corrective controls for the area.[56] However, the SEO must promote, encourage, and approve the corrective controls agreement, and the agreement must "not be detrimental to the public interest or to the rights of other persons not parties to the agreement."[57]

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[50] WYO. STAT. ANN. § 41-3-932(c).

[51] *See* WYO. STAT. ANN. § 41-3-932(a)–(c).

[52] WYO. STAT. ANN. § 41-3-912(g) (2015).

[53] *See* WYO. STAT. ANN. § 41-3-915 (2015).

[54] WYO. STAT. ANN. § 41-3-915(a).

[55] *See id.*

[56] WYO. STAT. ANN. § 41-3-915(c).

[57] *Id.*

Further, all of the stakeholders who draft the controls must unanimously agree on the plan.[58]

4. Current Control Areas within the State

In 1970 the SEO declared that "[s]everal areas of eastern Wyoming [were] showing signs that they may be reaching maximum development potential."[59] The SEO received several requests to establish a countywide groundwater control area within Laramie County in 1976.[60] "[A]s a result of declining groundwater levels and to mitigate future potential for conflicts between groundwater users in the LCCA," the SEO and BOC established the LCCA on September 2, 1981.[61] The LCCA covers 1,680 square miles of eastern Laramie County[62] and consists of three major areas, the Albin area, the Pine Bluffs area, and the Carpenter area.[63]

Currently, there are three groundwater control areas in Wyoming, and all of the control areas are located in the southeastern portion of Wyoming.[64] In addition to the LCCA, there are control areas in the northeastern portion of Goshen County and in the central portion of Platte County.[65] Out of the three control areas, the LCCA seems to have the most prevalent groundwater issues.[66]

C. The LCCA—Its Water Use, the Lead-Up to the Order, and the Current Order Itself

The LCCA has several problem areas for groundwater depletion. The following sections discuss the general geography and water use within the LCCA and detail the scientific study, commissioned by the SEO, which was conducted in the area.[67] After the study is discussed, the following sections map out the Temporary Order and meetings that occurred before the current Order was put into place,[68] and breaks down the current Order into key components.[69]

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[58] Lindemann Interview, *supra* note 16.

[59] *LCCA Order*, *supra* note 3, at 4 (citation omitted).

[60] *LCCA Order*, *supra* note 3, at 6.

[61] *Id.*

[62] *Id.* at 16.

[63] *See Hydrogeologic Study of the Laramie County Control Area*, WYO. ST. ENGINEER'S OFF. 64 (Mar. 2014), https://sites.google.com/a/wyo.gov/seo/ [hereinafter *Hydrogeologic Study*]. *See also* APPENDIX A.

[64] *See Groundwater Control Areas and Advisory Boards*, WYO. ST. ENGINEER'S OFF., https://perma.cc/F797-TEQ7 [hereinafter *Groundwater Control Areas*]. *See also* APPENDIX B.

[65] *See Groundwater Control Areas*, *supra* note 64.

[66] Lindemann Interview, *supra* note 16.

[67] *See infra* notes 70–91 and accompanying text.

[68] *See infra* notes 95–107 and accompanying text.

[69] *See infra* notes 104–24 and accompanying text.

1. The Geography and Water Use within the LCCA

Most of the groundwater used within the LCCA comes from the High Plans Aquifer which consists of the White River Formation, the Arikaree Formation, and the Ogallala Formation.[70] "The average, annual consumptive use within the [LCCA] . . . is over 60,800 acre-feet, of which about [ninety] percent is attributable to irrigation."[71] Irrigation use has only dropped three percent since 1976 when the total permitted yield was ninety-three percent of groundwater.[72] The SEO has positioned twenty monitoring wells in the LCCA and fifteen monitoring wells in Laramie County.[73]

2. The SEO's Hydrogeologic Study within the LCCA

In response to the declining groundwater levels and the public concerns, the SEO contracted several companies "to conduct a hydrogeologic study of the LCCA to inform and provide a scientific basis for future groundwater management . . . ."[74] The Hydrogeologic Study of Laramie County Control Area's ("Study") model domain encompassed 2,115 square miles within Laramie County and the surrounding areas.[75] The Study reported the following uses within the areas.

Irrigation	54,500 acre-feet per irrigation season
Industrial	360 acre-feet per year
Municipal	4,400 acre-feet per year
Small Community Water Supply	600 acre-feet per year
Domestic	980 acre-feet per irrigation season (eighty-five gallons per day per person)
Stockwater/ Miscellaneous	Implicit in "Domestic" pumping[76]

[70] *LCCA Order*, *supra* note 3, at 16.

[71] *Id.* at 19.

[72] *Id.*

[73] Lindemann Interview, *supra* note 16.

[74] *LCCA Order*, *supra* note 3, at 7.

[75] *See Hydrogrologic Study*, *supra* note 63, at 16.

[76] *Id.* at 35.

The Study offered groundwater projections until 2060, which included a baseline scenario and four management scenarios that modeled different permitting and production assumptions.[77] The baseline scenario represents groundwater levels if no changes are made to the LCCA.[78] The four management scenarios address actions that could be implemented in the control area and the potential outcomes throughout LCCA's five water districts.[79] Scenario one addresses a permanent spacing order;[80] scenario two addresses a fifty percent reduction in irrigation;[81] scenario three addresses a groundwater use reduction by district;[82] and scenario four addresses no growth in groundwater use.[83]

The Study determined—through the management scenarios—that there are four distinct areas of significant groundwater-level decline within the LCCA.[84] First,"[g]roundwater levels in the Pine Bluffs vicinity have declined primarily due to the long-term impact of large irrigation withdrawals from a productive but relatively thin aquifer . . . ."[85] Second, the groundwater levels in the Carpenter area have also declined because of long-term irrigation use.[86] Third, the White River Formation under the Carpenter area is relatively thin but fairly productive.[87] Finally, the Arikaree and Ogallala Formations, within the Albin area, are less productive and thicker than the aquifer in the southeast and have greater groundwater level declines due to increased irrigation demands.[88] The Study illustrates that groundwater levels will continue to decrease even with reduced groundwater pumping.[89]

The Study also included the Cheyenne area, even though it is not located within the LCCA.[90] The groundwater levels within this area have been impacted greatly by municipal, industrial, and domestic development.[91] Even though the drawdown levels in Cheyenne will not impact the LCCA significantly, the Study

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[77] *See LCCA Order*, *supra* note 3, at 10.

[78] *See Hydrogeologic Study*, *supra* note 63, at 40.

[79] *See id.*

[80] *Id.* at 42.

[81] *Id.* at 43.

[82] *Id.* at 44.

[83] *Id.* at 45.

[84] *LCCA Order*, *supra* note 3, at 19.

[85] *Id.*

[86] *Id.* at 20.

[87] *Id.* at 19–20.

[88] *Id.* at 20.

[89] *Id.*

[90] *Id.*

[91] *Id.*

found "that the [Ogallala Formation] . . . may be physically unable to support heavily concentrated development."[92]

The Study made two major recommendations: First, areas of concern should establish long-term goals to stabilize aquifer levels and, second, in the other areas of the LCCA, new uses of groundwater could be permitted.[93] The Study also recommended: (1) encouraging district water users to participate in demand management programs which encourage metering on high capacity wells; (2) altering the future administration of groundwater to include changing the LCCA district boundaries; (3) evaluating the effectiveness of spacing requirements; and (4) locating new sources of water under the High Plains Aquifer.[94] After reviewing the findings of the study, the SEO decided to take action.

3. The Lead-Up to the Current Order

On April 11, 2012, the SEO issued a Temporary Order Adopting Well Spacing Requirements within the LCCA.[95] The Temporary Order adopted "well spacing requirements . . . as a means to mitigate continued further decline in groundwater levels . . . and to provide time to develop a framework to inform future groundwater management decisions."[96] The LCCA requested the Temporary Order be extended until April 1, 2015 because the LCCA appropriators hoped to formulate their own corrective controls and needed additional time.[97] The SEO and LCCA Advisory Board held several public meetings during the extension to "determine whether the groundwater resources of the LCCA [were] adequate for the needs of all appropriators . . . ."[98] They received numerous public comments including suggestions to expand the LCCA boundaries, keep the Temporary Order in place, and stop permitting high capacity wells.[99]

A Steering Committee was also established at this time, consisting of thirty-six different stakeholders including LCCA appropriators, county planners, city mayors, industry, and public utilities.[100] The committee members met several times between October 2014 and March 2015 to "develop[] creative and effective

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[92] *Id.*

[93] *Id.* at 10.

[94] *Id.* at 10–11.

[95] *Id.* at 7.

[96] *Id.*

[97] *See id.*; *see also* Lindemann Interview, *supra* note 16.

[98] *LCCA Order*, *supra* note 3, at 7–8.

[99] *See id.* at 8.

[100] Telephone Interview with Jim Lerwick, Committee Member, LCCA Steering Committee (Apr. 20, 2015) [hereinafter Lerwick Interview].

options for reducing water use in the LCCA."[101] Because the committee was unable to develop its own corrective controls plan, they sent the SEO several recommendations for the LCCA on March 31, 2015.[102] The recommendations included extending the control boundary and devising an irrigator buyout plan for new water users.[103] Additionally, Jim Lerwick, an Albin water user and committee member, explained that the LCCA needed to make the water use plan an economic development issue, not a water use issue.[104]

4. The Current LCCA Order Implemented by the SEO

The SEO implemented the current Order on April 1, 2015 after receiving the Steering Committee's recommendations.[105] "The Order is intended to guide groundwater permitting, control future groundwater development, address administrative issues, and bolster well production and water level data collection in the near term."[106] If a new order is not issued by April 1, 2020, the Order will continue in effect until a new order is issued.[107] The Order is only effective until "rescinded, superseded, or modified" by the SEO or if the LCCA imple-ments its own plan.[108] The Order contains several key corrective controls described below.

First, the Order requires all unadjudicated irrigation, municipal, industrial, and miscellaneous wells from the High Plains Aquifer to be adjudicated.[109] All adjudications must be completed by November 30, 2017.[110] If an appropriator does not comply, his or her wells will be tagged, locked, and foreclosed.[111] Next, all irrigation, municipal, industrial, and miscellaneous appropriators must fit the proper flow meters onto their wells prior to the water year 2017.[112] After the meters are installed, the appropriators are required to deliver monthly and

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[101] *LCCA Order*, *supra* note 3, at 9.

[102] *See id.*; *see also* Lindemann Interview, *supra* note 16.

[103] Lerwick Interview, *supra* note 100.

[104] *Id.*

[105] Lindemann Interview, *supra* note 16.

[106] Letter from Patrick T. Tyrell to LCCA Steering Committee and Interested Laramie County Residents and Appropriators (Apr. 2, 2015), https://perma.cc/RU2J-9QLL [hereinafter Letter to Committee].

[107] *See LCCA Order*, *supra* note 3, at 32.

[108] *Id.* at 33.

[109] *Id.* at 28.

[110] *Id.*

[111] *Id.*

[112] *Id.* Water year 2017 runs from October 1, 2016 through September 20, 2017. *See LCCA Order*, *supra* note 3, at 28.

annual flow reports to the SEO's Groundwater Division.[113] Appropriators must also collect and report static water levels for the hydrogeologic area they are located within.[114]

Second, the most substantial control in the Order pertains to the well spacing restrictions. Restrictions are required for all new groundwater appropriations whose point of diversion is within the LCCA.[115] The restrictions are tailored to the individual hydrogeological conditions found within the LCCA,[116] and divided between the Drawdown Area, Conservation Area, Unaffected Area, and Underlying Area.[117] The space requirements for each area are then divided into the following categories: Stock/Domestic, Miscellaneous ≤ 5 acre-feet, > 5 and ≤ 40 acre-feet, and > 40 acre feet.[118] The Drawdown Area, which has the most restrictive controls, does not allow new permits for wells pumping more than five acre feet.[119] In contrast, the least restrictive well spacing is in the Unaffected Areas.[120]

Third, the Order requires all applications for groundwater permits, new and amendments, to comply with Wyoming statutes and regulations.[121] The SEO is vested with broad discretion regarding permitting within the LCCA.[122] "Compliance with any requirements in this Order does not preclude the State Engineer from issuing any permits subject to such conditions as he may find to be in the public interest."[123]

Fourth, the SEO is to review the effects and data of the Order starting November 2019.[124] The SEO will have three years of water data to determine whether the Order is impacting the LCCA in any way.[125] After the SEO holds a public hearing

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[113] *Id.*

[114] *Id.*

[115] *Id.*

[116] *Id.*

[117] *Fact Sheet: State Engineer's Order*, WYO. ST. ENGINEER'S OFF., https://perma.cc/2PF2-22LN [hereinafter *Fact Sheet*]; *see also* APPENDIX D.

[118] *See Fact Sheet*, *supra* note 117, at 2; *LCCA Order*, *supra* note 3 at 29–31; *see also* APPENDIX D.

[119] *LCCA Order*, *supra* note 3, at 29–30.

[120] *Id.* at 31. Appendix D goes into extensive detail on the well spacing restrictions. *See* APPENDIX D; *Fact Sheet*, *supra* note 117, at 2.

[121] *LCCA Order*, *supra* note 3, at 32.

[122] *Id.*

[123] *Id.*

[124] *Id.*

[125] *Id.*

and studies the water data, the State Engineer will determine whether the Order should continue or whether a new Order should be implemented.[126]

III. ANALYSIS

The LCCA needs to make significant changes to its water use before groundwater levels deplete too far. The SEO's current Order helps rectify some problems, but it does not have enough teeth to really make a change within the control area. It would be more beneficial for the LCCA to construct its own water control plan because the water stakeholders within the area know what they want and need from the corrective controls, and there may be a better buy-in from all the appropriators if the LCCA implemented a plan.

If a self-constructed plan cannot be adopted, the current Order should be modified and improved by increasing monitoring and metering throughout the control areas and expanding the control areas to include the surrounding area of Cheyenne. Additionally, even though the Order does not have substantial protections and penalties in place, by adding more protections and penalties, more water users would be encouraged to follow the Order. Lastly, a requirement should be implemented to ensure data collection and well monitoring will not stop if the Order is rescinded.

A. Adopt a Self-Constructed LCCA Water Control Plan

The current Order encourages appropriators within the LCCA to create their own corrective control water plans.[127] Corrective controls implemented by the LCCA may be the most efficient answer to the area's current groundwater problems. Although the SEO is a highly educated and knowledgeable office, the LCCA Advisory Board and Steering Committee live within the control area and many are water appropriators who have first-hand knowledge of what controls work and do not work within the field. Also, the appropriators would likely be more willing to buy-in more to a water plan that is drafted directly by themselves and their fellow appropriators.

As an example, one of the public comments from a hearing held in 2014 stated, "[l]et the irrigators solve the problem they created."[128] The comments and the history of public involvement in the LCCA show that appropriators care about the groundwater levels within the area and they want to fix the problem.[129]

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[126] *Id.*

[127] *Id.* at 33. "I strongly encourage you to continue with this very important work and the State Engineer's Office stands ready to assist in whatever way we can." Letter to Committee, *supra* note 106, at 1.

[128] *LCCA Order*, *supra* note 3, at 8.

[129] Anderson Interview, *supra* note 1.

Mr. Terrell, Wyoming's State Engineer, has offered several words of advice when drafting corrective controls: "As you continue to work on an appropriator agreement, remember that it must show how it is in the public interest, how it complies with our Groundwater statutes, and how it is not injurious to any party not signatory thereto."[130] Even though the State Engineer has offered words of encouragement, he has not offered much substantive advice to the Steering Committee.

The Steering Committee took a slightly different approach when constructing a water plan before the SEO implemented the current Order. They hoped to make the water plan more into an economic development plan, rather than focus on the water depletion issue.[131] This position seems to reflect the future policy the committee will likely pursue. In addition, the committee hopes to implement an irrigation buyout plan.[132] The buyout plan includes a new fee schedule for new water users, which would have substantially higher permitting fees.[133] The increased funding from the fees would help buyout old, inefficient well users.[134] The Steering Committee will continue to meet and hopefully, in the near future, implement a control plan the SEO will approve.[135] If the Steering Committee cannot adopt its own plan, the only other option is to improve the current Order's controls.

B. Increase Metering and Monitoring of All Groundwater Wells within the LCCA and Outside the LCCA Borders

The LCCA only uses thirty-five monitoring wells within, or close to, its borders.[136] This number is extremely low given the size of the LCCA. Installing more monitoring wells would help the LCCA determine, with more efficiency and effectiveness, what the exact groundwater levels are in the High Plains Aquifer. As the LCCA Order noted: "Monitoring the water levels . . . will also help prevent interference with senior appropriators . . . ."[137] Another issue with the current monitoring wells is that they are not evenly distributed throughout the control area.[138] "Expanding the monitoring well network to target areas of interest for groundwater development, areas with localized hydrogeologic variability, and

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[130] Letter to Committee, *supra* note 106, at 4.

[131] Lerwick Interview, *supra* note 100.

[132] *Id.*

[133] *Id.*

[134] *Id.*

[135] *Id.*

[136] Lindemann Interview, *supra* note 16.

[137] *LCCA Order*, *supra* note 3, at 22.

[138] *Hydrogeologic Study*, *supra* note 63, at 118.

along critical boundaries of the [LCCA], would allow for recalibration of the [LCCA] and would increase the confidence of [LCCA] predictions . . . ."[139] Monitoring wells should also be installed to track water levels in aquifers besides the High Plains Aquifer to determine if these aquifers could be developed. The SEO should evaluate the utility of monitoring wells within the Land/Fox Hills Aquifers, located below the High Plains Aquifer.[140] In addition to adding monitoring wells, the LCCA should expand its boundaries.

The LCCA Steering Committee recommended the SEO extend the LCCA boundaries.[141] The LCCA would benefit from extending its boundaries to include all of Laramie County, which would allow the SEO to more effectively monitor the stressors to groundwater in the control area. More detailed monitoring is important because the Cheyenne area is a substantial consumer of groundwater and the Study found that Cheyenne's aquifer will not be able to support Cheyenne's development in the future.[142] It would be more effective to include Cheyenne in the LCCA instead of waiting for groundwater levels to lower substantially. Being proactive, instead of reactive, is a better solution to the upcoming groundwater problem in Cheyenne. Many of the appropriators within the LCCA have also expressed a desire for Cheyenne to be included in the control area.[143] The LCCA Steering Committee is comprised of several representatives from Cheyenne and, even though they are not part of the technical boundaries, the representatives have been very proactive and helpful within the committee and they wished to be included in the process.[144] If the SEO does not want to include all of Laramie County, it would be beneficial to include, at least, Cheyenne.

Additionally, domestic and stock users should be required to have meters on their wells as they receive a substantial number of exemptions from the LCCA and the current Order, including not being required to meter their wells.[145] Domestic and stock users do not use a substantial amount of water within the LCCA, but the current numbers are based on estimates. According to the Study, domestic wells use more water than industrial uses and small community water supplies, yet, they are not required to add meters to their wells.[146] Adding meters to domestic wells may provide enhanced data relating to the amount of water

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[139] *Id.* at 39.

[140] *Id.* at 51.

[141] *LCCA Order*, *supra* note 3, at 9.

[142] *Id.* at 20.

[143] Anderson Interview, *supra* note 1.

[144] *Id.*

[145] *See LCCA Order*, *supra* note 3, at 28.

[146] *See Hydrogeologic Study*, *supra* note 63, at 35.

used. Some LCCA water users believe every well within the control area should be monitored, with no exceptions.[147]

C. Increase Protective Measures and Penalties for Order Noncompliance

Regulations should be implemented in order to prevent noncompliance with the order. Currently, the Order does not include any protective measures or punishments if an appropriator does not comply with the Order. To increase compliance with the Order's controls, more penalties should be established. The only penalty listed in the Order is found within the adjudication section of the Order and states that if an appropriator does not adjudicate within a certain period of time, his or her well will be tagged and foreclosed.[148] However, problems arise when an appropriator does not comply with the other corrective controls. What happens when appropriators do not comply with the controls? One local farmer expressed the concern that "the laws are in place, but no one is enforcing them."[149] If the entire Order incorporated some sort of protection and penalty for noncompliance, appropriators may be more inclined to follow the Order's controls.

A penalty for noncompliance should be tagging and foreclosing a well, similar to the process set forth in the adjudication section of the Order. In addition to the foreclosed wells, stiffer penalties should be applied for noncompliance. Implementing a monetary fine could be a lucrative and useful penalty. The fine could be appropriated to the SEO's Groundwater Division for future studies and development of the control areas or could be appropriated to the LCCA directly. The Study conducted for the SEO was exorbitantly expensive and fines for noncompliance could help soften future costs of the SEO or LCCA.[150]

Any potential noncompliance fine would need to be substantial enough to make an impact on the non-complying appropriator. If the fine is insubstantial, the appropriator may find it more effective to pay the fine and continue with his or her noncompliance. The Steering Committee recommended a "$5,000 fee for all new wells for conservation and preservation of the aquifers in Laramie County."[151] A $5,000.00 fine may be sufficient to curb potential non-complying users. While $5,000.00 may not seem like a substantial amount of money, the fine could increase with each day or week of noncompliance.

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[147] Anderson Interview, *supra* note 1.

[148] *Id.*

[149] Anderson Interview, *supra* note 1.

[150] Lindemann Interview, *supra* note 16.

[151] *LCCA Order*, *supra* note 3, at 9. Currently, permitting fees range from $50.00 to $75.00. *See Permitting/Adjudication/Changes*, *supra* note 43.

If an appropriator continues to disregard the corrective controls, the harshest penalty should be applied. The harshest penalty that the state could impose on any water user, in addition to a foreclosed well and substantial fine, is the loss of a vested water right. While this may seem too extreme, it is important to set an example for the appropriator that the groundwater levels within the LCCA are extremely important and the controls need to be followed.

D. Increase and Continue Data Collection from Groundwater Wells Even if the Order is Rescinded

Data collection should continue in the LCCA even if the Order is replaced. The Order establishes that the SEO will begin to study water data collected from the appropriators three years after the collections commence, but the Order does not establish how long data should be collected for or what will happen to the data if the Order is rescinded or replaced. The SEO believes three years will provide enough data to begin groundwater level analysis.[152] Although this could be an appropriate timeline to begin studying data, three years may not show measureable changes in the groundwater levels. The Order's data collection section should be extended for a substantial number of years in the future. Data should be collected and evaluated for at least ten to fifteen years because it may take a substantial number of years to determine whether any considerable change is occurring in the groundwater levels.

The SEO states, "[s]uch a [three year] timeframe allows this office and appropriators time to study how the Order affects the groundwater resource, hold another public hearing, and modify the Order's language if necessary."[153] However, the Order does not state whether data collection would continue if the Order is rescinded. If the current Order were to be replaced or rescinded, appropriators would be permitted to quit collecting and reporting data. It would be a complete waste of resources if data collection were to stop. The SEO should adopt a separate or modified Order requiring appropriators to continue collecting water level data and monitoring wells even if the Order is rescinded or replaced. The more information the SEO can collect, the easier it will be to make an informed determination about which corrective controls are improving the groundwater levels.

IV. CONCLUSION

Laramie County's groundwater levels will continue to be depleted if water pumping continues at its current rate.[154] The SEO implemented the current

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[152] *See* Letter to Committee, *supra* note 106, at 4.

[153] Letter to Committee, *supra* note 106, at 4.

[154] *See supra* notes 59–94 and accompanying text.

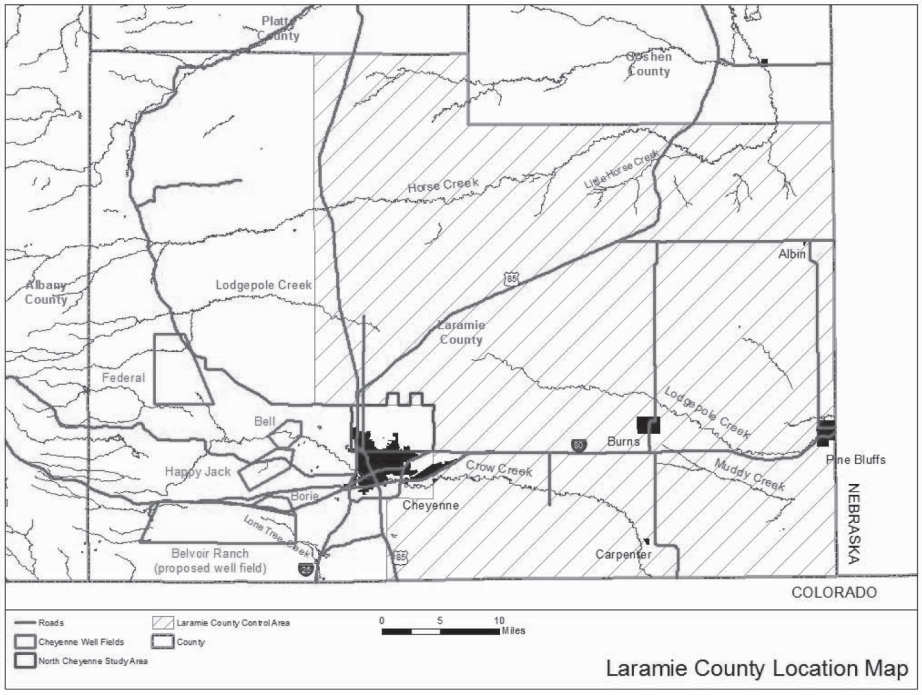
Order to reduce the amount of groundwater pumping within the control area.[155] While the current LCCA Order has good intentions and implements productive corrective controls, the SEO should encourage the LCCA to implement its own corrective controls plan.[156] If an LCCA constructed plan cannot be implemented, the current Order's corrective controls should be amended by extending the boundaries and metering requirements, imposing more protections and penalties, and implementing a permanent program for continued data collection within the control area.[157] With these promising corrective controls in place, the LCCA may see a positive change in the groundwater levels.

[155] *See supra* notes 105–26 and accompanying text.

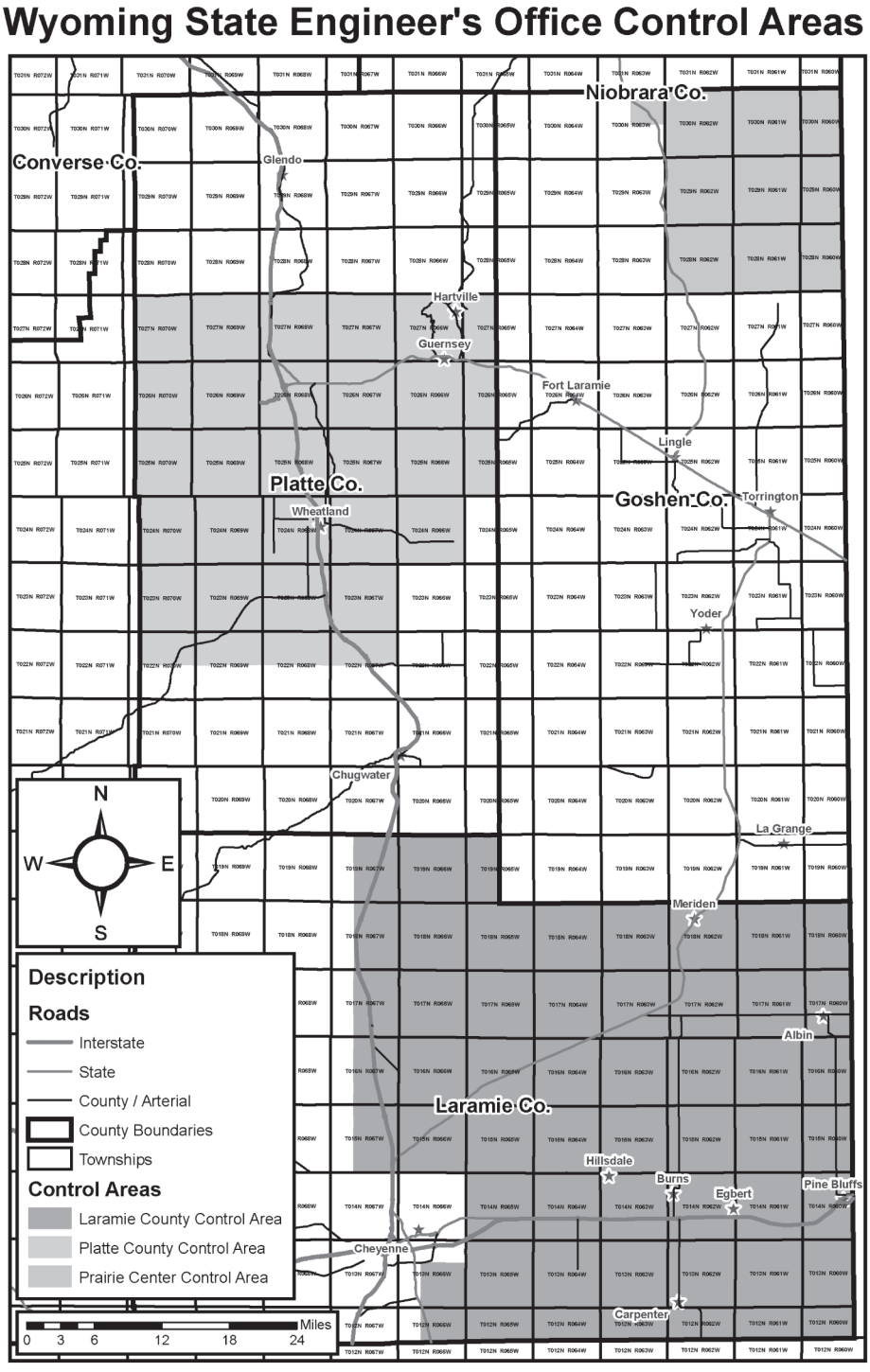
[156] *See supra* notes 127–35 and accompanying text.

[157] *See supra* notes 136–53 and accompanying text.

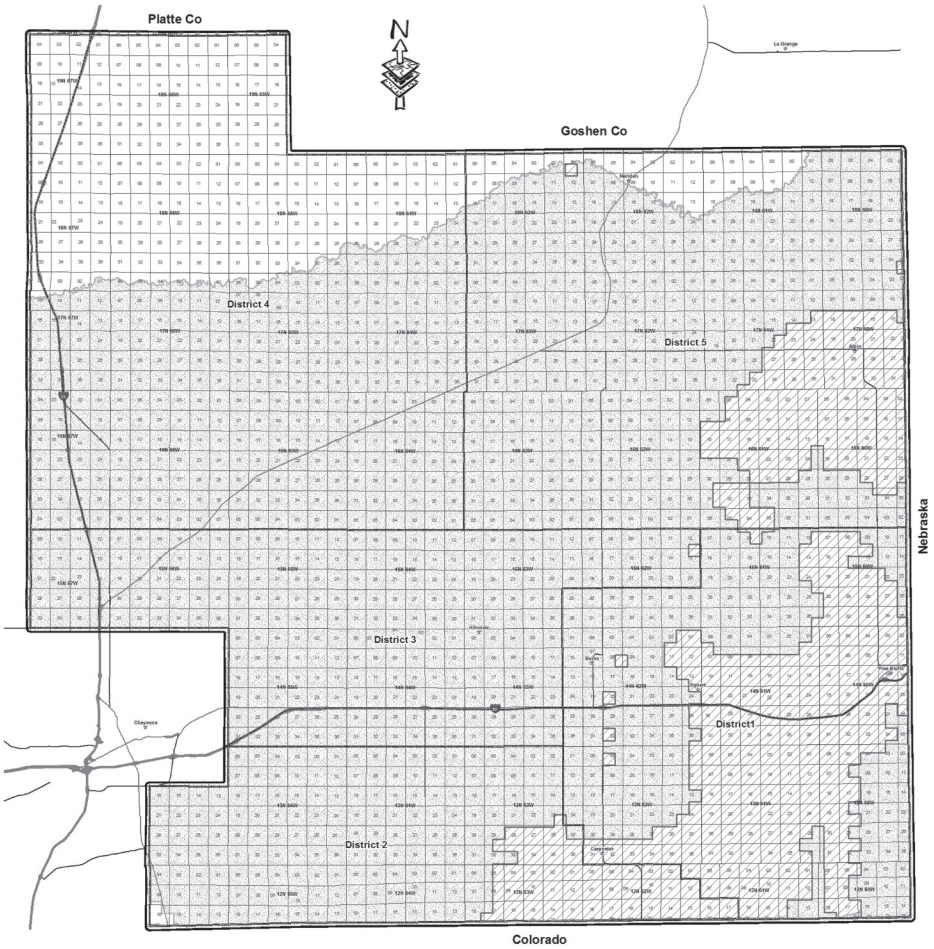
APPENDIX A: LARAMIE COUNTY CONTROL AREA MAP



APPENDIX B: CONTROL AREAS LOCATED WITHIN WYOMING



APPENDIX C: MAP OF DIFFERING HYDROGEOLOGIC AREAS WITHIN THE LCCA



APPENDIX D: WELL SPACING REQUIREMENTS FOR NEW PERMITS

WELL SPACING REQUIREMENTS FOR NEW PERMITS, EFFECTIVE APRIL 1, 2015

HIGH PLAINS AQUIFER	Stock/Dom	Miscellaneous ≤5 acre-feet	>5 and ≤40 acre-feet	>40 acre-feet
Drawdown area	1 per lot or 1 per 10 acres.	0.5 mile from non DOM and STO wells. Annual static water level measurement.	No new permits.	
Conservation area	1 per lot or 1 per 10 acres.		1 per 1/4 1/4 or 40 acres. Annual static water level measurements. Possible monitor well. Reduction >20% of original water column prohibited.	1.5 mile spacing from other large cap wells. Monitor well in same interval within 500'. Annual static water level measurement. Reduction >20% of original water column prohibited.
Unaffected area	No restrictions.		Annual static water level measurement.	
UNDERLYING UNITS	Stock/Dom	Miscellaneous ≤5 acre-feet	>5 and ≤40 acre-feet	>40 acre-feet
Underlying Units	1 per lot or 1 per 10 acres.		1 per 1/4 1/4 or 40 acres. Annual static water level measurements. Possible monitor well. Reduction >20% of original water column prohibited.	1.5 mile spacing from other large cap wells. Monitor well in same interval within 500'. Possible shallow monitor well. Annual static water level measurement. Reduction >20% of original water column prohibited.