

OAR 690 Division 512 Public Comments Received

Below is a tabulation of the written comments received during the public comment period for the OAR 690 Division 512 Harney Basin Groundwater Rules. Recordings of the public hearings can be found on the [Division 512 webpage](#).

Name
Andre Farm LLC
Angie Ketscher
Bachman Bay Farms
Bar Heart Ranch
Barbara Cannady
Barbara Howard
Ben McCanna
Caitlin Ketscher
Calla Hagle
Carl and Kate Neumann
Carolyn Latierra
Cheryl D. Smith
Cheryl Smith
Chris Skeens
Christina Keerins
Christine Brautigam
City of Burns
City of Hines
Craig Laoy

Craig Neher
Curt Blackburn
Dan Nichols
David Glennie
Debbie Gouveia
Debbie Webb
Deborah Antz
Denise Tschann
Dennis Gretschi
Donald Doverspike
Donna Harris
Department of State Lands
Erik Keerins
Fred Otley
Garrit A. Jager
Gary Marshal
Glenn Harris
Gregory E. Kupillas
Harmony Burright
Harney County
Harney County Farm Bureau
Harney Electric Cooperative
High Desert Partnership
Hilda Alison
Jacob Davis
James E. Cambell

Jaris Shelman
Jerry Grondin
Jesse Svejcar
John White
Julie Davis
Ken Bierly
Kenneth Homolka
Kevin Gill
Kirby Issac
Larry Callister
Larry Otley
Laurie O'Connor
Leslie Richman et al
Lisa Brown
Lola Tyler
Longfello Ragoczy
Lorissa Singhose
Lou Davies
Lower Blitzen Voltage

MEINZ Kelly A * WRD

From: vineto andre <vinetoandre@gmail.com>
Sent: Wednesday, August 13, 2025 1:42 PM
To: WRD_DL_rule-coordinator
Subject: Lower Blitzen-Voltage Subarea

Some people who received this message don't often get email from vinetoandre@gmail.com. [Learn why this is important](#)

Dear Mr Mainz,

We are writing to inform you of our opposition to reducing our water usage. We do not believe that we are in an area of critical concern.

Thank you
Andre Farm LLC
Vineto, Jessica and family
Martin and Shirley

August 5, 2025

**Kelly Mainz – Rulemaking Coordinator
Oregon Water Resources Department
725 Summer St. N.E. Suite A
Salem, OR 97301-1271**

Subject: Division 512 Rules

Dear Mr. Mainz,

My name is Angie Ketscher and I am a farmer and rancher in the Silver Creek Subarea. I served on the Groundwater Study Advisory Committee, was active with the Community Based Water Planning Collaborative, supported community-based groundwater level monitoring with the Harney County Watershed Council and was a member of the Rulemaking Advisory Committee (RAC) but eventually stopped attending. I care deeply about this community. I care deeply about this basin. This is my home and my heart and I want nothing more than to see that we all make it out of this okay, with our community and families and friendships and integrity intact.

I am really passionate about making sure people have the information and support they need to make good decisions, which is why I agreed to drive all over the basin taking groundwater level measurements and talking to people about what I was learning through the groundwater study. What I heard while I was driving around was that there are a lot of people who don't trust the government and who have been hurt by past decisions that the government has made. I also met many people who were genuinely interested in learning more about groundwater and finding ways to be better stewards of our precious water resources. I got to drive around with Darrick and Jerry and learn from them about the art and science of groundwater level measurements. I learned so much and I wouldn't trade it for anything.

Since 2015 I believed that the Department was going to partner with our community to understand our groundwater situation and work towards sustainable management. It seems like somewhere along the way the Department forgot its commitments to our community. As a member of the RAC there was no space for our voices. From the beginning of that process it felt like the Department was there to convince us that they know what's best for us. We spent more time listening to them than discussing things as a Committee. The Department spent more time presenting and defending themselves than listening. I eventually got so frustrated that it wasn't good for my wellbeing to continue to participate. I question if the Department even cares about us. We are smart. We are hardworking. We care. We are not the problem. We want to be partners in water management.

These rules go all in on regulation. After nearly a decade of telling us that they want to partner with us and collaborate, now we see the true colors of the Department. Our greatest fear was that the Department wasn't genuinely interested in working with us and that fear is now being realized. We are working people. We work year round, in all weather conditions, sometimes around the clock. When we engage in government processes it's not because we have time, it's because we care. We don't get paid to show up. We actually lose money by participating, but we believe so deeply in caring for our community and caring for our natural resources that we make it work.

These rules go too far. The Department has backtracked on its promises and is going to leave many family farms in ruins as a result. These are real people with real families and real lives. These rules will have a massive economic impact that will cripple our economy. The Department did not minimize impacts to small businesses as they are required to do by law, they determined what they wanted to do and then defended it and left no room for discussion.

Here are my recommendations for the rules. Focus regulation on areas where data shows there is a clear problem – Weaver Springs and parts of the Northeast-Crane Subareas. For the rest of the basin, partner with us and help us manage water, the water that your agency granted legal rights for, better. In my area declines have been minimal. The Silver Creek Subarea is its own groundwater reservoir. The Silver Creek Subarea is not overdrawn, is reasonably stable, and can sustain the current amount of groundwater use. We can always do better, but there are not problems in our part of the basin. The Department has a responsibility to protect our water rights. Water rights that they granted because they found that water is available and that it is in the public interest. They can't change their minds now when the data still supports that same conclusion. The Department made promises to partner with us. These rules backtrack on existing responsibilities and past promises.

Follow the law. Keep your promises. Follow through on your commitments. Engage us as partners. We are willing and we are able.

Thank you for considering my comments.

July 23, 2025

**Kelly Meinz – Rulemaking Coordinator
Oregon Water Resources Department
725 Summer St. N.E. Suite A
Salem, OR 97301-1271**

Subject: Silver Creek Subarea Public Comments on Proposed Division 512 Rules

Dear Mr. Meinz,

Please accept these comments on behalf of the below signed individuals. Many of these individuals live in the Silver Creek Subarea or support businesses within the Silver Creek Subarea. We collectively request that the Department follow its existing policies and makes a greater effort to limit the economic impacts of proposed groundwater reductions in this area. Specifically, we make the following requests for the Division 512 rules:

- Designate the Upper Silver Creek area and the Lower Silver Creek/Warm Springs Valley/Harney Lake area as distinct groundwater reservoirs and establish distinct groundwater management goals based in existing policies of the state.
- Remove the Silver Creek Subarea from the Critical Groundwater Area designation or set the permissible total withdrawal to updated pumpage levels to protect existing users and uses.
- Include the definition of “reasonably stable” and “overdrawn” from OAR 690-008-0001 in the Division 512 rules and apply it in a management context.
- Identify in rule that regulatory reductions will not be made until wells are determined to no longer be “reasonably stable” or until decline conditions in permits are met or exceeded.
- Prevent transfers from other areas into this Subarea because it is not the same source.
- Encourage voluntary reductions in groundwater use through the development of a voluntary agreement in this Subarea.
- Specify the process by which the Department will consider local knowledge when making a determination of what constitutes “representative” wells for analysis. Actively partner with groundwater users to monitor groundwater levels and groundwater use and rebuild credibility and trust in Department data and science.
- Actively partner with groundwater users and others to better understand aquifer characteristics, the flow of groundwater and the change in spring discharge over time (setting a baseline for measuring change).

Representatives of the Silver Creek Subarea engaged in good faith in the Division 512 rulemaking process. Most of the questions asked still have not received answers from the Department and many of the concerns or suggestions raised were never meaningfully addressed. The representatives of this Subarea feel that the Department consistently took an approach of devising, presenting, and defending its position without meaningfully involving the public and impacted groundwater users. The Department has been selective in the information it presents and considers. Furthermore, the Department has not taken steps to minimize the fiscal impact on small businesses as required by ORS 183.330 and ORS 183.540. As written, the proposed rules will decimate our local economy, bankrupt local businesses, disrupt families, and destroy the social fabric and culture of our community.

For most of the rulemaking process Department was proposing no reductions in the Silver Creek area and modeling results showed that without reductions this area would achieve “near stable” groundwater levels (defined as ~0.1 ft/yr of decline). The Department changed its approach relatively late in the rulemaking process and is now requiring that the entire basin reach “durably stable” conditions (0 ft/yr of decline) within 30 years. The Department is currently proposing a 28% reduction from current estimated pumpage in the Silver Creek area despite the fact that groundwater conditions meet the definition of “reasonably stable.” This level of reduction is not warranted for this Subarea based on existing policies and existing data.

According to ORS 537.525 and ORS 536.220 the Department is required by law to protect existing water rights. ORS 536.525 clearly states a preference for voluntary joint action with groundwater users prior to relying on the police power of the state. We urge the Department to honor previous commitments and existing statutory requirements and first meaningfully pursue joint action with groundwater users in the Silver Creek Subarea prior to pursuing punitive regulatory action. We are committed to maintaining our way of life and sustainably managing groundwater resources for future generations.

Groundwater users were recently allowed by the Department to develop additional acres in this area under the current Division 512 rules with the full understanding that if the decline conditions reached 18 feet in the approved wells and substantial site-specific evidence showed that wells were not reasonably stable, that those wells would be subject to regulation. During the previous rulemaking process Department leadership, including now Director Gall, and staff indicated that this area may actually be able to sustain additional development. For the past decade Department leadership and staff have indicated that there is not a problem in the Silver Creek area. The Department also consistently committed to partnership and collaboration through the Groundwater Study Advisory Committee process and the place-based integrated water planning process.

Groundwater levels in the Silver Creek Subarea are reasonably stable as per the definition in OAR 690-008-0001. The Department’s own data shows that declines throughout this area have been minimal. The Groundwater Level Trends analysis performed in 2024 show that the median overall decline is -2.5 to -3.5 ft and the median rate of decline is -0.4 to 0.5 ft/yr. Notably, these trends are well within the range of what is considered reasonably stable by the Department. Groundwater users have raised questions and concerns regarding the inclusion of some wells in this network that do not appear to track with the majority of wells and may not accurately represent conditions. These questions and concerns remain unaddressed by the Department. Data recently collected by groundwater users in the area are showing that groundwater levels in portions of the basin are stable depending on the timeframe used for analysis and some wells have even risen above reference levels set by the Department. No available data show that this area has met the criteria for designation as a critical groundwater area. There are no wells that have met the Department’s threshold for declining excessively or excessively declined. If Weaver Springs is treated as a separate area, which it should be, then Silver Creek is not overdrawn or about to be overdrawn by the Department’s own definition.

Groundwater users have been responsibly using water within the terms and conditions of their permits for decades. To our knowledge, no domestic wells in this area have lost access to groundwater or have been forced to deepen due to declining groundwater levels. No concerns have

been publicly raised by domestic well users or stockwater users in this Subarea. We share an interest and concern in groundwater fed ecosystems and are committed to partnering with the Department and others to set a baseline for understanding and measuring impacts to springs, improving our understanding of the complex hydrogeology in this region as it relates to spring discharge, and pursuing voluntary measures to protect ecologically significant springs. Unless downstream springs are protected with a senior water right, we do not believe that the Department currently has legal authority to regulate other groundwater users in favor of unprotected springs.

Groundwater in the Silver Creek area is distinct from groundwater in the Silvies area, Weaver Springs area, Northeast parts of the basin, and Donner Und Blitzen area. Groundwater in much of the Silver Creek Subarea is modern water and is recharged through precipitation and streamflow in the uplands. The groundwater chemistry and quality are particular to this recharge area. The geology and subsurface are distinct from other parts of the basin. The Silver Creek subarea was providing minimal recharge to the Weaver Springs area prior to the overallocation and over pumpage of groundwater in that Subarea, which created a new, artificial, low point in the basin. Weaver Springs is now drawing in groundwater from surrounding areas, leading to groundwater level declines that emanate from that cone of depression to other Subareas while the Weaver Springs area equilibrates. We believe that there is sufficient information to demonstrate that these areas are hydrologically distinct and should be managed as different groundwater reservoirs.

If the Silver Creek Subarea was not hydrologically connected to the Weaver Springs area we question whether the Department would be proposing regulatory action. Basin stakeholders have been raising concerns about overdevelopment of the Weaver Springs area for over a decade. Despite significant evidence demonstrating a significant and growing problem in Weaver Springs, the Department and Commission chose not to take immediate action to remedy the issues there. The Silver Creek Subarea is now unfairly being held responsible for the Department's own inaction in Weaver Springs.

The Department previously made a determination in the Silver Creek area that groundwater is available, within the capacity of the resource, and that groundwater use was in the public interest as required by ORS 537.621. The groundwater study clearly shows that groundwater is not overdrawn and is still available by the Department's own definition if additional development is not allowed to occur and if Weaver Springs is treated as a distinct Subarea. We urge the Department and Commission to adhere to existing statutes and rules rather than pursuing unprecedented groundwater reductions through regulations that lack a defensible legal and technical basis.

The groundwater users in this area are primarily family owned and operated businesses that have a strong desire to stay in business and pass our operations onto our children and grandchildren. We believe we can sustainably manage groundwater and voluntarily reduce groundwater use without putting any farms out of business in this area. Our recommendations will ensure that groundwater management in this area is consistent with groundwater laws and policies, protects groundwater for current and future uses, builds a culture of partnership and collaboration with the state, reduces litigation and implementation costs of the Department, and minimizes economic impacts to Harney County. We stand ready to work with the Department to responsibly and sustainably manage groundwater in the Silver Creek Subarea.

Signed by:

First and Last Name	Representing/Affiliation

Signed by:

First and Last Name	Representing/Affiliation

Signed by:

First and Last Name	Representing/Affiliation

Signed by:

First and Last Name	Representing/Affiliation

Signed by:

First and Last Name	Representing/Affiliation
Chad Wright	Double O Valley
Chrissy Moon	Double O Valley
Geran Moon	Double O Valley

Silver Creek Subarea Division 512 Public Comments Sign-On Letter

Signed by:

First and Last Name	Representing/Affiliation
Ross R. Ketscher	Ketscher Cattle Co.
Thomas W. Ketscher	Ketscher Cattle Co.
Sony L Marshall	Broken Circle Company
Caitlin Ketscher (Caitlin Ketscher)	Ketscher Cattle Co.
Caitlin Ketscher	Ketscher Cattle Co.
Heather M. Mische	Concern Citizen
Larry Mische	M.C.S. Place
Krista Bass KRB	Ketscher Cattle Co.
Tom Bass Tom Bass	Ketscher Cattle Co.
Mona Bass	Concern citizen
Word	Ketscher Cattle Co.
Word	Ketscher Cattle Co.
Ben Bass	Ketscher Cattle Co.
Ray Stegman	Double O School
Georgia Marshman	Broken Circle Company

July 23, 2025

Kelly Mainz – Rulemaking Coordinator
Oregon Water Resources Department
725 Summer St. N.E. Suite A
Salem, OR 97301-1271

Subject: Lower Blitzen-Voltage Subarea Comments on Proposed Division 512 Rules

Dear Mr. Mainz,

Please accept these comments on behalf of the below signed individuals. Many of these individuals live in the Blitzen-Voltage Subarea or support businesses within the Blitzen-Voltage Subarea. We collectively request that the Department follow its existing policies and make a greater effort to limit the economic impacts of proposed groundwater reductions in this area. Specifically, we make the following requests for the Division 512 rules:

- Include the Upper Blitzen area with the Lower Blitzen area (especially if Subarea boundaries may affect transfers).
- Designate the area that is primarily recharged from the Steens Mountain uplands and the Donner Und Blitzen river as a distinct groundwater reservoir and establish distinct groundwater management goals based on current groundwater conditions and existing policies of the state.
- Remove the Blitzen-Voltage Subarea from the Critical Groundwater Area designation or, if it is designated, set the permissible total withdrawal to estimated recharge levels.
- Include the definition of “reasonably stable” and “overdrawn” from OAR 690-008-0001 in the Division 512 rules and apply it in a management context.
- Prevent additional transfers into the Blitzen-Voltage Subarea from other Subareas because it is not the same source.
- Identify in rule that regulatory reductions will not be made until wells are determined to no longer be “reasonably stable” or until decline conditions in permits are met or exceeded.
- Encourage voluntary reductions in groundwater use through the development of a voluntary agreement in this Subarea. The groundwater users in this area expect to bring a Voluntary Agreement forward to the Commission by December 2025.
- Specify the process by which the Department will consider local knowledge when making a determination of what constitutes “representative” wells for analysis. Actively partner with groundwater users to monitor groundwater levels and groundwater use and rebuild credibility and trust in Department data and science.
- Actively partner with groundwater users and others to better understand aquifer characteristics, the flow of groundwater, groundwater level changes, and the change in spring discharge over time (setting a baseline for measuring change).

Representatives of the Lower Blitzen-Voltage Subarea engaged in good faith in the Division 512 rulemaking process. Most of the questions asked still have not received answers from the Department and many of the concerns or suggestions raised were never meaningfully addressed. The representatives of this Subarea feel that the Department consistently took an approach of

devising, presenting, and defending its position without meaningfully involving the public and impacted groundwater users. The Department has been selective in the information it presents and considers. Furthermore, the Department has not taken steps to minimize the fiscal impact on small businesses as required by ORS 183.330 and ORS 183.540. As written, the proposed rules will decimate our local economy, bankrupt small businesses, disrupt families, and destroy the social fabric and culture of our community.

For most of the rulemaking process Department was proposing no reductions in the Lower Blitzen-Voltage area. The Department changed its approach relatively late in the rulemaking process and is now requiring that the entire basin reach “durably stable” conditions (0 ft/yr of decline) within 30 years. The Department is currently proposing a 39% reduction from current estimated pumpage in the Lower Blitzen-Voltage area despite the fact that groundwater conditions meet the definition of “reasonably stable.” This level of reduction is not warranted for this Subarea based on existing policies and existing data.

Groundwater users were allowed by the Department to develop additional acres in this area under the current Division 512 rules with the full understanding that if the decline conditions reached 18 feet in the approved wells and substantial site-specific evidence showed that wells were not reasonably stable, that those wells would be subject to regulation. During the previous rulemaking process, Department leadership, including now Director Gall, and staff indicated that this area may actually be able to sustain additional development. For the past decade Department leadership and staff have indicated that there is not a problem in the Donner Und Blitzen area and have even highlighted the need for and benefit of additional data given that this part of the basin was relatively data sparse. The Department also consistently committed to partnership and collaboration through the Groundwater Study Advisory Committee process and the place-based integrated water planning process.

According to ORS 537.525 and ORS 536.220 the Department is required by law to protect existing water rights. ORS 536.525 clearly states a preference for voluntary joint action with groundwater users prior to relying on the police power of the state. We urge the Department to honor previous commitments and existing statutory requirements and first meaningfully pursue joint action with groundwater users in the Lower Blitzen-Voltage Subarea prior to pursuing punitive regulatory action. We are committed to maintaining our way of life and sustainably managing groundwater resources for future generations.

Groundwater levels in the Lower Blitzen-Voltage Subarea are reasonably stable per the definition in OAR 690-008-0001. The Department’s own data shows that declines throughout this area have been minimal. The Groundwater Level Trends analysis performed in 2024 show that the median overall decline is -2.9 ft and the median rate of decline is -0.3 ft/yr. Notably, these trends are far below the range of what is considered reasonably stable by the Department. Groundwater users have raised questions and concerns regarding the inclusion of some wells in this network that do not appear to track with the majority of wells and may not accurately represent conditions. Data recently collected by groundwater users in the area are showing that groundwater levels in portions of the basin are stable depending on the timeframe used for analysis and some wells have even risen above reference levels set by the Department. No available data show that this area has met

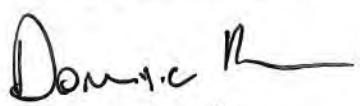
the criteria for designation as a critical groundwater area. There are no wells that have met the Department's threshold for declining excessively or excessively declined.

Groundwater users have been responsibly using water within the terms and conditions of their permits for decades. To our knowledge, no domestic wells in this Subarea have lost access to groundwater or have been forced to deepen due to declining groundwater levels. No concerns have been publicly raised by domestic well users or stockwater users in this Subarea. We share an interest and concern in groundwater fed ecosystems and are committed to partnering with the Department and others to set a baseline for understanding and measuring impacts to springs, improving our understanding of the complex hydrogeology in this region as it relates to spring discharge, and pursuing voluntary measures to protect ecologically significant springs. Notably, it is the Department's own actions to authorize a transfer out of Weaver Springs and into the Lower Blitzen-Voltage Subarea that may have the most significant localized impact on springs in this area. Unless downstream springs are protected with a senior water right, we do not believe that the Department has legal authority to regulate in favor of unprotected springs or native vegetation.

Groundwater in the Lower Blitzen-Voltage area is distinct from groundwater in the Silvies area, Silver Creek area, Weaver Springs area, and Northeast-Crane area. Groundwater in much of the Lower Blitzen-Voltage Subarea is modern water and is recharged through precipitation in the uplands and streamflow infiltration in the lowlands. The groundwater chemistry and quality are particular to this recharge area. The geology and subsurface are distinct from other parts of the basin. Although the Lower Blitzen-Voltage and Northeast-Crane Subareas may drain or discharge to the same place, we question whether the Lower Blitzen-Voltage Subarea provides significant recharge to the Northeast-Crane area due to the existing hydraulic gradient. We believe that there is sufficient information to demonstrate that these areas are hydrologically distinct and should be treated as different management areas.

The Department previously made a determination in the Lower Blitzen-Voltage area that groundwater is available and that groundwater use was in the public interest. The groundwater study clearly shows that groundwater is not overdrawn and is still available by the Department's own definition, even if all water rights were fully developed. We urge the Department and Commission to adhere to existing statutes and rules rather than pursue unprecedented groundwater reductions through regulations that lack a defensible legal and technical basis.

The groundwater users in this area are primarily family owned and operated businesses that have a strong desire to stay in business and pass our operations onto our children and grandchildren. We believe we can sustainably manage groundwater and voluntarily reduce groundwater use without putting any farms out of business in this area. Our recommendations will ensure that groundwater management in this area is consistent with groundwater laws and policies, protects groundwater for current and future uses, builds a culture of partnership and collaboration with the state, reduces litigation and implementation costs of the Department, and minimizes economic impacts to Harney County. We stand ready to work with the Department to responsibly and sustainably manage groundwater in the Lower Blitzen-Voltage Subarea.

 Dominic Bachman
 Jill Bachman

Dominic Bachman
Jill Bachman

HARTT Laura A * WRD

From: Jill Bachman <bachmanbayfarms@gmail.com>
Sent: Tuesday, August 12, 2025 4:09 PM
To: harmony@saltandfresh.solutions; WRD_DL_rule-coordinator
Cc: HUNTINGTON Geoff * GOV; FERRARI Chandra Alene * GOV; Rep Owens; Sen McLane; bill.hart@harneycountyor.gov; rob.frank@harneycountyor.gov; patty.dorroh@harneycountyor.gov; ericquaemptswrc@gmail.com; Woody Wolfe; joemollwrc@gmail.com; janleewrc@gmail.com; juliesmithermanwrc@gmail.com; kathykiharawrc@gmail.com; GALL Ivan K * WRD; WOODCOCK Douglas E * WRD; RANCIER Racquel R * WRD
Subject: Bachman Farm Comments on Proposed OWRD 512 Rules
Attachments: Bachman OWRD Division 512 comments 8_12_2025.pdf; Lower Blitzen -Voltage subarea Comments sign on letter.pdf

Some people who received this message don't often get email from bachmanbayfarms@gmail.com. [Learn why this is important](#)

To Whom It May Concern,

Please see our attached signed comments on the 512 rule as well as a copy of the Lower Blitzen-Voltage Subarea sign on letter signed by us.

We very much appreciate all of you and hope you find our comments useful.

Sincerely,

Dominic & Jill Bachman

--

Bachman Bay Farms

Malheur Gap Farm

Jill and Dominic Bachman

51789 HWY 78

Princeton, OR 97721



Bachman Bay Farms

Malheur Gap Farm

Dominic & Jill Bachman

51789 highway 78, Princeton, OR 97738

Bachmanbayfarms@gmail.com

August 12, 2025

Kelly Meinz – Rulemaking Coordinator
Oregon Water Resources Department
725 Summer St. N. E. Suite A
Salem, OR 97301-1271

Subject: Dominic and Jill Bachman comments on proposed OWRD Division 512 rules.

We are first generation farmers. We recently put our life's savings into owning a hay and cattle farm in Princeton, Oregon at the far southeastern edge of the current critical groundwater area. We believe in the American dream of owning a farm. Of course, we don't own our farm the bank does, and we purchased at a time of high interest rates and low hay value. That may not have been the smartest move however, we specifically chose the location of this farm based on the seniority of its water rights and a location known for excellent quality and quantity of groundwater. As of May 2025, we learned that the Windy Point Subarea had been removed, and we are now part of the Northeast Crane subarea. On a scale of Harney basin, we are a small operation. However, if we lose our water rights, our bankruptcy will hurt just as much as it would for anyone. Our retirement, our children's inheritance and our ability to own a piece of the American dream is at risk here. If we don't feel the department is taking our concerns seriously, we will be one of many in this county taking legal action against the OWRD over these new rules.

The state has been over-allocating water and allowing transfers that didn't make sense for decades and now wants to come down on this basin much harder than it has ever done anywhere in the state. This feels very unfair and puts us into defensive mode.

As new farmers in the area our neighbors have greeted us with open arms helping us at much cost to themselves without asking for anything. When a pickup or tractor drives by our farm, we wave, and folks wave back, and we know those people are our friends. When our neighbor's hay bailer caught fire this July, another neighbor was immediately there with a plan to help them get hay done before the fire was even put out! We have always wanted to live in a place where neighbors truly take care of each other, and we have found that place. We would give everything we have to protect our farm and our community.

We currently irrigate with two agricultural wells using four, older wheel lines some of them over ¼ mile long and about a dozen handline sections. We move water twice and sometimes three times a day. It is exhausting work. We grow alfalfa, grass hay and have leased out our land to fall cattle grazing. Although we have only owned this farm for three years, we talked extensively with the previous owners who lived and farmed here for 26 years, as well as talking to two different farmers who leased this property. They all said the same thing. They have not seen any major drops in water well levels and even on the driest of years this place has had more than enough water for irrigation needs.

We spent many years living in the Weaver Springs area, and we saw firsthand the impacts of groundwater static levels going down drying out the land, neighbors having to drill deeper and deeper for domestic wells. We specifically moved to Princeton because the area is known to have lots of high quality groundwater and few problems with wells.

It does not go un-noticed that the deadline for comments is in August during 2nd and 3rd cutting while me and all our neighbors are at our absolute busiest. It feels like this was done to reduce the number of comments from irrigators. Many folks had to make the choice between losing thousands or more dollars by missing a cutting window or attend in person meetings.

It also does not go un-noticed how the division putting lines on maps as "subareas" is causing families and friends to be at odds with each other and this is

not the Harney County way. Right now, it really matters if you are on this side of the road or that side. I already saw neighbors turning against neighbors simply because they were in different subareas yet across the road from each other. In many cases the same ranch or farm is on both sides of this imagined line. Some families are split with one member of the family on one side and another on the other side. Simply by adding these lines and creating areas the division is causing a fissure among neighbors and families.

We are worried about the economic changes. Large scale and small family farms and ranches will crumble nobody has financial margins to lose land right now. We will see hundreds of jobs destroyed as mechanics, hay cutters, well drillers, farm helpers and dozens of other impacts will crush the economy of Harney County. This will have a ripple effect on the economy of the entire region.

We are also concerned about the possibility of cultural changes as the possibility exists for many more houses that are not connected to agriculture will change the dynamic of the county. In this county it takes 160 acres to put in a home we have already seen many of the pivots that took the CREP buyout being sold as home sites. Having large amounts of land that is zoned as exclusive farm use yet not viable for farming or ranching may have huge impacts on the community.

We believe in water conservation and feel flow meters should be installed on every ag well and those meters should be checked and quantified by a third party and all costs associated with this should be paid for by the department.

We are worried about groundwater and surface water in the basin and would like to see the department focus on positive ways to improve the position they have put us all in.

- 1- Our farm is at the far eastern edge of what the state is calling the critical groundwater boundary. Our eastern boundary is the end of the boundary and any farm east of us has no water curtailment. We are within one mile of a farm south of us in the Malheur gap that is not even considered in the same basin as us according to the department and it is facing no water restrictions. If our farm was on the other side of Highway 78 we would be in a different subarea as the farms directly across the road from us are all in

the Lower Blitzen-Voltage subarea. Does the department believe highway 78 somehow effects groundwater?

- 2- We feel we are in the wrong subarea. Please see our suggested subarea map below. We really should be in the Lower Blitzen-Voltage Subarea all our wells and water and well drillers and geology seem to fit with that. We can easily see the north Steens across the road from our house that is our watershed. There is no cone of depression in our area. Contour maps show how we are so different that some of the areas in the Crane subarea. The geologic feature of windy point makes obvious sense we are in the wrong area. We believe all the irrigated lands south of windy point including farms owned by Thompson, Wilson, Potter and Otley should all be in the Greater Blitzen-Voltage subarea. Again see the suggested subarea map below.

- In the 2022 USGS hydrologic budget for the basins groundwater they clearly delineated the southern region of the basin as everything south of windy point and based that line of major geographic and cultural features. (see map attached below from page 20 of [SIR 2021-5128: Hydrologic budget of the Harney Basin groundwater system, southeastern Oregon \(usgs.gov\)](#))
 - On page 8-9 in the 2024 [Groundwater Level Trends in the Proposed Harney Basin Critical Groundwater Area](#) report it appears to us that all the wells that are reported on south of windy point are similar to the wells of the lower Blitzen-Voltage Subarea. Further evidence that this area is more like that subarea than to the Northeastern Crane Subarea. (see attached page 8-9)
- We feel that the department proposing 39% decrease in the L. Blitzen-Voltage Subarea is not founded in science and they failed to show us how this level of cuts make any sense in this area. Especially when other subareas with much more widespread water losses are receiving less curtailments and currently many pivots are being transferred into the lower Blitzen subarea. Just

today we drove by and saw a new pivot being constructed on what has historically been sage steppe habitat. How does this make any sense? How can the department justify cutting an area with very little water loss more than they are cutting some of the areas with extensive water loss? How can the department justify the need to cut an area 39% (the second highest curtailment of all subareas) and yet allow water rights and new pivots to be transferred into this area?

- We question the departments believe of hydrologic connection and everything being one groundwater reservoir. Why are wells near each other so different? Why are many wells not losing water if everything is connected?
- We believe the departments job is actually to protect our water rights, and the department should be using the existing definition of "reasonably stable" consistent with current law.
- The department has known about water issues in the basin for decades yet is still allowing water rights to be transferred from areas such as weaver springs how is this protecting water rights?
- We believe the cuts in some subareas are much higher than they should be and much more aggressive than in any other basin in the state. We would like to see lower reductions implemented in the short term. Give the agricultural community a chance to work on our own issues. This method was shown to be effective with sage grouse listing in the western united states. Farmers and ranchers are conservationists and can be very good at working together to figure out natural resource issues.
- I believe the framework should be flexible if groundwater losses in some areas are reduced those areas should receive less cuts.
- I believe the voluntary agreements are the only reasonable options available to irrigators and the department should do everything in its power to support and take seriously any local voluntary agreements that are created by the water users.

- 1- We value natural resources including our soil, fish and wildlife and have been working with the NRCS to ensure our farm is not only economically viable but also sustainable long term with a priority on beneficial use to crops and cattle but also on the edges of our farm leaving habitat for wildlife, native trees and shrubs, as well as doing our duty fighting invasive weeds.

We are frustrated with our lack of options we have tried to work with the NRCS for several years to find a program that would help us become more efficient water users. There is no program available that we know of to help us convert our outdated wheel lines that are highly inefficient into a more efficient system such as pivot irrigation. We would be giving up all our corners and using less water. This seems like a win-win for us and the department, our farm and the watershed.

We investigated enrolling in the CREP program. However, that program is not flexible and basically an all or nothing program. The program should really focus on what can be done with the ground to establish perennial plants before turning off the water. The department should be working with the local Agricultural Research Station to determine what species should be planted that will be viable as dryland mix. We have seen what happens in weaver springs when pivots are just shut off. These lands do not go back to native range and are nothing but invasive weed nightmares for decades.

The Harney groundwater CREP does not pay enough currently to get what we had to pay to buy irrigated lands. Many of us have not paid off mortgages and owe around \$4,500 an acre for irrigated lands. If the program had more competitive rates and was more flexible perhaps more people would enroll or could enroll if they see that curtailment is eminent. This could be a final safety net for junior water users. At this point very few people can be 100% certain if they are a junior water user or not!

We strongly suggest the department work harder to ensure everything possible has been done with the NRCS and FSA to prioritize and improve programs that could helping irrigators upgrade to the most efficient systems and to create a flexible system where an irrigator could enroll part of their farm such as pivot corners or inefficient areas into CREP.

The department should be doing all it can to create programs within the department, FSA and NRCS to reduce water use and help irrigators transition ground out of irrigation or to more efficient systems instead of focusing on policies that will shut off irrigators. We don't understand why this has not been the focus of the departments efforts in the first place. The department should be funneling conservation assistance expertise and money into programs to help with the situation they created.

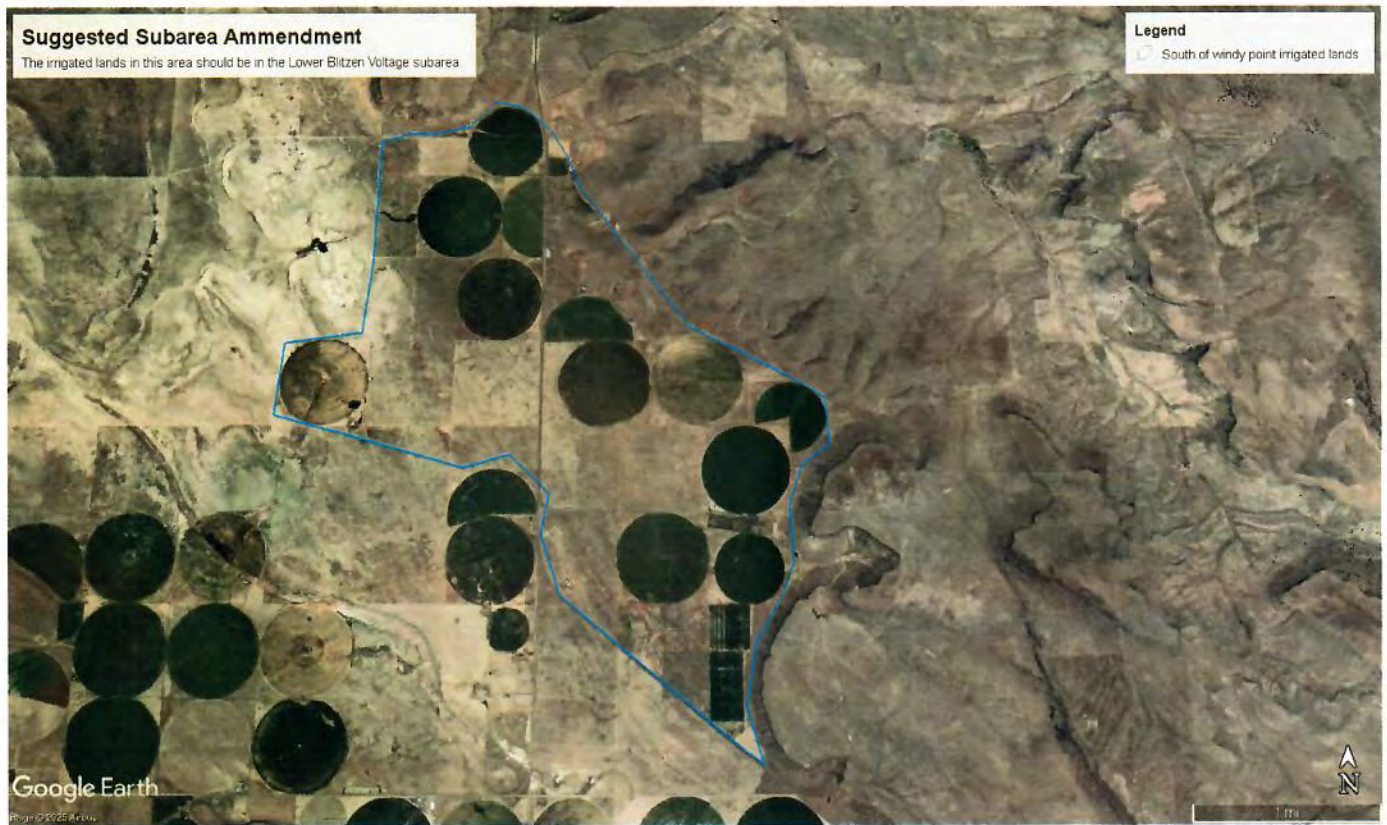
The department should also assess the viability of utilizing and funding the High Desert Partnership to find creative ways to assist the farming and ranching community as we transition to reduced water use.

Thank you for the opportunity to provide comments on these proposed policies. I hope that the department will seriously consider our comments.

Sincerely,

Handwritten signatures of Dominic and Jill Bachman. The signature for Dominic is a stylized 'D' followed by a horizontal line. The signature for Jill is a stylized 'J' followed by a horizontal line.

Dominic & Jill Bachman



4 Hydrologic Budget of the Harney Basin Groundwater System, Southeastern Oregon

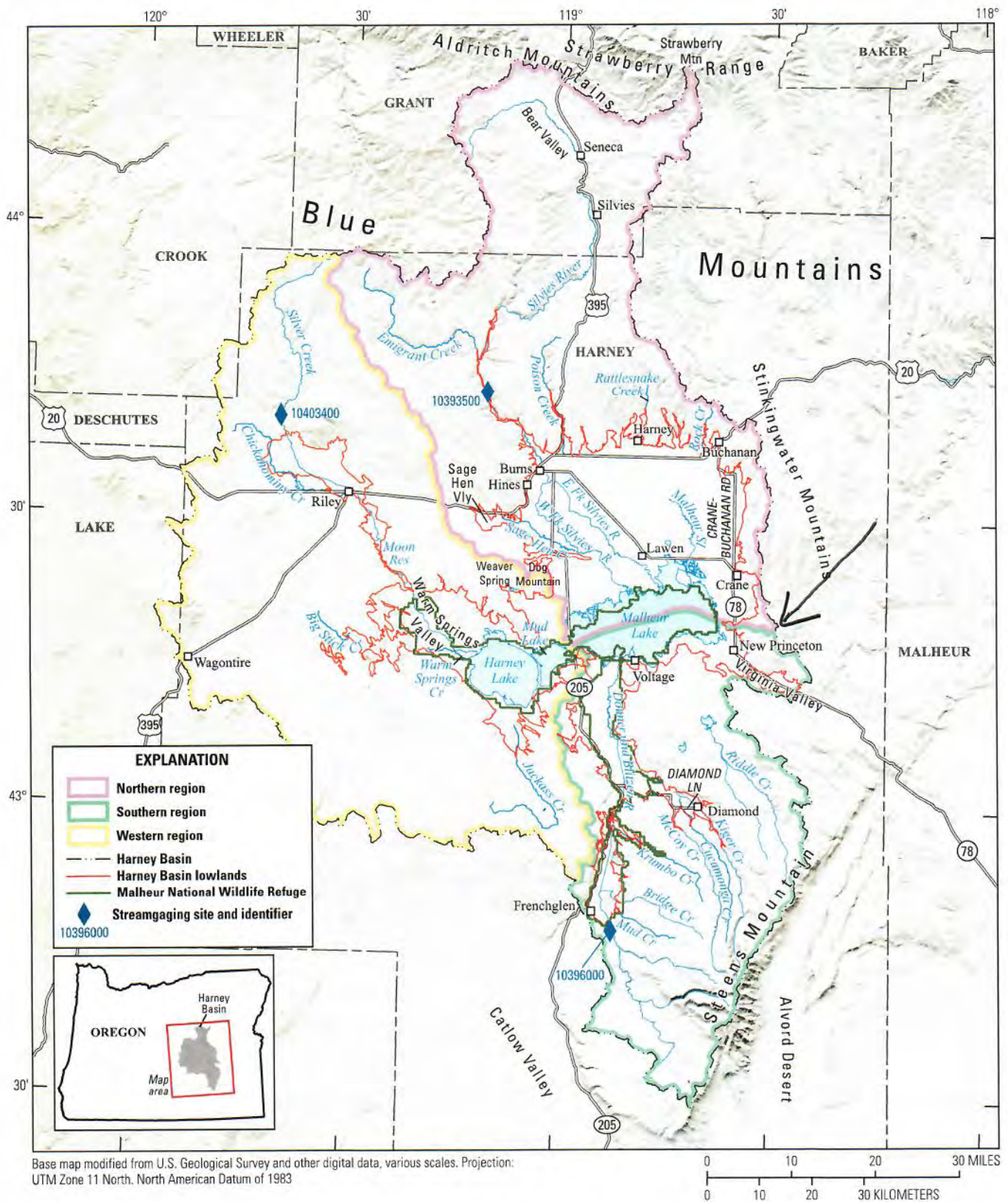


Figure 1. Location of the Harney Basin, southeastern Oregon, and its major geographic and cultural features. Northern, southern, and western regions are included for discussion and analysis purposes.

Summary Statistics of Groundwater Level Trends

Summary statistics for groundwater level trends can be used to evaluate the relative severity of groundwater level declines across the 15 proposed subareas. Table 1 provides maximum, minimum, average, and median values for groundwater level decline magnitude for each subarea and Table 2 provides maximum, minimum, average, and median values groundwater level decline rate for each subarea. A total of 424 wells are included in the groundwater level decline magnitude analysis, and 266 wells are included in the decline rate analysis.

Note: negative values presented throughout this document represent declining trends.

Table 1: Summary statistics of groundwater level decline magnitude by subarea. Negative values indicate a declining trend. (n= the number of wells for which decline magnitude could be calculated).

Subarea	Minimum Magnitude (feet)	Maximum Magnitude (feet)	Average Magnitude (feet)	Median Magnitude (feet)
Weaver Springs (n=68)	-116.9	0.0	-47.0	-48.6
Rock Creek (n=16)	-69.8	-0.5	-21.5	-19.1
Crane (n=26)	-68.8	-1.7	-22.5	-20.1
North Harney (n=9)	-66.8	-9.1	-35.9	-31.3
Crane-Buchanan (n=58)	-52.0	0.0	-14.7	-10.3
Lawen (n=23)	-51.7	-0.1	-18.5	-18.3
Poison Ck-Rattlesnake Ck (n=35)	-45.3	0.0	-10.9	-10.6
Lower Blitzen-Voltage (n=54)	-39.8	0.0	-4.9	-2.9
Dog Mountain (n=21)	-31.8	0.0	-15.4	-11.5
Silvies (n=37)	-29.3	0.0	-4.9	-2.6
Windy Point (n=15)	-26.0	0.0	-13.4	-14.2
Upper Silver Creek (n=32)	-23.1	0.0	-5.4	-3.5
Upper Blitzen (n=10)	-10.4	0.0	-1.6	-0.7
Harney Lake (n=18)	-9.3	0.0	-2.9	-2.5
Malheur Lake (n=2)	-1.0	-0.5	-0.8	-0.8

Table 2: Summary statistics of groundwater level decline rate by subarea. Negative values indicate a declining trend. (n= the number of wells for which decline rate could be calculated).

Subarea	Minimum Rate (ft/year)	Maximum Rate (ft/year)	Average Rate (ft/year)	Median Rate (ft/year)
Weaver Springs (n=34)	-10.5	-0.5	-4.7	-4.3
Lawen (n=16)	-7.0	0.4	-2.1	-2.2
Dog Mountain (n=19)	-5.5	-0.4	-1.9	-1.6
Rock Creek (n=12)	-5.0	-0.6	-3.1	-3.3
Crane (n=20)	-4.7	1.3	-1.2	-0.9
Upper Silver Creek (n=23)	-4.4	-0.1	-0.5	-0.4
North Harney (n=7)	-4.0	-0.9	-2.3	-2.2
Crane-Buchanan (n=40)	-3.8	4.9	-1.3	-1.4
Poison Ck-Rattlesnake Ck (n=20)	-3.0	0.7	-0.9	-0.8
Windy Point (n=6)	-2.2	-0.7	-1.1	-0.9
Silvies (n=26)	-1.1	0.6	-0.3	-0.3
Lower Blitzen-Voltage (n=27)	-1.1	0.4	-0.3	-0.3
Harney Lake (n=11)	-0.9	-0.1	-0.4	-0.4
Upper Blitzen (n=4)	-0.2	0.1	0.0	0.1
Malheur Lake (n=1)	0.3	0.3	0.3	0.3

The distribution of decline magnitude and decline rate values across the 15 proposed Harney Basin Critical Groundwater Area subareas is shown in Figure 2. These maps can also be explored interactively online on the [Harney Basin Critical Groundwater Area Process Interactive Map](#).

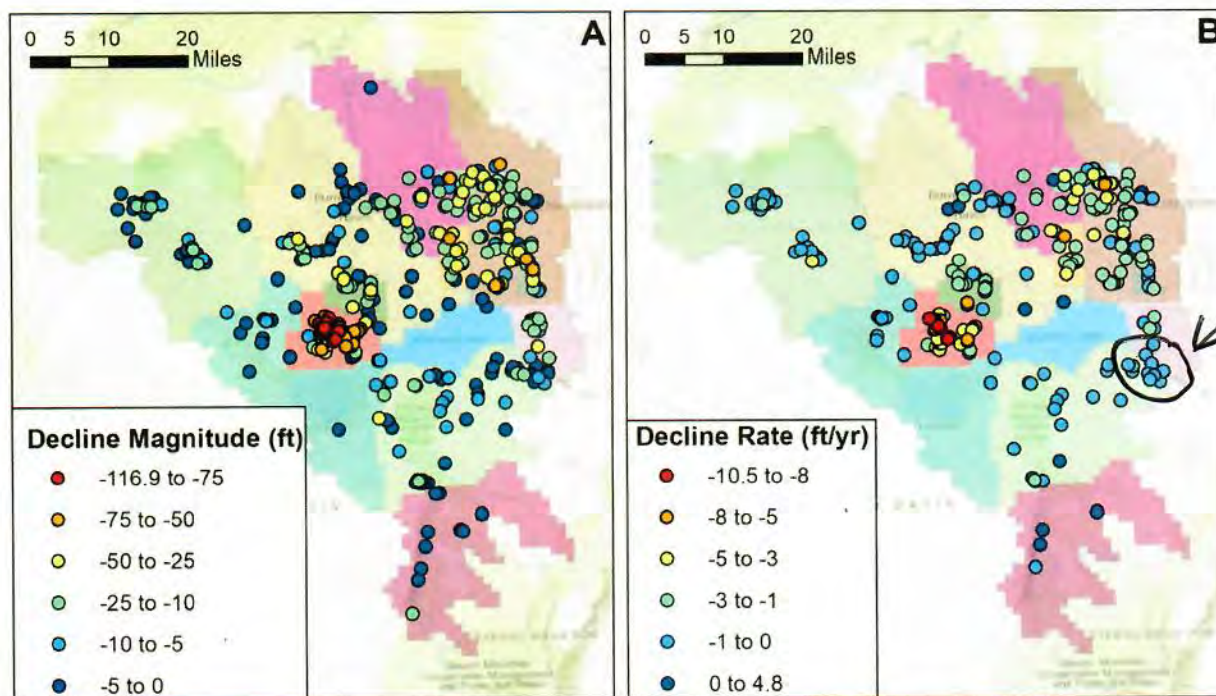


Figure 2: Maps showing the distribution of decline magnitude values (A) and decline rate values (B) across the proposed Harney Basin Critical Groundwater Area.

August 12, 2025

Kelly Mainz
Oregon Water Resources Department
725 Summer St. NE Suite A
Salem, OR 97301

Re: Chapter 690 Division 512 Rulemaking

Dear Kelly and members of the Harney Division 512 Rulemaking Advisory Committee,

We appreciate the opportunity to provide comments in response to the Chapter 690 Division 512 rules promulgated by the Oregon Water Resources Department (OWRD). Since the 90's, we have owned and operated Bar Heart Ranch, raising verified all-natural black angus cattle. Additionally, our ranch proudly grows and harvests high-quality alfalfa hay and has been doing so since 1957. We are proud stewards of the land, taking great care to find efficiencies and implement improvements in our system that support the longevity and production of the ground we desperately depend upon. Bar Heart Ranch's irrigation systems have evolved over the years, at our financial expense, upgrading from wheel lines to pivots that support a higher crop yield while decreasing our overall water usage. We were recently made aware of the Chapter 690 Division 512 rules promulgated by the Oregon Water Resources Department (OWRD), and we appreciate the opportunity to express our significant concerns.

While our operation has never experienced a decline in the water levels from our domestic and agricultural wells, we are not naïve to the declining water rates within the Harney Basin. However, we continually find ourselves asking how this situation has become so dire. In 2015, OWRD announced a moratorium on new agricultural wells¹. One year later, OWRD defaulted on the moratorium, allowing new permits and wells to be drilled, despite pervasive worries about groundwater depletion. In the last decade, there have been new agricultural wells drilled, and you can clearly see that groundwater pumpage doubled in that timeframe, as indicated by the USGS and OWRD study conducted². Our operation did not increase our water usage during that time period, nor did many of our neighbors.

The proposed rules egregiously disregard provisions of Oregon's 116-year-old water law that are the foundation for the state's water use and management. As senior water right holders, the proposed rules unduly punish our ranch despite decades of operating responsibly and cooperating with our neighbors. As you know, Oregon's water rights are based on the principle of prior appropriation, allowing senior water right holders priority. We believe the spirit of this law should be reflected in the rules. Mitigation efforts could examine the new permit holders, which correlates with significant increases in pumpage we have seen in the last decade as mentioned above.

Harney County is a tight-knit community, as dictated by our sprawling geography and sparse population. We all look out for our neighbors and we're proud to lend-a-hand

when it's needed. While we appreciate the time spent developing these rules, we cannot help but feel increased collaboration and inclusion of local stakeholders would result in pragmatic solutions that support the longevity of our community and the lifestyle we all cherish.

Respectfully,

Kerry & Ross Opie
Bar Heart Ranch, Owners

¹ https://www.heraldandnews.com/news/northwest/harney-county-groundwater-no-new-ag-wells/article_9a5ad766-e2e5-51b7-816f-37690e3a4aa7.html

² [Groundwater Resources of the Harney Basin, Southeastern Oregon — FS 2022-3052](#)

Comments on Proposed Division 512 Rules

TO: Kelly Mainz – Rulemaking Coordinator
Oregon Water Resources Department
725 Summer St NE. Suite A
Salem, OR 97301-1271

FROM: Barbara Cannady
Box 3009
Princeton, OR 97721

DATE: August 12, 2025

Kelly,

As promised, I am submitting an expanded explanation of conversations we have had before and my comments made at the public hearing on August 5, 2025, at 5:00 pm. For brevity, I will focus on topics that I have not heard repeated often from others as well as a few comments identifying where I agree and disagree with the bad actors in the shadows.

- 1. PROCESS:** I was present at the first meeting on “the planning process,” and consider it my introduction to “wokeness.” The presentation of a “Participation Agreement” was intended to control the narrative. We were told that if we did not “agree” we would not be allowed to vote (that premise held thru the years and different moderators), we were NOT to say anything considered criticism outside of the meeting AND if we left the group we were to find our own like minded replacement. As far as I know, I am the only one who participated in discussions without signing the “Agreement.” I chose free speech over a vote that I was probably not going to win anyway. I felt that I was there to represent those landowners and permittees who could not be, whether the consensus agreed with me or not.

In the beginning, permittees and landowners with domestic wells should have met separately from the Agency and environmental representatives that controlled most of the outcomes. Agency and environmental folk should have been placed in an advisory position from the beginning and not equal to landowners who will pay for the career directed opinions. They are paid to be there, while most of the landowners were not. Over the many years of this process, attendance and a commitment of time for understanding was expensive and to the deterrence of many. Farmer and rancher livelihoods are dependent upon their time spent in associated activities, such as haying, calving, etc. Attending meetings that vary in productivity may not rise to the top of priorities when you know you will be outnumbered from the start.

2. **PERMITEE INVOLVEMENT:** Most of my neighbors that began with your process dropped out with the entertainment of the one pool concept. Landowners who owned more than one well, recognizing differences in water quality, and did not believe that hypothesis. By the time the recognition of multiple water tables and zones was reached, my neighbors had already withdrawn with the belief that “they” are going to do what “they” are going to do!” And in fairness to that thought, we have been told that scientific data has been submitted and dismissed by the Oregon Water Resource Department (OWRD) because it did not fit the desired narrative outcome.

It took me over a year to recognize that the Department needed the one pool narrative in order to comply with the ORS requirements for the “Critical Water Area” designation. It would have been easier to explain that stipulation and intent to the landowners at the beginning rather than run them off due to frustration with the Agency agenda.

3. **JUNIOR vs SENIOR WATER RIGHT ASSAULT (Oppose Splitting Dates by Sub-Area):**

At the recent Stockgrower’s meeting, I asked what was the cutoff date between senior and junior water rights if activities had to shut down! The answer I was given was concerning. One of the attendees answered that each sub-basin would be different. So you could have different outcomes between highways and imaginary lines.

This explains why a small group of the self-chosen ones were in the back of the 512 meeting where boundaries of the sub-basins were being gerrymandered ever so slightly for their personal collective benefit. IF the Department is going to argue one pool, or one connected system, than they need to recognize that the current legal process was created within a system of priority dates covering the entire county as a unit. The sub-basins can be used to monitor excessive cones of decline, but should not be used to intermingle priority dates, and create more confusion in the scheme of implementation and regulation.

The process you have today is all about reimagining priority dates and empowering junior water right holders at the expense of senior water right holders. Mr. Ken Bierly has stated that the critical ground water area decisions would be made by a small group because, a small number of permit holders own the majority of the water rights in Harney County. True now, but how many of the water rights they hold are Senior Water Rights? How many are after 1990, 2000, or even 2010?

4. **OWRD EMPLOYEE ACCESS/TRESPASS:** I have recently had a OWRD employee appear on my property without notice. When I questioned that he had not called, he responded that they had the authority to access any private property!

At the public hearing at the Crane Store, an OWRD staff member first said that they were granting themselves access to private property to check static water levels. The party then retracted and then said they would have the OWRD Commission grant them that right!

Representative Mark Owens stated at the Stockgrower's Meeting (July 22nd) that if not allowing access, the OWRD staff would simply call the Sheriff!

Harney County Sheriff, Dan Jenkins, has a different take:

On 7/24/2025 2:06 PM, Dan Jenkins wrote:

> Barbara,

>

> The landowner, or their designee, is the only one who can give consent for someone to come on their private property.

>

> The only exception that I am aware of is if a search warrant was applied for and granted by a judge (circuit court or federal magistrate) to allow OWRD personnel on the property. I do not know the usual practices of OWRD personnel, but I would venture to guess they do not utilize search warrants.

>

> The "commission" would not trump the 4th Amendment which provides for people to be secure in their property and homes.

>

> The Sheriff's Office definitely would not assist OWRD personnel with a "forced entry". We would be happy to arrest them for trespass if they actually did something so foolish as to force their way onto someone's property.

>

> Dan

>

> Harney County Sheriff's Office

> Sheriff Dan Jenkins

> 485 North Court Avenue

> Burns, Oregon 97720

> Office: (541) 573-6028

> Fax: (541) 573-1226

As a landowner, I not only want to know who and when someone is on my property (liability is also an issue) but I want to know where they have been. In today's world, the introduction and extensive cost of controlling noxious invasive weeds is an expensive and time consuming issue. For example, if an OWRD employee is coming from Tree Top Ranches, on Highway 78, a known infestation of Medusahead, no one would want that vehicle traveling to the middle of their irrigation field or pasture without a thorough wash down.

5. **RECOGNITION OF SELF-SERVICE of BAD ACTORS:** No one wants to admit that members of their community would intentionally sabotage their peers. While it may sound heroic to say that they are trying to keep all irrigators in business, a handful of local power and money individuals

have organized to insure they are the last ones standing. There is nothing illegal about collectively hiring a lobbyist and law firm but their secrecy and insistence upon exclusion of others input gives them away.

It appears hypocritical for this group to complain about lack of transparency of any group or agency, while adopting the same posture and game plan. We have an elected official who has admitted that it is for his personal business, but fails to see a conflict of interest. When the OWRD's intent was to concentrate on very specific areas, this group worked to spread the pain to gain support and distract attention away from themselves.

One senior water right holder approached me with the question "Who told OWRD that we would be happy to share," she asked? "WE DON'T WANT TO SHARE!" Now some of the older family members have added newer water rights to their collection, and they will fight for those. But, most senior water right holders do not want to share. Their livelihoods are based on three cuttings. Cutting their water allocation may end that annual goal. They expect the law (as they have known it) to protect them. They just want to be left alone. The "new investor class" want to create rules to price small family operators out. Senior water right holders have their money invested in their places and family. We cannot afford contested legal costs. But we know we will be left alone when the water is gone.

6. **HARNEY COUNTY FARM BUREAU AND STOCKGROWERS LETTER:** While I agree with most of the "group letter," I do not agree with the claims of how much water is still available. I do not believe anyone knows for sure due to the vast number of irrigation wells that have not been active in over thirty years, but still maintain their priority dates.

Somewhere between 2002 and 2006, Ivan Gall appeared at a meeting in Burns to announce that, due to lack of staff, OWRD would no longer monitor irrigation activities. The only way that a non-operational well's permit would be challenged would be by complaint, requiring an \$800 non-refundable fee, with no guarantee of how the complaint would be addressed. No written documentation of this Departmental decision was sent to Harney County permit holders. Meanwhile, filing complaints was discouraged. I personally know of five neighboring wells that have not pumped in over thirty years, but maintain active priority dates!

This also excused OWRD for never performing the duties of this obligation in the first place, leaving untold numbers of permits in place from wells that had been abandoned, or in some cases never drilled. Consequently, these permits are still transferable and can be reactivated with the older priority dates by new permit holders.

7. **MOVING FORWARD:** To their credit, the OWRD has disclosed that they were aware of the over allocation of permits by 2010, while some say that realization was made by 2000. That said, the OWRD continued making bank on permit applications, selling water we did not have. This expansion continues to create stress within our communities as junior water right holders, that should not have been approved in the first place, wish to challenge senior water right holders to “share” their resources on the basis of power and money.

To succeed in good faith with this process, the OWRD must acknowledge their responsibility for the creation of our current crisis status of over allocation and be accountable to current State Laws. Any “new rules” should be preceded by implementation of the “existing rules”. This meaning to shut down wells from the last approved back to 2010, and then measure. Further reductions as necessary to stabilize the water tables by areas may be necessary. No one can expect OWRD to successfully implement new “complicated” rules when there is a history of not implementing the “simple” rules in current law.

This has been a long journey. I would like to commend you, Kelly, for your patience and the OWRD as a whole for using multiple venues and media in trying to communicate with permittees and landowners. Regardless of our collective flaws, we can only hope that something positive will result.

Respectfully Submitted,

Barbara Cannady

Barbara Howard
P.O. Box 196
Drewsey, OR 97904
541-589-2631

Oregon Water Resources Department
OAR 690 Division 512, Rules Coordinator

Dear Members,

I am pleased to have been involved in the RAC Committee. I wasn't sure what that would entail. It started out to be 5 meetings, which ended up being 15 meetings. It was very worthwhile, if only to get a feel for how the WRD works. The RAC made no decisions, but made some suggestions, reducing the Sub-areas from fifteen to seven areas and doing an Economic Study. The economic study is flawed in that it doesn't acknowledge the total agriculture value in Harney County.

I feel the biggest disagreement was on Harney Basin being one big "bowl" of water. That doesn't make any sense, when there are wells of all different depths and volumes of water. So, there would be many different pockets of water.

The saddest decision will be the community as a whole in Harney County will be decimated by the state's decision to curtail all waters, even at different levels of curtailment. Not many in Harney County basin own their land out right, so they will be bankrupt, because they won't be able to sell any crops.

It wasn't mentioned at the meetings, and I received information that Burns and Hines will be curtailed ten per cent from the largest amount of usage. So, are hospitals and schools included in this decision? Where is the right "every American has the right to water"?

I received information there was a study done in 1992, which informed the state, the basin was being severely over-drawn. Why did the State not act then, to stop issuing permits and to drill irrigation wells? Why did it take 32 years, until 2024 to stop issuing permits? The OWRD has the weight on its shoulders for being complicit in the problem. The State legislature needs to be educated on what the needs are, so the OWRD can make decisions that are unbiased. So far, there is NO accountability or responsibility to do what is right. I get the feeling the agenda is to bring more government control to the people. Right now, the

people have very little say because we are not educated in these matters, but the educated have not done very well in these matters!

I will close with the thought, anyone who is involved with these decisions take your time and know you are making the RIGHT decisions.

Respectfully submitted,

Barbara Howard

Barbara Howard

HARTT Laura A * WRD

From: Howard Ranch <tbhoward1974@gmail.com>
Sent: Monday, August 11, 2025 4:20 PM
To: WRD_DL_rule-coordinator
Subject: RAC 512 Comments
Attachments: 2025 RAC Comments.docx

Hi Kelly. These are my comments, Thanks for your help the past two years, Barbara

HARTT Laura A * WRD

From: GONZALEZ Danielle L * WRD
Sent: Monday, August 11, 2025 4:34 PM
To: Ben McCanna
Cc: WRD_DL_rule-coordinator
Subject: Re: Comment about 512 rules

Thank you Ben. We have received your comments for the Division 512 rulemaking. Please note, once the Public Comment Period concludes, agency staff and leadership come together to analyze and discuss them to determine what action needs to happen whether it be a change or stay as proposed. The Commission will receive all comments in full along with an synopsis of themes across commentors. Then the staff drafts a response to each item identified in the comments and provide that to the Commission for review before adoption.

Thank you again and have a great evening!

Danielle Gonzalez
Policy Section Manager
danielle.l.gonzalez@water.oregon.gov
(503) 507-8758



From: Ben McCanna <benmccanna@yahoo.com>
Sent: Monday, August 11, 2025 4:11 PM
To: GONZALEZ Danielle L * WRD <danielle.l.gonzalez@water.oregon.gov>
Subject: Comment about 512 rules

You don't often get email from benmccanna@yahoo.com. [Learn why this is important](#)

August 11, 2025

To Danielle Gonzalez,

Subject: Comments on Division 512 Rules

My name is Ben McCanna and I am on a domestic well in the Weaver Springs area. I have been involved in the groundwater discussions for 10 years, with participation in the community based water planning process and a member of the RAC. Much of my feedback was never meaningfully addressed, especially my concerns about transfers and my request to put parts of Dog Mountain and Weaver Springs together, so these comments are still relevant.

I appreciate that reductions in the Weaver Springs area will be significant and swift. Groundwater levels have declined more than 100 feet in this area and I would like to see groundwater levels in Weaver Springs recover, not just stabilize. I do not understand why Dog Mountain has the least amount of proposed reductions for the basin after the Department "optimized" their model. I'm not sure exactly what you optimized for, but I don't think this is optimal. Language about how transfers will be handled should be included in rules. It's not clear right now how transfers will happen in the basin and over the past 10 years the Department has allowed transfers that have made things worse in our area and other parts of the basin.

Thank you for considering these comments.

Input/Feedback from Ben McCanna (5/9/25)

This has been a really long and difficult process to be a part of. I really struggle to figure out the best way to participate and provide feedback.

What changes, if any, would you make to: The CGWA boundary rule language? Please include specific language that you would like to see in rule, if possible.

I support the Department having the authority it needs to fix the problem.

What changes, if any, would you make to: The subarea rule language? Please include specific language that you would like to see in rule, if possible.

I don't really have enough knowledge or a strong enough opinion to talk about all the different subareas. I still think Weaver Springs and Dog Mountain should be put together. Our water in Weaver Springs is coming from different parts of the basin, including Dog Mountain and Silver Creek, and we need to understand how these different areas are connected and respond to each other. At a minimum I want to see my groundwater stop declining. Ideally I want to see my groundwater come back up. It should have never gotten to this point.

What changes, if any, would you make to: The target groundwater level trend and the date to achieve the target groundwater level trend rule language? Please include specific language that you would like to see in rule, if possible.

Groundwater levels should not be allowed to go down forever. We were ringing alarm bells in Weaver Springs 10 years ago and nothing happened. The groundwater levels went down way too far in Weaver Springs. That shouldn't be allowed to happen anywhere. As a general rule in this part of Oregon the Water Resources Department should know that if they authorize concentrated development of a whole lot of pivots, they are going to see issues, they are going to see declines. Water use should be sprinkled across the basin and the Department should not allow a huge amount of development in any one place because it is going to affect the people around them. I think it's important to spread out the development so that there aren't significant impacts to neighbors and the groundwater use is happening at more sustainable levels. I agree with the goal, but in some places like Weaver Springs I actually want to see groundwater levels come up. I want to see my water come back. I'm not really in a position to remark on other parts of the basin except to say that we shouldn't let what happened in Weaver Springs happen anywhere else in Oregon, water levels were allowed to decline way too much in Weaver Springs and we need to see some recovery, and the Department needs to consider how their decisions will affect localized declines and be more proactive about preventing negative impacts to neighbors. This is especially true with transfers.

What changes, if any, would you make to: The proposed permissible total withdrawal for subareas rule language? Please include specific language that you would like to see in rule, if possible.

I have no idea how to make sense of or remark on these numbers. There needs to be balance. I'm glad to see bigger reductions proposed for Weaver Springs. Weaver Springs and Dog Mountain need to be combined. The reductions in Dog Mountain need to be more. It doesn't make sense that Dog Mountain now has the least reductions of anywhere in the basin. That doesn't seem fair.

What changes, if any, would you make to: The determination of initial allocation for groundwater rights rule language? Please include specific language that you would like to see in rule, if possible.

What changes, if any, would you make to: The proposed reduction schedule rule language? Please include specific language that you would like to see in rule, if possible.

It's hard for me to really have an opinion about what should happen in other parts of the basin. I am glad to see that reductions will happen quickly in Weaver Springs. Weaver Springs and Dog Mountain should be combined. I want to better understand how Silver Creek and Weaver Springs are connected. I will say that I don't think that it really took 30 years to create the problem in Weaver Springs. I think it's really only been within the last 5 or so years that the problem got really bad here. Why is it taking so long to fix it?

What changes, if any, would you make to: The proposed adaptive management rule language? Please include specific language that you would like to see in rule, if possible.

I'm wary of this being dragged out over time and the Department not taking its job seriously and just going along with whatever the irrigators want. I think there needs to be time for the economy to transition, that makes sense, but then the people in the community actually have to get serious about moving away from groundwater irrigation and agriculture. Without pressure I see that we just maintain the status quo. We can't maintain the status quo. We're in the desert. We know we can't sustain this amount of groundwater use. Sustainability without harming people, including domestic wells, should be the goal.

What changes, if any, would you make to: The proposed reduction schedule changes in the adaptive management rule language? Please include specific language that you would like to see in rule, if possible.

Any other changes to Critical Groundwater Area rule language? Please include specific language that you would like to see in rule, if possible.

What changes, if any, would you make to: The proposed classification for new uses rule language? Please include specific language that you would like to see in rule, if possible.

What changes, if any, would you make to: Other Classification rule language? Please include specific language that you would like to see in rule, if possible.

What changes, if any, would you make to: Other Serious Water Management Problem Area (SWMPA) rule language? Please include specific language that you would like to see in rule, if possible.

I support the following two goals 1) no one should be using more water than they are legally entitled to and 2) we should know how much groundwater is being used on an annual basis. Whatever data allows the Department to achieve these two goals I support. I do support the use of innovative technology and considering the costs and benefits of different approaches, but ultimately I think this is information we need for effective groundwater management and support whatever the Department thinks it needs. I'm interested in learning more about OpenET.

Outside of the rules, what are other important elements of adaptive management? And what commitments are needed from OWRD or others on those?

Other Comments

I still don't understand what is happening with transfers or what will happen with transfers. What the Department has been allowing for transfers has been very troubling. I provide public comments on those and they never seem to matter. The Department hasn't given a clear answer about what's happening with transfers. They seem to be avoiding the conversation all together. I think the problems of the future in this basin are going to happen because of the transfers that the Department allows without any public input whatsoever. These are the people with money and influence who feel comfortable sucking up groundwater and making money and then moving on. They don't care about the community, they don't care about their neighbors. We should be supporting the smaller operations who really care about sustainability, who are looking out for their neighbors, who care about the long-term of this community, not the people who just want to get in and get out and make as much money as possible off of our water.

The Department should be doing everything it can to make sure that what happens here doesn't happen anywhere else in Oregon. What was allowed to happen in Weaver Springs is wrong. It has added so much stress and strain to my life. I don't want that to happen to anyone else. That's major for me and one of the reasons I'm so outspoken. What happened here is wrong.

Ben McCanna's Feedback on the Proposed Management Scenario (2/9/25)

What changes, if any, would you make to: The number of subareas? (Proposal: 7 subareas)

I want to see Weaver Springs and Dog Mountain be put together. Water used to run through from the north to the south (through Dog Mountain) to my property. Water is now running from south to the north because of the cone of depression and my groundwater quality has changed and is has a lot more alkalinity which is making my plants and trees die. Dog Mountain and Weaver Springs are connected. It's also connected to the Silver Creek area. The water that is flowing into Weaver Springs comes from the Silver Creek area. The Harney basin is a big old bowl – it flows from the north and from the south...it's a big bowl we are all pulling from. So from that perspective, I can also make sense of treating it as one management area. If it's 7 subareas or something like that put Weaver Springs and Dog Mountain together. The main thing I worry about is what will happen with transfers. How will these subareas affect transfers? They keep moving water around and developing more water and it shouldn't be allowed. Transfers are making things worse. I can see the benefit of subareas to be able to focus in on problem areas. Weaver Springs is a problem area that needed to be dealt with years ago. It's gone on too long.

What changes, if any, would you make to: The stability success metric? (Proposal: Median/50th percentile of wells)

I'm not so sure. In the Weaver Springs area the groundwater levels just keep going down. My well is dropping consistently. I'll guarantee you I'll lose a foot again this year because we're trying to fill this hole they created. Shouldn't those wells stop dropping all the way across the subarea? Shouldn't the goal be that all the wells stop declining? I don't want to see wells declining in Weaver Springs forever. In fact, I'd like to see groundwater levels come back in Weaver Springs. We've tolerated too much decline in this area. The groundwater levels have gone down too much. I don't know what metric makes sense, but I don't want the wells in my area to keep going down forever and I want to see some of that water come back.

What changes, if any, would you make to: The phasing timeline? (Proposal: Reductions are phased in every 6 years for 24 years).

For Weaver Springs that's too slow. I've already been waiting a decade for action and nothing has happened. Groundwater levels have already gone down 80-100 feet and you're telling me you're going to let them keep going down in Weaver Springs for 24-30 years? I would like to see more immediate action in Weaver Springs. This has been going on too long already and everyone is affected. The people who live right here have already been affected by these declines and everyone else will be affected by this hole in Weaver Springs. I'll be 90 in 24 years. That's too long to wait. I want to see water come back in my lifetime. I would like to enjoy my home and my water.

What changes, if any, would you make to: The timeline to achieve stability goal? (Proposal: 30 years to achieve the goal)

Like I said, that's too long for me. We need to deal with Weaver Springs and not let the groundwater keep declining here for another 30 years. We've been asking for action for 10 years. I'm tired of waiting and I'm tired of asking.

How would you incorporate or address discharge to streams and springs? (Proposal: Permissible total withdrawals are constrained in each subarea to maintain more than 50-70% of discharge to streams and springs from a 2022 baseline).

I don't know. I don't want to see groundwater levels go down forever. I want to see groundwater levels stop going down and start coming back up in Weaver Springs.

How would you incorporate or address changes in natural evapotranspiration? (Proposal: permissible total withdrawals are constrained in each subarea to maintain more than 60% of native vegetation maintains access to groundwater from a 2018 baseline).

I don't know. I don't want to see groundwater levels go down forever. I want to see groundwater levels stop going down and start coming back up in Weaver Springs.

How would you incorporate or address changes in dry domestic wells? (Proposal: Permissible total withdrawals are constrained in each subarea so that less than 170% of domestic wells lose access to water at their current depth from a 2018 baseline).

The folks in the Weaver Springs area have already been affected. I had to deepen my well from 110 to 165 feet because of declines. 100 feet of decline is too much. I don't think we should tolerate any more domestic wells losing water just so they can suck this area dry. I would like to see water actually come back for domestic well users in this area.

How would you incorporate or address changes in agricultural production? (Proposal: 24yrs of phasing, 30 years to achieve stability, and using subareas are designed to help reduce impacts to farms and associated small businesses; But agricultural production would be reduced by ~38% over 24 years under this scenario).

I think there's too much agricultural production, that's what these groundwater declines are saying, so we need to reduce agricultural production, but I don't know how much. We should reduce it until the groundwater levels stop going down. I don't know how much that is. I do know there's too much irrigation happening in my area and it's not sustainable.

How would you incorporate or address economic impacts associated with lost agricultural production from proposed reductions? (Proposal: There are economic impacts for all groundwater uses, losses in agricultural production result in a losses to farm revenue [~38%] and tax revenue [still being assessed]).

I don't think it's fair that people can make money using a public resource like water. I don't support using public water for private gain. I know we're going to have to take an economic hit. I don't know how much it is, but my perspective is that we're going to take the hit eventually...either now or sometime in the future when people lose access to water. Either way, we're going to take an economic hit. I know that there will be agriculture in this basin. I just want to make sure it's a sustainable amount and we don't allow groundwater mining.

How would you incorporate or address subarea specific considerations? For example, the sequencing of actions in various subareas or important considerations for different subareas (Proposal: All subareas have 24 years to implement reductions and 30 years to achieve stable conditions and the permissible total withdrawals are constrained by different factors depending on what has the highest impact [impacts to domestic wells, discharge to springs and streams, or impacts to native vegetation]).

I don't know. I would like to see action in Weaver Springs so that groundwater levels could maybe come back in my lifetime. I'm not sure about other areas. I know there other people who have been impacted in different parts of the basin and they're just not speaking up. I wish they would speak up.

What changes, if any, would you make to: The adaptive management plan? (Every 6 years, adjust based on groundwater levels only) I don't know. I just don't want this to last forever. I want to see things change.

Outside of the rules, what are other important elements of adaptive management? And what commitments are needed from OWRD or others on those?

We need to be talking about transfers. We need to understand why they are continuing to allow transfers and what can be done about it. Transfers are making things worse and the Department doesn't seem to be doing anything about it. How will the rules address or affect transfers? They're basically taking paper water and developing it and moving it around. It's not right. This is something we need to be talking about. I comment on the transfers and it doesn't ever seem to matter, they approve them without scrutinizing the effect of the decision. It needs to stop.

What other feedback would you like to give us right now on the proposed management scenario?

I've been frustrated by the process and it's hard for me to want to continue to engage. I just want you to do something to keep the groundwater levels from continuing to go down where I live and across the basin and across the state. This affects me every day you don't take action. Every year I'm watching my water go down. I can't sit in the same room with the people who have done this. Thank you for the opportunity to provide feedback and thank you for considering it. I'm not alone and I hope you hear from others.

August 5, 2025

Kelly Mainz – Rulemaking Coordinator
Oregon Water Resources Department
725 Summer St. N.E. Suite A
Salem, OR 97301-1271

Subject: Request for Immediate Action to Provide Relief to Domestic Wells in the Weaver Springs and Dog Mountain Areas

Dear Mr. Mainz,

Please accept these comments on behalf of the below signed individuals. Many of these individuals live in and around Weaver Springs and Dog Mountain and have homes served by domestic wells that have been impacted by declining groundwater levels due to overallocation and overdevelopment. We collectively request that the Department take immediate action in these areas to remedy longstanding issues that have not been previously addressed despite ongoing public concern and outcry. Specifically, we offer the following feedback on the Division 512 rules:

- Combine the Weaver Springs and Dog Mountain area together or increase the regulatory reductions (reduce the permissible total withdrawal) in the Dog Mountain area.
- Include the Weaver Springs and Dog Mountain areas within the Critical Groundwater Area as well as Silver Creek, which that recharges these areas.
- Focus near-term resources and action on this area as it is the area that has had the most significant impacts and has been a persistent, unaddressed problem in the basin.
- Immediately reduce groundwater withdrawals for irrigation as much as possible and as soon as possible within the Weaver Springs and Dog Mountain areas.
- Throughout the basin and across the state limit the concentration of groundwater irrigation to ensure sustainable supplies for nearby homes on domestic wells.

Residents on domestic wells in the Weaver Springs and Dog Mountain Subareas have waited over a decade for the Water Resources Department to take action in this area despite concerning data and public outcry. It has been exhausting and dispiriting engaging in various public processes sponsored by the Department without any observable impact on the ground. The Department continued to approve significant development in this area even after they had identified concerning groundwater level trends. As a result things have gotten progressively worse over the past 10 years. This should not have been allowed to happen and should not be allowed to happen in other communities.

Residents on domestic wells in our area were repeatedly told that we had no recourse because we had not fully penetrated the aquifer. Nothing we said or did seemed to make a bit of difference in the Department's internal processes. Public comments were provided on water rights transactions, including transfers that allowed for the irresponsible consolidation of unused corners into newly green pivots (effectively turning paper water into wet water, even in an area with known problems). We never heard back about our public comments and it appears that our comments largely fell on deaf ears since most transfers were approved and actually increased groundwater use in our area. This tells us that the Department's public process for water rights transactions is broken.

Declines in the Weaver Springs area are egregious. The Department's data shows that the median groundwater level change in that area is -48.6 feet overall, with one well having dropped -116.9 feet. The median rate of decline is -4.3 feet/year, with a max of -10.6 feet/year in one well. Although declines in the Dog Mountain area are not as bad, groundwater pumping for irrigation in this area is still having a negative impact on nearby domestic and stockwater wells. The Department has allowed unfettered development in this area to go on for far too long. This was a preventable problem that the Department let get out of hand and immediate action in this area should be prioritized.

Under ORS 537.525 the Department has a responsibility to assure "adequate and safe supplies of ground water for human consumption." The Department has not upheld this responsibility in our area. As a result, domestic and stockwater wells are in decline and groundwater quality has deteriorated. People, animals, and plants no longer have access to the quantity and quality of water that they are accustomed to and, we believe, entitled to.

Many of the operations in the Weaver Springs and Dog Mountain area are corporate and commercial operations with owners that do not have concern for this community or for their neighbors. Groundwater use should not be allowed where it is fueling a for-profit grab of limited groundwater resources. Groundwater should be prioritized for homes and business that are invested in this community and are committed to sustainable use of the resource for current and future Harney County residents, not out-of-state individuals or entities who only seemed concerned with making a profit while we suffer the consequences.

Within this basin and across the State of Oregon the Water Resources Department should no longer allow significant, concentrated development of groundwater irrigated operations. Where the Department authorizes a significant amount of groundwater pumpage in a concentrated area, it is highly likely that it will affect the localized groundwater levels and negatively impact nearby groundwater users, including domestic wells. The Department has not done enough to examine and remedy its own irresponsible and unsustainable practices as it relates to authorizing concentrated and unsustainable amounts of groundwater use for irrigation to the detriment of nearby users. The Department should proactively work to set forth the "lowest permissible water level in each groundwater reservoir" as outlined in ORS 537.685 in a way that provides certainty and security to households relying on domestic wells so that they do not have to endlessly chase water.

We support the Department's proposed rules and hope to see action that will stabilize groundwater levels and prevent excessive and perpetual groundwater declines. We support any efforts the Department can take to streamline implementation of the rules or to enforce permit decline conditions in our area to provide *immediate* relief in the Weaver Springs and Dog Mountain areas. We hope no other communities in Oregon have to sustain the type of harm that we have sustained due to overdevelopment of our precious groundwater resources.

Received

AUG 11 2025

OWRD

Weaver Springs-Dog Mountain Subarea Division 512 Public Comments Sign-On Letter

Signed by:

First and Last Name	Representing/Affiliation
Jessica Rodgers	Water Consumer / Heir
Ben McCanna	Domestic well owner / Weaver Springs
KEITH JORDAN	CONCERNED WATER CONSUMER
Donita Jordan	concerned user
Brandon Klawitter	Water Consumer / Heir
Kaitlin Klawitter Kait Klawitter	water Consumer / Heir

Ben McCanna 718

Page 44 of 628

Ben McCanna
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PORTLAND OR. RPDC 972

8 AUG 2025 PM 6 L



Kelly Mainz-Rulemaking Coordinator
Oregon Water Resources Department
725 Summer St. N.E., Suite A
Salem, OR. 97301-1271

97301-1271

MEINZ Kelly A * WRD

To: Caitlin Ketscher
Subject: RE: Harney Groundwater Public Comment

From: Caitlin Ketscher <caitlinketscher@gmail.com>
Sent: Wednesday, August 13, 2025 3:44 PM
To: WRD_DL_rule-coordinator <wrd_dl_rule-coordinator@water.oregon.gov>
Subject: Harney Groundwater Public Comment

Some people who received this message don't often get email from caitlinketscher@gmail.com. [Learn why this is important](#)

Hello,
Please see the attached public comment letter.

Thank you,
Caitlin Ketscher

Caitlin Ketscher
61835 Double O Ranch Road
PO Box 1241
Hines, OR 97738

August 12, 2025

Oregon Water Resources Department
725 Summer St. N.E. Suite A
Salem, OR 97301-1271

To Whom It May Concern:

Hello - My name is Caitlin Ketscher and I am a second generation rancher/farmer in Harney County. My husband and I have two young children and we hope that one or both of them want to continue what we're working towards. I am writing to voice concerns I have regarding the proposed groundwater regulations by the State of Oregon, both for my family and other residents of our county.

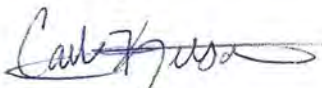
I will make this as concise as possible. My major concern is the overall economic impact this proposed plan will have on the entire area. Years ago, the Edward Hines Lumber Mill closure was devastating the county and I can't say there has been a full recovery. Now, the major employers in Harney County are agriculture & government. If available farm and ranch jobs are reduced due to reduced farming, it would most likely eventually result in decreased amenities and services available locally. More importantly, loss of health services and teachers. If farm and ranch workers have to relocate for alternate employment, schools could experience decreased enrollment resulting in budget difficulties.

I am also concerned about the more direct impact on local ranchers and farmers. While I acknowledge there are groundwater use issues that need to be addressed, I would prefer a solution sourced locally. With the information gathered from the groundwater study, I am confident we could develop regional action plans that would accomplish the goal of sustainable water use while allowing farmers and ranchers to make the transition to reduced water use on terms more suitable to them.

The proposed regulations on Harney County groundwater use are the harshest regulations in the state. I want to be held to the same standards as the rest of Oregon.

Thank you for your consideration.

Sincerely,



Caitlin Ketscher

August 13, 2025

Kelly Mainz – Rulemaking Coordinator
Oregon Water Resources Department
725 Summer St. N.E. Suite A
Salem, OR 97301-1271
Subject: Comments on Division 512 Rules

RE: Public Comment on Proposed Harney Basin Groundwater Policies

Dear Mr. Mainz,

I am writing to provide public comment on the proposed Harney Basin Groundwater Policies (updated June 19, 2025). My family and I live in the Dog Mountain area of Harney County, where we own land and rely on groundwater for both our home and livestock. I was an active participant in the Community-Based Water Planning effort for many years, and I write from a place of deep investment in both the land and the collaborative process that brought our basin to this pivotal moment.

Background and Accountability

The groundwater crisis in Harney County stems from systemic over-allocation of groundwater rights by the state—not solely from local mismanagement. The Oregon Water Resources Department (OWRD) issued groundwater permits far beyond sustainable limits, particularly in the lowlands, without the benefit of accurate aquifer data or understanding of recharge dynamics¹. The USGS groundwater study revealed that 95% of groundwater use in the basin is for irrigation, and that groundwater pumping now exceeds recharge by 110,000 acre-feet per year, largely in lowland areas². This imbalance, caused by policy failure, has resulted in aquifer declines of up to 140 feet in areas like Dog Mountain, where drawdown cones have shifted the natural flow of groundwater¹.

The pace of reductions is not just a policy choice—it is dictated by the hydrologic reality of the Harney Basin. The USGS groundwater study found, and the Harney Basin CGWA Rulemaking Report documents, aquifer declines of up to 140 feet in Dog Mountain (Sec. 4.2.3). This decline is occurring in a fully connected lowland groundwater system, meaning drawdowns in one subarea can worsen conditions in others. Without rapid and significant reductions in pumping, the study projects that domestic water supplies and natural groundwater discharges will continue to diminish. The Community-Based Water Plan emphasizes that delaying reductions will increase the scale and cost of mitigation,

while accelerating social and economic harm (Plan, p. 7–8). Therefore, reductions must be front-loaded to slow aquifer declines as soon as possible, ensuring that the basin remains on track for recovery and that both human and ecological needs are protected in the near term.

The current water budget does not explicitly account for ecological needs such as sustaining springs, wetlands, and groundwater-dependent vegetation—yet without reductions in pumping, the USGS study projects these natural discharges will decline significantly over time, threatening the ecological integrity of the Harney Basin and the cultural values tied to it¹²⁴. As OWRD now proposes sweeping reductions—up to 75% in some subareas—the agency must also commit substantial investment to support the same communities, including ecological ones, that have been placed at risk.

Impacts on Local Communities

The policies of the past have brought profound social and economic hardship. Harney County residents rely on groundwater for basic needs—particularly domestic use is the most fundamental need. Access to safe, clean, and reliable drinking water is a fundamental human right, recognized globally and embedded in the principles of sustainable water governance. Yet in some parts of Harney County, that right is already under threat as domestic wells run dry, forcing households to haul water or go without. State policy must prioritize protecting and restoring drinking water access.

As documented in the *Community-Based Water Plan*³ (p. 7–8), the effects of dry wells, failed crops, and land devaluation have compounded across generations. Dr. Misty Freeman’s research warns against treating rural communities as monolithic or interchangeable. She emphasizes that sustainable water reform must consider “the social infrastructure that sustains community”⁴ (p. 3), and that accountability must include recognition of the “emotional, cultural, and economic ties to land” (p. 4–6).

Specific, Proven Solutions That Deserve Support

OWRD and Harney County invested years in a locally led effort to develop a Community-Based Water Plan grounded in science, equity, and feasibility. The plan offers detailed strategies that are ready for implementation and must be fully integrated and funded in tandem with any regulatory process:

- Domestic Well Resilience: Programs to fund deepening, replacing, or supplementing domestic wells, along with water hauling assistance³ (p. 33–34).
- Voluntary Water Use Reductions & Crop Shifting: State-funded incentives are needed to support changes in crop type and reduction in irrigated acreage³ (p. 26–27).

- Irrigation Efficiency & Water Banking: Water-saving irrigation upgrades and shared-use arrangements, including exploration of a water bank, are critical³ (p. 23–25).
- Tiered Compensation for Groundwater Reductions: Voluntary groundwater right retirement with financial compensation can be a fair and effective tool³ (p. 28–29).
- Local Capacity & Staffing: Without funding for full-time local implementation staff, the implementation of policy will falter under administrative burden³ (p. 39–40).

Transparency and Technical Integrity

- Clarify Public Comment Review Process: The policy should specify how public comments will be reviewed, considered, and incorporated. Transparency in this process is essential to maintain community trust and ensure accountability.
- Reassess Groundwater Management Subarea Boundaries: The proposed subarea boundaries differ from those established in the USGS Harney Basin Groundwater Study¹ (p. 1). The scientific delineations in the USGS and OWRD joint publications should be the foundation for management zones, not newly drawn administrative lines. Specifically, there is a noticeable disparity in the reduction schedules between the Dog Mountain and Weaver Springs subareas. Under OAR 690-512-0070, Weaver Springs is required to implement 75% of its total reductions by 2028 and the remaining 25% by 2034, while Dog Mountain’s reductions are spread over a much longer timeline—extending to 2052. According to the Harney Basin CGWA Rulemaking Report, Dog Mountain has experienced aquifer declines of up to 140 feet in some wells and is hydrologically connected within the same over-allocated lowland groundwater system as Weaver Springs. Furthermore, Weaver Springs is excluded from the adaptive management process entirely (OAR 690-512-0080(1)), whereas Dog Mountain remains subject to it, creating additional inconsistency in how groundwater recovery will be achieved. Without clear justification for this discrepancy, the policy risks inequitable impacts and could undermine recovery goals in both subareas.

Additional Recommendations

- Ensure Fair Monitoring and Enforcement: Metering and reporting requirements must be supported with adequate technical assistance and funding to ensure compliance and to avoid unfairly burdening landowners who lack the resources to meet these new obligations.
- Fund Capacity for Adaptive Management: The policy depends on five adaptive management checkpoints between 2033 and 2057. These checkpoints require baseline data, ongoing analysis, and public communication. That level of

management will require more staff, more outreach, and consistent funding—not periodic reviews from a distance.

- Address Structural Barriers: As Dr. Freeman notes, successful groundwater reform in rural Oregon must confront long-standing barriers of “trust, infrastructure, and institutional responsiveness”⁴ (p. 6). Local investment in capacity-building is non-negotiable and must be part of the state’s accountability.

The Harney Basin stands at a historic inflection point. If implemented with care, funding, and partnership, this policy could serve as a model for community-driven water management where groundwater is conserved and restored while a rural community is sustained. But if rolled out with top-down mandates, minimal support, and without honoring the locally developed solutions in the Community-Based Water Plan, it will deepen economic harm and fracture the trust necessary for long-term success.

I urge OWRD and the Water Resources Commission to do more than regulate—to repair. OWRD and the Water Resources Commission should take responsibility, at least in part, for the over-allocation that caused this crisis and to back their proposed solutions with real investments in local implementation, monitoring, and resilience.

This is an opportunity to demonstrate that groundwater policy in Oregon can be both scientifically sound and socially just. By aligning reduction schedules with actual hydrologic conditions, honoring community-developed solutions, and safeguarding the human right to drinking water, OWRD can turn a legacy of over-allocation into a future of shared recovery. The Harney Basin deserves a policy that restores the aquifer while sustaining the people, cultures, and ecosystems that depend on it. Anything less risks repeating the very mistakes this rulemaking seeks to correct.

Sincerely,

Calla Hagle

Harney County resident and landowner

callahagle@gmail.com

References:

1. Garcia, C. A., et al. (2022). Hydrologic budget of the Harney Basin groundwater system, southeastern Oregon (USGS SIR 2021–5128). <https://doi.org/10.3133/sir20215128>
2. Gingerich, S. B., et al. (2022). Groundwater resources of the Harney Basin, southeastern Oregon (USGS Fact Sheet 2022–3052). <https://doi.org/10.3133/fs20223052>
3. Harney County Watershed Council. (2022). Community-Based Water Plan. Harney County Watershed Council.
4. Freeman, M. M. (2023). Complicating the Rural: Social considerations for implementing groundwater policy in Oregon’s Harney Basin. Oregon State University Extension Service. <https://opencampus.oregonstate.edu/complicating-the-rural/>

Oregon Water Resources Department,

I am sending this letter in regards to the proposed Harney Basin groundwater policies that are currently being discussed. My hope is that this letter will bring to light the catastrophic economic impact that the proposed rules will have on our family run rural economy.

I am a 35 year old cattle rancher and hay farmer with 292 acres of irrigated alfalfa ground in the Lower Blitzen-Voltage irrigation district. 250 of the irrigated acres my family and I farm was just recently purchased in our first large real estate venture. February 2023 was when we signed the paperwork and it has been my dream, come true, to own and operate my own cow/calf and hay production property. I have been involved in agriculture my whole life; off of Highway 78, in Princeton, Oregon is where I grew up, just 3 miles north of my current property on the Thompson Ranch, a century ranch which my grandmother and uncles still own and operate. Their 600 irrigated acres of water rights are in the Crane/Buchanan district now but they were formerly in the Windy Point district. In all my years of living in Princeton we never had water shortage issues.

I started Rockin N Industries, a fence construction business in my twenties. The whole purpose of starting this company was to make myself more financially competitive so I could purchase quality hay production ground in Princeton where I knew that I would have an abundance of quality water. I have worked very hard to grow my business to where I currently employ three people and we build not only within the Harney Basin and Harney County but extensively throughout Eastern Oregon and all across the state. Due to the nature of my business I am intimately aware of the landscape and our natural resources. Yes, there are acres in the Harney Basin with minimal water but Princeton is not one of those areas.

As time, chance and finances permitted, my family's dream property became available. We made the purchase for \$900,000. All savings went to the down payment and we are making our annual payments all while improving the property and making irrigation more efficient. In addition to the 250 irrigated, purchased acres, I lease 42 acres from Steve Helms on Anderson Valley Road. His property is in the Lower Blitzen-Voltage district as well. Under current proposals put forth by Oregon Water Resources by 2028 I would no longer be able to irrigate my 42 acres of lease ground or 125 acres of my recently purchased property because those acres are a junior water right and those are the first to get eradicated. How am I supposed to pay my mortgage? How am I supposed to make hay to feed my cattle? How am I supposed to provide for my family when the greatest asset I own has all the value stripped from it? The water rights.

My daughters' names are McKinlee, age 10 and Amorita, age 8. My sons' names are Abel, age 7 and Macklin, age 1. They attend elementary school in Crane. This year they are taking animals to the county fair and they are so excited. My wife's name is Katelyn. Not only does she occasionally sub within the Crane schools but she also volunteers her time coaching youth basketball. She is heavily involved within the community as an active member in the Cattlewomen's, Food Systems group, Farmer's Market and fairboard member. She also recently launched her own small business of selling Harney County born, raised & processed natural

beef by the cut. This has been a huge endeavor, as all small businesses are, but she provides this service to our local community and has many loyal customers that rely on her already. These are not nameless, faceless people being affected. They are hard working Oregonians who are the backbone of this state. If we were to lose our water rights the effect would ripple throughout our community and have a devastating impact. Simply put: without water we cannot make hay for our cows or for our neighbors cows to whom we sell surplus hay. Our neighbor now has to buy hay from someone else probably out of the county, economic impact. We cut our cow numbers because we cannot feed them, without cows numbers we reduce, lose, drop range leases, economic impact. Without cow numbers Kate's small business of selling beef to our local community dies, economic impact. Without cow numbers our kids no longer have animals to take to the county fair... I could keep going but I think you get the picture. Every drop of water we use is precious to us. It is our most valued resource. We ranchers are the stewards of the land and all its natural resources. Especially the water. The care I take with my land and managing this valuable resource not only benefits myself but the wildlife as well. I love to see the deer and antelope grazing on my property. Yes there are some bad apples in the barrel but they never stay in business very long.

Water Resources, I implore you to let us conservationist ranchers work together, form our water districts, establish strict, productive guidelines. Follow the guidelines and preserve our water while continuing, preserving, maintaining our way of life. What you are proposing will destroy this community. Let us work together and find a better way forward.

Respectfully,

Carl & Kate Neumann & Family

MEINZ Kelly A * WRD

From: Carolyn Latierra <a.biophilic@gmail.com>
Sent: Friday, August 1, 2025 3:05 PM
To: WRD_DL_rule-coordinator
Subject: Please Adopt Strong Rules to Stabilize Groundwater Levels in the Harney Basin

You don't often get email from a.biophilic@gmail.com. [Learn why this is important](#)

Dear Kelly Mainz,

Dear Oregon Water Resources Department,

I am writing about the rules the Oregon Water Resources Department (OWRD) recently proposed to address groundwater declines in the Harney Basin.

I support stabilizing groundwater levels in the Harney Basin, which would provide the basin with a more sustainable future and help prevent additional impacts to groundwater dependent ecosystems such as springs, streams, wetlands, and native vegetation. It would also reduce the number of existing domestic wells that would be dried up due to irrigation pumping.

I offer the following additional comments:

1. I place a high value on the springs, streams, and other groundwater dependent ecosystems in the Harney Basin, and all of the fish, wildlife, and plants that rely on these ecosystems.
2. These groundwater dependent ecosystems have already been significantly degraded from the over-pumping of groundwater. Please ensure that these systems are protected in the Division 512 rules for the Harney Basin.
3. I support the requirement in the Proposed Rules for water use measurement and reporting on all non-exempt groundwater rights in the basin.
4. OWRD should not adopt rules that would dry up additional existing domestic wells, especially when it has no viable program in place to help these residents who will lose their drinking water.
5. Please consider strengthening the Proposed Rules by adopting a tighter schedule for imposing the lower pumping amounts ("Permissible Total Withdrawals"). I encourage a shorter timeline than the proposed 30 years to achieve stable groundwater levels in light of the major declines that have already occurred, and the significant impacts to groundwater dependent ecosystems and domestic wells that this has already caused.

Thank you for your kind attention and consideration of my comments.

Sincerely,
Carolyn Latierra
3223 NE Knott st
Portland, OR 97212

MEINZ Kelly A * WRD

From: Wheelhouse RV, Floral and Gifts <wheelhousefloralandgifts@gmail.com>
Sent: Wednesday, August 13, 2025 4:02 PM
To: WRD_DL_rule-coordinator
Subject: Division 512 Harney Basin Program Rules

Some people who received this message don't often get email from wheelhousefloralandgifts@gmail.com. [Learn why this is important](#)

Dear Mr. Mainz,

My name is Cheryl Smith DBA Wheelhouse and I am a small business owner in Harney County that will be affected by the Division 512 rules. My business is an eclectic one. I have a full service Flower Shop which requires water to function, we also have RV Supplies and Repairs. Many of our Flower customers like the fact I utilize local growers and wildflowers whenever I can. RV's are often used by Farmer/Ranchers during Haying season to avoid long drives home after 12 to 15 hour shifts. My business relies strongly on the ranching and farming industry. We will be significantly affected by reductions in groundwater use that will result in fewer agricultural operations in Harney County and therefore fewer customers for our business. Cuts to economic output and property tax revenue will also affect our community and economy. These rules will affect our employees, our family, our friends, and our neighbors. The Oregon Water Resources Department never consulted small business owners that will be impacted by the rules and has not sufficiently considered ways to reduce economic impacts as it is required to do under ORS 183.333, ORS 183.336, and ORS 183.540. I know that some business owners have been involved with the recently wrapped up Community Based Water Planning, but this doesn't or shouldn't forgo following the aforementioned statutes.

These rules will have a significant adverse impact on small businesses. Our interests were not represented on the Rulemaking Advisory Committee. We request that the Oregon Water Resources Department convene a fiscal impact advisory committee to specifically advise on how to reduce the economic impacts to small businesses and follow the advice offered by the Committee. The proposed rules will have a detrimental impact on the public welfare, health and safety that have not been fully examined or quantified. Alternative approaches have not been fully explored or offered.

The economic analysis performed by EcoNorthwest states that Harney County's economy is reliant on agriculture and is also isolated from other economic opportunities. Today agriculture represents 22 percent of total economic output. The percent reduction in groundwater use, correlates strongly to a similar percent reduction in the value of agricultural production and total economic output and includes the following impacts:

- Today, agriculture supports about 1,020 local jobs and generates \$186 million in total economic activity each year.
- If the proposed rules are fully implemented, between 160-320 of those jobs could be lost and annual economic activity could shrink by \$22 - \$61 million (in 2024 dollars) at the end of 30 years.
- Jobs would be lost not only on farms and ranches, but also in businesses that supply goods and services to them (like equipment repair, feed suppliers and fuel providers).

- Even local shops, grocery stores, and restaurants could feel the impact as families spend less because of reduced employment and labor income.

Lower agricultural production means land is worth less for property tax purposes, especially land that loses access to irrigation water.

- Today, the affected land's assessed value across Harney County is worth about \$57 million.
- If the proposed rules are fully implemented, the land's assessed value could drop to \$45 million.
- That would mean \$146,000 less in yearly property tax revenue for Harney County--a 1.3 percent decrease at the end of 30 years.
- Local schools could lose the most (about \$66,000 less in yearly revenue), followed by the county's general fund (\$55,000) and hospitals (\$24,000).

This level of impact is unacceptable. The Department should focus regulatory action only on problem areas and use voluntary approaches and incentives in all other areas to voluntarily reduce groundwater use. This is a more sensible approach that would minimize economic impacts to agricultural operations, small businesses, and the broader community.

Signed,
Cheryl D Smith DBA Wheelhouse
Burns, Harney County, Oregon

MEINZ Kelly A * WRD

From: Cheryl Smith <oregoncher.cs@gmail.com>
Sent: Wednesday, August 13, 2025 2:29 PM
To: WRD_DL_rule-coordinator
Subject: Division 512 Harney Basin Program Rules

Some people who received this message don't often get email from oregoncher.cs@gmail.com. [Learn why this is important](#)

My name is Cheryl Smith

My email is: oregoncher.cs@gmail.com

Dear Mr. Mainz,

#1 I am a landowner in the Harney Basin and a domestic well user. I have spent the better part of the last 10 years participating in the Community Based Water Planning and sincerely hope that the Plan that is/has been completed will weigh heavily in any rulemaking decisions that will be made.

#2 I live in the area of one of the "cones of depression". Otherwise known as "Northeast-Crane". We had to transport water from Burns/Hines for 3 years for drinking and cooking. We bathed in some very stinky groundwater and knew we would have to deepen or locate a better source of groundwater for our domestic use. We couldn't grow a garden because the minerals burned the plants. We were able to construct a new well and went almost 400 feet and other than it testing high for sodium it is a good well and it doesn't stink. I can now grow a garden and I feel clean when I bathe.

X I have a well that supplies groundwater to my home for domestic purposes

X I have a well that supplies groundwater to livestock (chickens, cows, etc)

X I have a slough and 2 ponds on my property that are important to birds and wildlife that are partially fed by groundwater

X I value groundwater contributions to the environment (springs, sloughs, vegetation)

X I value fish and wildlife in the basin, including those that benefit from groundwater

X I use agriculture products that are produced with groundwater

#3-4 I think the Area and Sub-areas are fine. I would hope that maybe the sub-areas may need further divisions for rule applications

#5 The groundwater conditions where I live have changed some over the last 10 years. Luckily I have not had to put my pump any lower, but I have noticed a slight change in the water during August and September. More recently I am very concerned about the Hot Spring Resort and its consumption increases and how that will affect us. I live directly behind the hot springs with a strip of State land in between us. Will they have to start monitoring all of their water use or ?

#6 As the development of the resort continues I do expect to see changes to my water. Over 20 years of living and using water in this area I do see fluctuation increases almost annually. My Static level has not decreased significantly, but I do expect it will over the next 5 to 10 years of Resort development.

#7 I would like to be able to see groundwater levels be allowed to fluctuate between certain levels (+/- within a certain "band" of acceptable declines). I think the target of 2058 is extremely lenient and am

wondering if it should be less time allowed. I also wonder how this measuring will be done to determine the decline or increase?

#8 Assuming the allocations would have to decrease every 6 years I think the allocation to start may need to be higher like 3.5 acre feet.

#9 I don't quite understand 110% and when does this allocation change or will it?

#10 I support the memo and all the other allocations at least for a starting point.

#11 I Support the proposed reduction schedule.

#12 I support the adaptive management approach

#13 Does this flowmeter apply to domestic/stock wells? If so how can we afford it?

#14 Is "non-consumptive geothermal" refering to the hot springs resort? Are you all forgetting they use cold water well(s) also and have a lagoon for waste water of which that is consumptive...

#15 I think the impact will be totally financial and we are already struggling as a county. ie Property values

#16 The impacts on this basin are already being seen. Farms are drying up and not producing. Land values have declined and the cost of obtaing water has become prohibitive for alot of people.

#17 no comment

#18 Futuristically I am hopeful that I will be able to sell my land at a value that will sustain me through my decling years and that there will be water available for domestic/stock use as well as farming/ranching which is the lifeblood of our county.

#19 I would hope that the department can look at what they do from a human point of view. Wildlife is important as well as vegetation. Please don't turn this basin into a dust bowl!

Thank you for your time,
Cheryl Smith
Northeast-Crane landowner

MEINZ Kelly A * WRD

From: Chris Skeens <secure.skeens1800@gmail.com>
Sent: Saturday, August 9, 2025 7:56 PM
To: WRD_DL_rule-coordinator
Subject: Please Adopt Strong Rules to Stabilize Groundwater Levels in the Harney Basin

You don't often get email from secure.skeens1800@gmail.com. [Learn why this is important](#)

Dear Kelly Mainz,

Dear Oregon Water Resources Department,

I am writing about the rules the Oregon Water Resources Department (OWRD) recently proposed to address groundwater declines in the Harney Basin.

I support stabilizing groundwater levels in the Harney Basin, which would provide the basin with a more sustainable future and help prevent additional impacts to groundwater dependent ecosystems such as springs, streams, wetlands, and native vegetation. It would also reduce the number of existing domestic wells that would be dried up due to irrigation pumping.

I offer the following additional comments:

1. I place a high value on the springs, streams, and other groundwater dependent ecosystems in the Harney Basin, and all of the fish, wildlife, and plants that rely on these ecosystems.
2. These groundwater dependent ecosystems have already been significantly degraded from the over-pumping of groundwater. Please ensure that these systems are protected in the Division 512 rules for the Harney Basin.
3. I support the requirement in the Proposed Rules for water use measurement and reporting on all non-exempt groundwater rights in the basin.
4. OWRD should not adopt rules that would dry up additional existing domestic wells, especially when it has no viable program in place to help these residents who will lose their drinking water.
5. Please consider strengthening the Proposed Rules by adopting a tighter schedule for imposing the lower pumping amounts ("Permissible Total Withdrawals"). I encourage a shorter timeline than the proposed 30 years to achieve stable groundwater levels in light of the major declines that have already occurred, and the significant impacts to groundwater dependent ecosystems and domestic wells that this has already caused.

Thank you for your kind attention and consideration of my comments.

Sincerely,
Chris Skeens
817 SE SHARON AVENUE
Roseburg, OR 97470

July 23, 2025

**Kelly Mainz – Rulemaking Coordinator
Oregon Water Resources Department
725 Summer St. N.E. Suite A
Salem, OR 97301-1271**

Subject: Lower Blitzen-Voltage Subarea Comments on Proposed Division 512 Rules

Dear Mr. Mainz,

Please accept these comments on behalf of the below signed individuals. Many of these individuals live in the Blitzen-Voltage Subarea or support businesses within the Blitzen-Voltage Subarea. We collectively request that the Department follow its existing policies and make a greater effort to limit the economic impacts of proposed groundwater reductions in this area. Specifically, we make the following requests for the Division 512 rules:

- Include the Upper Blitzen area with the Lower Blitzen area (especially if Subarea boundaries may affect transfers).
- Designate the area that is primarily recharged from the Steens Mountain uplands and the Donner Und Blitzen river as a distinct groundwater reservoir and establish distinct groundwater management goals based on current groundwater conditions and existing policies of the state.
- Remove the Blitzen-Voltage Subarea from the Critical Groundwater Area designation or, if it is designated, set the permissible total withdrawal to estimated recharge levels.
- Include the definition of “reasonably stable” and “overdrawn” from OAR 690-008-0001 in the Division 512 rules and apply it in a management context.
- Prevent additional transfers into the Blitzen-Voltage Subarea from other Subareas because it is not the same source.
- Identify in rule that regulatory reductions will not be made until wells are determined to no longer be “reasonably stable” or until decline conditions in permits are met or exceeded.
- Encourage voluntary reductions in groundwater use through the development of a voluntary agreement in this Subarea. The groundwater users in this area expect to bring a Voluntary Agreement forward to the Commission by December 2025.
- Specify the process by which the Department will consider local knowledge when making a determination of what constitutes “representative” wells for analysis. Actively partner with groundwater users to monitor groundwater levels and groundwater use and rebuild credibility and trust in Department data and science.
- Actively partner with groundwater users and others to better understand aquifer characteristics, the flow of groundwater, groundwater level changes, and the change in spring discharge over time (setting a baseline for measuring change).

Representatives of the Lower Blitzen-Voltage Subarea engaged in good faith in the Division 512 rulemaking process. Most of the questions asked still have not received answers from the Department and many of the concerns or suggestions raised were never meaningfully addressed. The representatives of this Subarea feel that the Department consistently took an approach of

devising, presenting, and defending its position without meaningfully involving the public and impacted groundwater users. The Department has been selective in the information it presents and considers. Furthermore, the Department has not taken steps to minimize the fiscal impact on small businesses as required by ORS 183.330 and ORS 183.540. As written, the proposed rules will decimate our local economy, bankrupt small businesses, disrupt families, and destroy the social fabric and culture of our community.

For most of the rulemaking process Department was proposing no reductions in the Lower Blitzen-Voltage area. The Department changed its approach relatively late in the rulemaking process and is now requiring that the entire basin reach “durably stable” conditions (0 ft/yr of decline) within 30 years. The Department is currently proposing a 39% reduction from current estimated pumpage in the Lower Blitzen-Voltage area despite the fact that groundwater conditions meet the definition of “reasonably stable.” This level of reduction is not warranted for this Subarea based on existing policies and existing data.

Groundwater users were allowed by the Department to develop additional acres in this area under the current Division 512 rules with the full understanding that if the decline conditions reached 18 feet in the approved wells and substantial site-specific evidence showed that wells were not reasonably stable, that those wells would be subject to regulation. During the previous rulemaking process, Department leadership, including now Director Gall, and staff indicated that this area may actually be able to sustain additional development. For the past decade Department leadership and staff have indicated that there is not a problem in the Donner Und Blitzen area and have even highlighted the need for and benefit of additional data given that this part of the basin was relatively data sparse. The Department also consistently committed to partnership and collaboration through the Groundwater Study Advisory Committee process and the place-based integrated water planning process.

According to ORS 537.525 and ORS 536.220 the Department is required by law to protect existing water rights. ORS 536.525 clearly states a preference for voluntary joint action with groundwater users prior to relying on the police power of the state. We urge the Department to honor previous commitments and existing statutory requirements and first meaningfully pursue joint action with groundwater users in the Lower Blitzen-Voltage Subarea prior to pursuing punitive regulatory action. We are committed to maintaining our way of life and sustainably managing groundwater resources for future generations.

Groundwater levels in the Lower Blitzen-Voltage Subarea are reasonably stable per the definition in OAR 690-008-0001. The Department’s own data shows that declines throughout this area have been minimal. The Groundwater Level Trends analysis performed in 2024 show that the median overall decline is -2.9 ft and the median rate of decline is -0.3 ft/yr. Notably, these trends are far below the range of what is considered reasonably stable by the Department. Groundwater users have raised questions and concerns regarding the inclusion of some wells in this network that do not appear to track with the majority of wells and may not accurately represent conditions. Data recently collected by groundwater users in the area are showing that groundwater levels in portions of the basin are stable depending on the timeframe used for analysis and some wells have even risen above reference levels set by the Department. No available data show that this area has met

the criteria for designation as a critical groundwater area. There are no wells that have met the Department's threshold for declining excessively or excessively declined.

Groundwater users have been responsibly using water within the terms and conditions of their permits for decades. To our knowledge, no domestic wells in this Subarea have lost access to groundwater or have been forced to deepen due to declining groundwater levels. No concerns have been publicly raised by domestic well users or stockwater users in this Subarea. We share an interest and concern in groundwater fed ecosystems and are committed to partnering with the Department and others to set a baseline for understanding and measuring impacts to springs, improving our understanding of the complex hydrogeology in this region as it relates to spring discharge, and pursuing voluntary measures to protect ecologically significant springs. Notably, it is the Department's own actions to authorize a transfer out of Weaver Springs and into the Lower Blitzen-Voltage Subarea that may have the most significant localized impact on springs in this area. Unless downstream springs are protected with a senior water right, we do not believe that the Department has legal authority to regulate in favor of unprotected springs or native vegetation.

Groundwater in the Lower Blitzen-Voltage area is distinct from groundwater in the Silvies area, Silver Creek area, Weaver Springs area, and Northeast-Crane area. Groundwater in much of the Lower Blitzen-Voltage Subarea is modern water and is recharged through precipitation in the uplands and streamflow infiltration in the lowlands. The groundwater chemistry and quality are particular to this recharge area. The geology and subsurface are distinct from other parts of the basin. Although the Lower Blitzen-Voltage and Northeast-Crane Subareas may drain or discharge to the same place, we question whether the Lower Blitzen-Voltage Subarea provides significant recharge to the Northeast-Crane area due to the existing hydraulic gradient. We believe that there is sufficient information to demonstrate that these areas are hydrologically distinct and should be treated as different management areas.

The Department previously made a determination in the Lower Blitzen-Voltage area that groundwater is available and that groundwater use was in the public interest. The groundwater study clearly shows that groundwater is not overdrawn and is still available by the Department's own definition, even if all water rights were fully developed. We urge the Department and Commission to adhere to existing statutes and rules rather than pursue unprecedented groundwater reductions through regulations that lack a defensible legal and technical basis.

The groundwater users in this area are primarily family owned and operated businesses that have a strong desire to stay in business and pass our operations onto our children and grandchildren. We believe we can sustainably manage groundwater and voluntarily reduce groundwater use without putting any farms out of business in this area. Our recommendations will ensure that groundwater management in this area is consistent with groundwater laws and policies, protects groundwater for current and future uses, builds a culture of partnership and collaboration with the state, reduces litigation and implementation costs of the Department, and minimizes economic impacts to Harney County. We stand ready to work with the Department to responsibly and sustainably manage groundwater in the Lower Blitzen-Voltage Subarea.

First and Last Name	Representing/Affiliation
Will Hall	Hale Ranches
Doug Dunkel	State of Oregon
Erin [Signature]	Zwerfel Custom Farming
Paul Beeler	Martin Dairy
Maurice [Signature]	Pioneer Vet
Ryan Johnson	Coastwide Leasing Mix
Leanne Christensen	TCOA Farm Store
Debra [Signature]	Boys Implement
Brian [Signature]	T. Howard R. Farmers Co-op
[Signature]	Don & Arvill Trucking Inc.
[Signature]	Deland
[Signature]	Tim Neahring Boaz ag services
Donald J. Stein	TCOA TruShop
[Signature]	Northwest Veterinary Reproductive Services
[Signature]	Rose Valley Creamery

Signature Page

Christina Keerins 5/7

Signature Page

MEINZ Kelly A * WRD

From: Christina Keerins <keerins@rural-roots-ranch.com>
Sent: Wednesday, August 13, 2025 2:30 PM
To: MEINZ Kelly A * WRD
Subject: Re: Proposed Harney Basin Groundwater Policies-Written Comments -Keerins
Attachments: 2025-08-13 Comments on Proposed Division 512 Rules.pdf

Please see attached Lower Blitzen-Voltage Subarea Comments on Proposed Division 512 Rules.

Thank you,
Erick Keerins

On Thu, Aug 7, 2025 at 8:30 AM MEINZ Kelly A * WRD <Kelly.A.MEINZ@water.oregon.gov> wrote:

Hi Erick,

Your comments have been received and saved.

Take care,

[Kelly Meinz, EIT \(he/him\)](#)

Water Policy Analyst

725 Summer St NE Suite A, Salem OR 97301

Phone: 971-718-7087 | Email: kelly.a.meinz@water.oregon.gov



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Please Note: under Oregon law, messages to and from this e-mail address may be made available to the public

From: Christina Keerins <keerins@rural-roots-ranch.com>
Sent: Wednesday, August 6, 2025 2:04 PM
To: WRD_DL_rule-coordinator <WRD_DL_rule-coordinator@water.oregon.gov>
Subject: Proposed Harney Basin Groundwater Policies-Written Comments -Keerins

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Mr. Mainz,

Please see attached document regarding Harney Basin Groundwater Policies.

Respectfully,

Erick Keerins

Rural Roots Ranch

www.rural-roots-ranch.com

--

Christy Keerins
Rural Roots Ranch
www.rural-roots-ranch.com

HARTT Laura A * WRD

From: Christine Brautigam <christinebrautigam@icloud.com>
Sent: Saturday, August 9, 2025 10:04 PM
To: WRD_DL_rule-coordinator
Subject: Please Adopt Strong Rules to Stabilize Groundwater Levels in the Harney Basin

Some people who received this message don't often get email from christinebrautigam@icloud.com. [Learn why this is important](#)

Dear Kelly Mainz,

Dear Oregon Water Resources Department,

I am writing about the rules the Oregon Water Resources Department (OWRD) recently proposed to address groundwater declines in the Harney Basin.

I support stabilizing groundwater levels in the Harney Basin, which would provide the basin with a more sustainable future and help prevent additional impacts to groundwater dependent ecosystems such as springs, streams, wetlands, and native vegetation. It would also reduce the number of existing domestic wells that would be dried up due to irrigation pumping.

I offer the following additional comments:

1. I place a high value on the springs, streams, and other groundwater dependent ecosystems in the Harney Basin, and all of the fish, wildlife, and plants that rely on these ecosystems.
2. These groundwater dependent ecosystems have already been significantly degraded from the over-pumping of groundwater. Please ensure that these systems are protected in the Division 512 rules for the Harney Basin.
3. I support the requirement in the Proposed Rules for water use measurement and reporting on all non-exempt groundwater rights in the basin.
4. OWRD should not adopt rules that would dry up additional existing domestic wells, especially when it has no viable program in place to help these residents who will lose their drinking water.
5. Please consider strengthening the Proposed Rules by adopting a tighter schedule for imposing the lower pumping amounts ("Permissible Total Withdrawals"). I encourage a shorter timeline than the proposed 30 years to achieve stable groundwater levels in light of the major declines that have already occurred, and the significant impacts to groundwater dependent ecosystems and domestic wells that this has already caused.

Thank you for your kind attention and consideration of my comments.

Sincerely,
Christine Brautigam
1467 Siskiyou Blvd #337
Ashland, OR 97520

MEINZ Kelly A * WRD

From: Tod Gahley <tgahley@cityofburnsor.gov>
Sent: Thursday, July 31, 2025 2:31 PM
To: WRD_DL_rule-coordinator
Subject: OAR 690, Divisions 512
Attachments: OWRD letter.docx

Please see the attached letter.

Thank you,
Tod Gahley
Burns City Councilor

To the decision makers of the Oregon Water Resources Department:

The OWRD is planning to limit the domestic water usage in the cities of Burns and Hines, two small communities that house 60 percent of the sparse population of the 9th geographically largest county in the United States, without properly researching the propriety of the decision or the economic impact to our community. I recognize that the OWRD has genuine concerns with water table levels in much of Harney County. However, limiting water usage within the cities of Burns and Hines makes no sense. Please consider these facts about the decision to limit water usage within our cities:

- The two cities' wells use an obviously different water table than those of the basin, and testing on them (which was apparently never done) will show that water levels have not declined at all, unlike the water in the wells of the basin, which has been the root cause of your concern.
- Even if our cities' water supplies were affected by this groundwater drought, these wells supply domestic water to 60 percent of the citizens of our county, and yet consume a tiny percentage of the overall water usage in the county.
- Given the relatively small amount of water that is used domestically as compared to irrigation water and the comparative importance of domestic water usage, I don't believe that domestic water usage should be part of your decision.
- Economic growth in our cities has been hampered for many years due to a housing shortage, not an "affordable" housing shortage, but a true lack of physical homes for people to live in (rent or own), that we are currently on the very cusp of resolving. Among other smaller plans, ground has just been broken on the Miller Springs subdivision, which is planned to add as many as 600 homes to the city of Burns, which is a huge potential for growth in a city of approximately 3000 homes. Limiting our water usage could potentially kill that project and our hopes for economic growth.
- The economic impact of this decision to our cities is so potentially catastrophic and poorly considered that we are willing and feel confident that we can resolve it through litigation, but we would prefer to not spend our limited resources if the OWRD can listen to our concerns and make the correct decision regarding the domestic water usage of our two cities.

Thank you for taking time to read my letter. I hope you consider the very valid points that I have tried to convey as you make your decision about the domestic water usage within our two cities.

Sincerely,

Tod Gahley

Burns City Councilor and small business owner

HARTT Laura A * WRD

From: jerwin@cityofburnsor.gov
Sent: Tuesday, August 12, 2025 1:27 PM
To: WRD_DL_rule-coordinator
Cc: 'Ty Richardson'; 'Julian Cohen'; 'Bob Long'; 'Ian Godwin'; 'Nicholas Green'
Subject: Written Testimony of the City of Burns in Response to Proposed OWRD Division 512 Rulemaking
Attachments: Written Response Proposed OWRD Division 512 Rulemaking.pdf

Please find attached the above referenced document for the City of Burns.

Respectfully,

Judy Erwin

City Manager
City of Burns Oregon



Subject: Written Testimony of the City of Burns in Response to Proposed OWRD Division 512 Rulemaking

Submitted to: Oregon Water Resources Department (OWRD)

Date: August 12, 2025

Introduction

The City of Burns appreciates the opportunity to submit this testimony regarding the proposed amendments to Division 512 governing groundwater management in the Harney Basin. We have participated fully in the public process, supporting the state's scientific approach and desire to address the documented groundwater declines, while advocating for equitable, effective, and practical regulation. However, as currently proposed, the Division 512 rules—particularly the provisions pertaining to municipal water rights—present significant concerns that warrant further revision. This testimony is supported by a technical review conducted by our consultants, Catalyst Public Policy Advisors and CwM H2O, as well as the League of Oregon Cities. It incorporates both technical data and policy recommendations for consideration.

I. Support for Groundwater Conservation and Scientific Basis

The City of Burns recognizes the findings of the USGS Harney Basin groundwater study (2016–2022), which demonstrate significant groundwater declines, excessive pumping relative to recharge, and the presence of critical areas in the Basin. We commend OWRD for grounding the rulemaking in peer-reviewed science and for undertaking a transparent, multi-year public engagement process.

II. Specific Concerns with Proposed Cap on Municipal Water Rights

Municipal water use represents a small fraction of total Harney Basin groundwater withdrawals, while serving the majority of county residents. Yet the proposed cap would impose disproportionately severe restrictions on the cities of Burns and Hines, which together account for more than half of the county's population but only a tiny share of its water use. The policy effectively penalizes cities that have succeeded in reducing consumption and leaves little room for planned or unanticipated growth—contrary to state land use planning goals. We urge OWRD to adopt a proportionate curtailment framework allocating reductions chiefly to sectors and areas responsible for ongoing overdraft. This approach ensures the “punishment fits the crime” and avoids unnecessary hardship to municipalities meeting community needs and planning for sustainable futures.

A. Disproportionate Impact on Municipal Water Users

The proposed rule would limit municipal water rights to 110% of the City's highest single-year use in the preceding five years. This approach, although universally applied, would have **disproportionately severe impacts on municipal users**, especially the City of Burns. According to CwM H2O's analysis (see attached Exhibit A):

- Municipal water rights account for just 0.68% of all water rights in the Harney Basin, and only 2% of all groundwater rights.
- Under the proposed rule, the City of Burns's authorized groundwater withdrawals would be reduced by approximately 82%, from 2,476 million gallons (MG) annually to 449 MG. In contrast, agricultural water users would see an average rate reduction of just 17%.
- The proposed “haircut” is particularly inequitable because it targets municipalities, such as Burns, that have proactively implemented conservation measures, lowering their baseline water use and thus limiting future flexibility for growth.

B. Lack of Relevant Hydrological Justification

The **location of Burns and other municipalities** is not in the areas of the Basin expected to see critical groundwater-level declines. Technical studies—including recent USGS models—show that the major municipalities, including Burns, are situated in regions where projected drawdowns remain modest (about 10 ft. over the next 75 years if use patterns remain unchanged). More significantly, most of the severe groundwater declines are associated with water rights junior to the City's rights and are geographically distant from municipal centers, indicating that curtailment of municipal pumping will have little benefit for overall basin stability.

C. Policy Contradictions and Economic Implications

- **Conflict with State Land Use Policies:** State law expects municipalities to plan for, and accommodate, urban growth within their boundaries. The Division 512 cap would undermine local and state policy mandates designed to concentrate growth within urban growth boundaries by making it impossible for cities to guarantee water to new housing, industry, or economic development projects. Specifically, Goal 14 of Oregon's Statewide Land Use Planning Goals: Urbanization. Goal 14 requires all cities to establish and maintain an Urban Growth Boundary (UGB) that includes enough land for the next 20 years of housing, employment, public facilities, and related needs. The goal mandates that urban growth (including new housing, industry, and other development) be concentrated within these boundaries, supporting both urban development and the conservation of surrounding farm and forest lands. The underlying policy expectation of Goal 14 is that municipalities will be able to provide the necessary infrastructure—most critically, municipal water supply—for current and anticipated future growth within their UGBs. Limiting cities like Burns to 110% of their recent historic water use, regardless of actual or projected growth needs, can directly contradict this policy directive. The result is that Burns may have insufficient water rights to serve new housing, businesses, and industrial expansion planned (and often required) under state and local comprehensive plans. By strictly capping municipal water use, the proposed OWRD rule undermines cities' statutory and planning obligations to provide land and services for anticipated urban growth, and is inconsistent with the requirements set out in Goal 14 and associated administrative regulations
- **Regulatory Burden:** Municipalities like Burns already coordinate with numerous agencies for infrastructure development. Additional, onerous reporting and cap-based curtailment increase regulatory complexity without clear benefit. If anything, the City of Burns is being asked to disproportionately sacrifice its water rights in favor of agricultural users who are having a far greater negative impact on groundwater availability.
- **Undermining Conservation:** Cities that invest in conservation, like Burns—with more than \$2 million invested in water infrastructure conservation measures planned for 2026 and 2027—are inadvertently penalized by having their future cap based on lower, post-conservation usage levels ("double whammy" effect). Cities that proactively conserve are left with a lower baseline—and thus suffer greater restriction on future use and growth. This rigid cap will disincentivize conservation measures and punish the City of Burns for voluntarily reducing its water consumption by restricting its water use to the new, lower levels it self-imposed through its conservation efforts.

D. Legal Considerations

Oregon law and precedent support the unique status of municipal water rights, both as to planning for growth and maintaining seniority/protection from forfeiture due to non-use for future needs. The proposed cap on municipal water rights potentially conflicts with foundational

elements of Western water law, particularly the doctrine of prior appropriation, which safeguards senior rights, such as those held by the City of Burns. Municipal water rights are uniquely protected under Oregon law, as they are exempt from forfeiture due to non-use if reserved for future community needs, allowing for prudent long-term planning. Further, the proposed cap's restrictive nature undermines statutory provisions that provide municipalities with flexibility to adapt water rights to evolving demand, including annexations or expansions. Legal precedents support the protection of municipal rights to ensure public welfare and planned urban growth. Implementing a rigid utilization cap not only threatens the economic and social development of the City but risks legal challenges due to potential infringements on established water rights and statutory exemptions.

III. Technical Equity and Effectiveness Issues

A. Water Rights Priority and Volume Distribution

- The City of Burns's water rights predate 48% of all water rights in the Basin and 58% of groundwater rights; in terms of volume, City rights are senior to 36% of all rights and 66% of groundwater rights.
- Agricultural irrigation alone represents over 96% of basin groundwater use, while municipalities represent less than 2%.
- Addressing groundwater declines equitably necessitates revisiting how curtailment burdens are allocated between sectors, reflecting their share of both historic and projected groundwater overdraft.

B. Ineffective Solution for Basin-Wide Declines

- Limiting municipal withdrawals, which are already a minor share of total use, will do little to resolve the main causes of overdraft, which are rooted in irrigation pumping far larger in scale and mostly in other areas.

IV. Recommendations

1. **Exempt municipal water rights from Division 512.** Division 512's regulatory tools on sectors and areas responsible for documented groundwater declines—namely, high-volume, for-profit junior irrigation users in affected sub-basins. Municipal water rights are essential to plan for and serve long-term community growth, consistent with Oregon's land use planning, statutory, and legal obligations. We based this recommendation on the following findings:

- a. Municipal Water Rights Represent an Insignificant Share of Total Groundwater Use**
 - i. Municipal water rights account for just 0.68% of all water rights in the Harney Basin and 2% of all groundwater rights. In contrast, agricultural uses make up over 96% of groundwater rights and are responsible for the overwhelming majority of basin-wide overdraft.
 - ii. Technical modeling confirms that curtailing municipal pumping would have a negligible impact on overall aquifer conditions, while restricting municipal access threatens community water supply and future economic development (see Exhibit A).
 - b. Municipal Water Rights Are Distinct under Western Water Law**
 - i. Western water law, including Oregon's, recognizes special protections and flexibilities for municipal water rights. Statutes and case law provide for planning and holding water for future population growth, and exempt municipal rights from certain "use it or lose it" provisions that apply to other users.
 - ii. Forcing municipalities to forfeit long-held rights or capping them strictly based on recent historic use directly contradicts these long-standing principles, potentially exposing OWRD to legal challenge.
 - iii. Unlike for-profit agricultural producers, municipalities provide a public service operated for the public benefit, which requires flexibility in long-range planning that the proposed rule could undermine.
 - c. Conflicts with State Land Use Policy and Prior Appropriation Doctrine**
 - i. Oregon's Statewide Land Use Planning Goals, particularly Goal 14 (Urbanization), requires cities to reserve land and ensure infrastructure—including water supply—for 20 years of projected growth within urban growth boundaries. Strict Division 512 caps would prevent cities from fulfilling this obligation, directly conflicting with state policy.
 - ii. The doctrine of prior appropriation requires that senior water rights (such as those held by the City of Burns) be honored. Uniform caps that do not account for priority date or municipal need undermine legal property rights that are the bedrock of Oregon's water allocation framework.
 - d. Incentivizing Conservation Without Penalty**
 - i. Municipalities like Burns have proactively invested in water infrastructure and conservation. Penalizing these actions by ratcheting down allowable use based on lower post-conservation baselines creates a perverse disincentive and punishes responsible resource management.
- 2. Proportionate Curtailment. We recommend that any future curtailments be proportionately allocated by sector, based on each group's contribution to groundwater use and documented overdraft. Reductions should focus first on regions and user groups most responsible for ongoing declines, rather than unduly limiting a municipal sector that both serves the majority of the population and is not the driver of the underlying problem.**

- a. Nearly 58% of Harney County's residents live in incorporated cities—Burns and Hines—which together account for about 4,310 people out of the county's total population of 7,440. The vast majority of these residents depend on municipal water supplies; yet, municipal water rights constitute only a small fraction of overall groundwater use in the basin.
- b. It is neither reasonable nor equitable to impose the greatest restrictions on the majority of the population when municipal use is a minor contributor to the county's water overdraft.
- c. Any required curtailments should be allocated in direct proportion to each sector's share of total and historic groundwater use, with priority given to reducing allocations from those areas and user groups responsible for the most significant declines. In other words, reductions should be focused where groundwater losses are greatest and among those who have contributed most to the overdraft, ensuring that essential municipal growth and community needs are not unduly constrained for a problem caused primarily by other sectors.

V. Conclusion

The City of Burns remains committed to partnering with OWRD in seeking balanced, science-driven solutions to groundwater sustainability. We urge OWRD to reconsider the proposed municipal water use cap and instead adopt a more nuanced, equitable framework that supports conservation, economic development, and the unique legal and policy context of municipal water law.

We invite further discussion and offer to work with OWRD staff to develop workable rules that both sustain basin resources and meet the long-term needs of all Basin communities.

Respectfully Submitted,



City of Burns

Judy Erwin, City Manager

cc: Nick Green, Catalyst Public Policy Advisors

cc: Bob Long, RG, CWRE, CwM H2O, LLC

Cc: Michael Martin, League of Oregon Cities



EXHIBIT A

August 11, 2025

Project No. 2517001

Nick Green
Catalyst Public Policy Advisors, LLC

Cc: Judy Erwin, *City Manager*
City of Burns, Oregon

REVIEW OF HARNEY BASIN WATER RIGHTS IN SUPPORT OF PROTEST OF PROPOSED DIVISION 512 RULE CHANGES

Dear Mr. Green,

CwM-H2O, LLC (CwM) presents this review of the proposed changes to the Oregon Water Resources Department's (OWRD) Division 512 rules affecting municipal water rights in the Harney Basin in support of the City of Burns' (City) right to maintain its certified water rights. The proposed Division 512 rules may cut up to 82% of the City's municipal water rights; this cut is not supported by the hydrogeologic conditions in the Basin. This technical memorandum illustrates that the proposed municipal water rights cuts will not have a measurable beneficial effect on problematic groundwater levels miles away and represent an unfair bias against public non-profit water use.

In its approach, CwM focused on four main criteria:

1. Distribution of water right uses in the Harney Basin. This comparison illustrates the very small percentage of municipal water rights available for public non-profit use.
2. Priority dates of water rights in the Harney Basin. The City maintains significant seniority over many groundwater rights in the Basin and should not be curtailed until junior water users are curtailed or regulated off.
3. Locations of major groundwater declines. The City is not in an area of significant groundwater declines and curtailment of the City's water rights would not significantly improve groundwater conditions in over pumped areas.
4. Relative impacts of proposed changes to different types of water users. The proposed curtailment of up to 82% of the City's certificated water rights is arbitrary and unfair, the cut is approximately four times greater than the average proposed curtailment in the Basin.

In the data reviewed and graphics presented, CwM outlines clearly how the proposed changes disproportionately affect municipal water users when compared to other water users in the Basin.

Data

The data assessed in this report is from the OWRD's Water Rights Information System (WRIS) shapefile, which was downloaded from the OWRD website in February 2025. Individual water rights

and rates were identified using both the place of use (POU) and point of diversion/appropriation (POD) shapefiles included in this data package.

Distribution of Harney Basin Water Right Uses

In the Harney Basin, there are a total of 2,565 cubic feet per second (cfs) of water rights. These are a combination of surface water(65%) and groundwater (35%) rights designated for a variety of uses. 70.23% of these water rights by volume are designated for agricultural uses including Livestock and Primary and Supplemental Irrigation. 26.28% of the water rights in the Basin are designated for Wildlife and Instream uses Other non-municipal uses including domestic, commercial, industrial, and geothermal account for 2.81% of the total authorized rate. Finally, municipal water rights account for 0.68% or 17.54 cfs of the total water rights in the Harney Basin.

In the Harney Basin groundwater rights total 888.6 cfs during the irrigation season. Basin. Of these groundwater rights, approximately 96% by authorized rate are designated for agricultural uses. Other non-municipal groundwater uses total 2%. Municipal groundwater rights make up 2% or 17.54 cfs of the total groundwater rights in the Harney Basin. Figure 1 – Use Distribution of Harney Basin Water Rights demonstrates the minor share of water reserved for public municipal use in the Basin’s distribution of groundwater rights.

Priority Dates of Harney Basin Water Rights

The proposed changes to the Division 512 rules do not appear to appropriately consider water right priority dates. The Harney Basin has water rights ranging in priority dates from the mid-1800s through 2017. The City of Burns possesses three groundwater certificates with priority dates of June 1, 1959, October 9, 1974, and October 16, 1978. The City’s water rights can be compared to other water rights in the Basin in two ways:

1. How many water rights are older and younger than the City’s water rights?
2. How many authorized cfs are older and younger than the City’s water rights?

CwM evaluated these questions by comparing the City’s water rights to all water rights in the Basin and to just groundwater rights. The results of this analysis are presented in Table 1 and Figures 2a – Priority Dates Junior and Senior to 10/16/1978, b – Harney Basin Water Right Priority Date Distribution, and c – Harney Basin Water Right Rate Distribution. The 907.1 cfs of water rights junior to the City’s water rights should be curtailed prior to limiting the City’s water use.

Table 1 – Harney Basin Water Right Priority Dates							
All Water Rights				Groundwater Rights			
Older than 10/16/1978		Younger than 10/16/1978		Older than 10/16/1978		Younger than 10/16/1978	
# of WRs	1,171 ^{1,2}	# of WRs	1,063	# of WRs	266 ¹	# of WRs	372
CFS	1,639.7 ²	CFS	907.1	CFS	302.6	CFS	582.2

1. Does not include the City of Burns’ two other water rights with senior priority dates.
2. 789 CFS of surface water rights were granted before the year 1900.

Locations of Major Groundwater Declines

The proposed rule changes are informed primarily by groundwater studies conducted by the United States Geological Survey (USGS) and OWRD between 2016 and 2022. These studies cite significant groundwater level declines in some areas of the Basin as the motivation for enacting these changes. CwM explored whether any municipalities were located in or near areas experiencing the most extreme groundwater declines. Gingerich et al (2024) developed a groundwater model for the Harney Basin that aims to predict how groundwater levels will continue to decline over the next 75 years if water use isn't reduced. Figure 3a – Projected Winter Water Level Declines 1998-2100 in Model Layer 1 shows that the Basin's major municipalities, including the City of Burns, are located in areas that are not expected to experience significant groundwater declines (approximately 10 ft of drawdown expected over the next 75 years without changing usage patterns). Additionally, in Figure 3b – Projected Winter Water Level Declines 1998-2100 in Model Layer 1 vs. Water Right Priority Dates, CwM mapped water right PODs on top of the modeled groundwater declines. Based on this map, it is clear that water users with water rights junior to the City of Burns are responsible for the vast majority of the modeled groundwater declines over the next 75 years. In addition to being unfair, limiting municipal water rights as currently proposed would not significantly improve the observed Basin-wide drawdown trends.

Disproportionate Curtailment of Municipal Water Rights

The proposed changes will impact different types of water users differently. Division 512, as currently written, limits Primary and Supplementary Irrigation uses to 2.5 acre-feet per acre of land. In order to assess how this would impact each irrigation right's authorized appropriation rate, CwM considered each irrigation water right's listed duty (in acre-feet) compared to the new limit of 2.5 acre-feet per acre. Each water right's rate was proportionally decreased by the difference between these two duties. Overall, this resulted in an average decrease in authorized rate of 17% for all irrigation rights, decreasing allowed annual appropriations from 200,000 million gallons (MG) per year to 167,000 MG per year.

Municipal water rights are set to be disproportionately affected by this rule. The City of Burns is currently authorized by its groundwater certificates to pump 2,476 MG of water each year. However, the proposed rules would limit it to 449 MG annually. This represents a decrease of its authorized groundwater appropriation of 82%. Figure 4 – Effects of Proposed Rule Changes on Irrigation and Municipal Water Rights illustrates the inequity of the rate "haircuts" that would result from the implementation of the proposed rule changes.

Summary

The proposed changes to the Division 512 rules will have significant and disproportionate effects on municipal water users. As currently written, the proposed rule changes unfairly limit the water rights of municipalities by proposing to limit them to 110% of the volume of their largest water year between 2020 and 2024. For the City of Burns, this would result in a "haircut" of approximately 82% of their water rights certificates, while agricultural water users would see an average rate cut of only 17%. In addition, the following should be considered:

1. Municipal water rights represent just 0.68% of the total volume of all of water rights in the Harney Basin and just 2% of all groundwater rights. These rights should be preserved for public non-profit use.
2. Areas most impacted by groundwater decline are dominated by water rights with priority dates junior to the City's water rights. The City of Burns' water rights are older than 48% of all water rights and 58% of all groundwater rights in the Harney Basin). This means that the City's water rights are senior to 36% of the total volume of water rights and 66% of the total volume of groundwater rights. Junior groundwater users must be curtailed before the municipal water rights are curtailed.
3. The areas of extreme aquifer drawdown in the Harney Basin are geographically far from the City of Burns and other municipalities. Adjusting municipal rates will not have a significant impact on alleviating groundwater declines in these distant areas of the Basin.

Overall, the proposed rule changes that arbitrarily curtail public non-profit municipal water rights represent an unfair and ineffective solution to a problem caused in large part by junior agricultural water users. The rules should reflect junior non-municipal water users' share of the problem more proportionately.

Please let us know if you have any questions about the content of this memo.

Sincerely,

CwM H2O, L.L.C.



Robert Long, *RG, LHG, CWRE*
Principal Consultant

Figures

Figure 1 – Use Distribution of Harney Basin Water Rights

Figure 2a – Priority Dates Junior and Senior to 10/16/1978

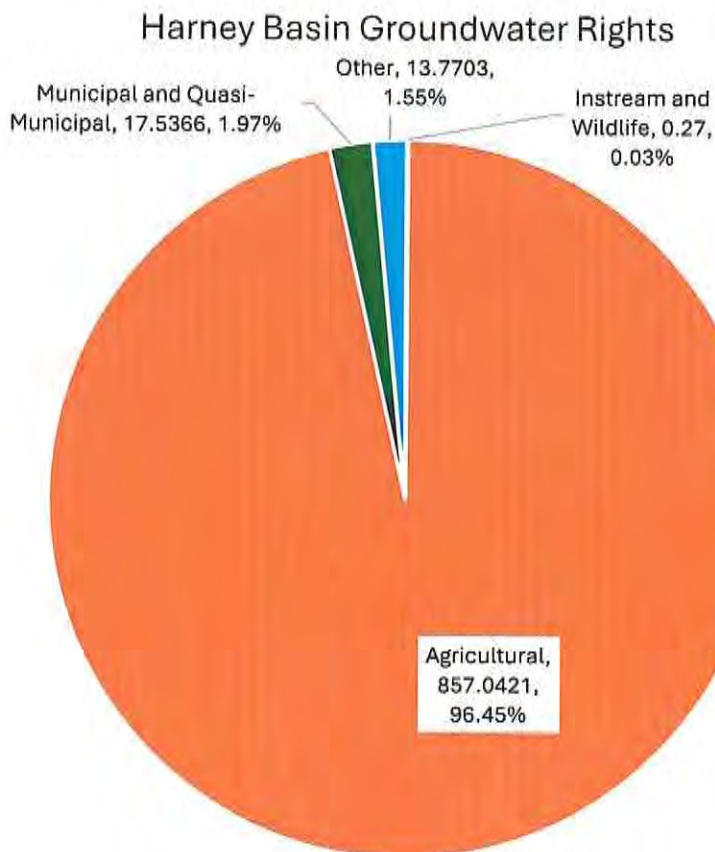
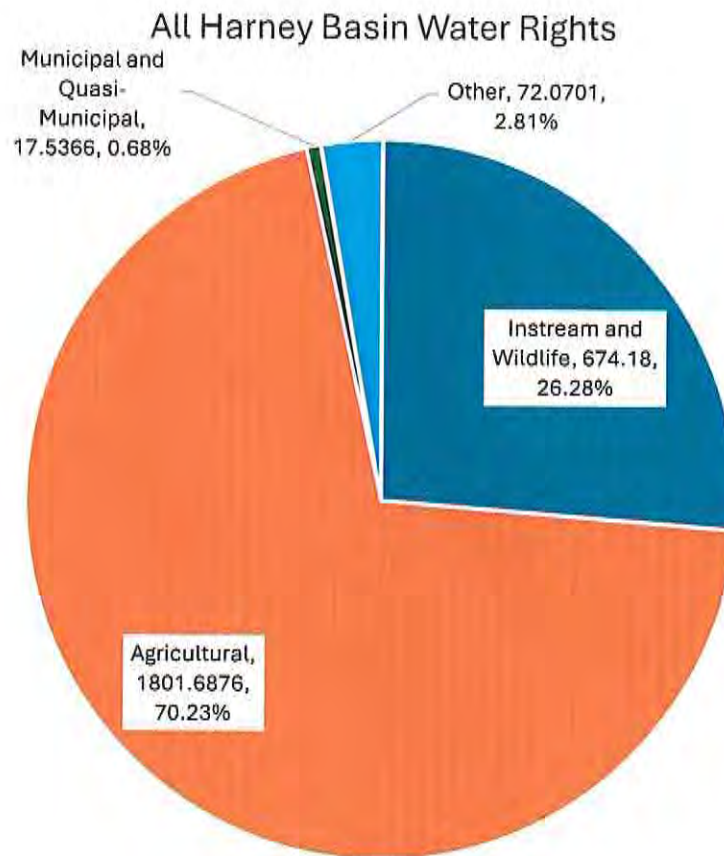
Figure 2b – Harney Basin Water Right Priority Date Distribution

Figure 2c – Harney Basin Water Right Rate Distribution

Figure 3a – Projected Winter Water Level Declines 1998-2100 in Model Layer 1

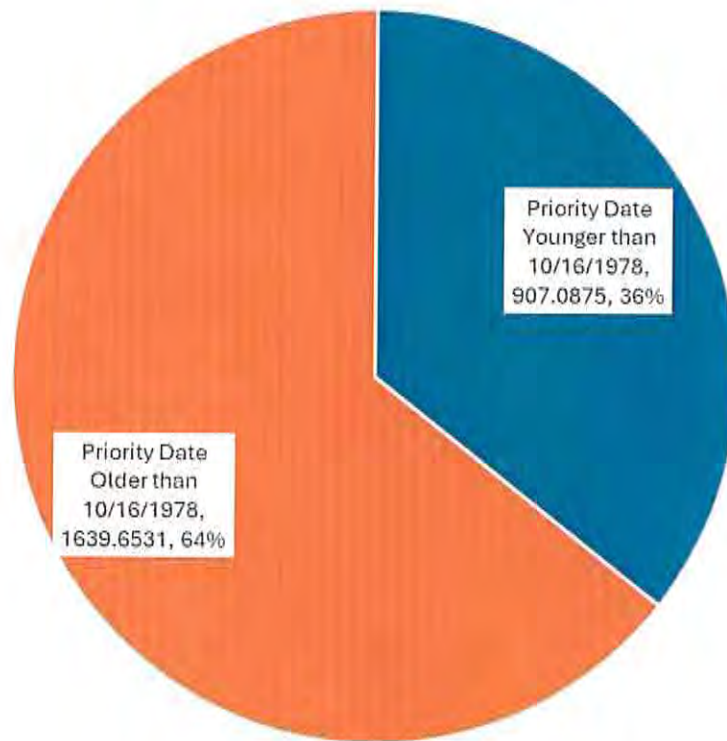
Figure 3b – Projected Winter Water Level Declines 1998-2100 in Model Layer 1 vs. Water Right Priority Dates

Figure 4 – Effects of Proposed Rule Changes on Irrigation and Municipal Water Rights

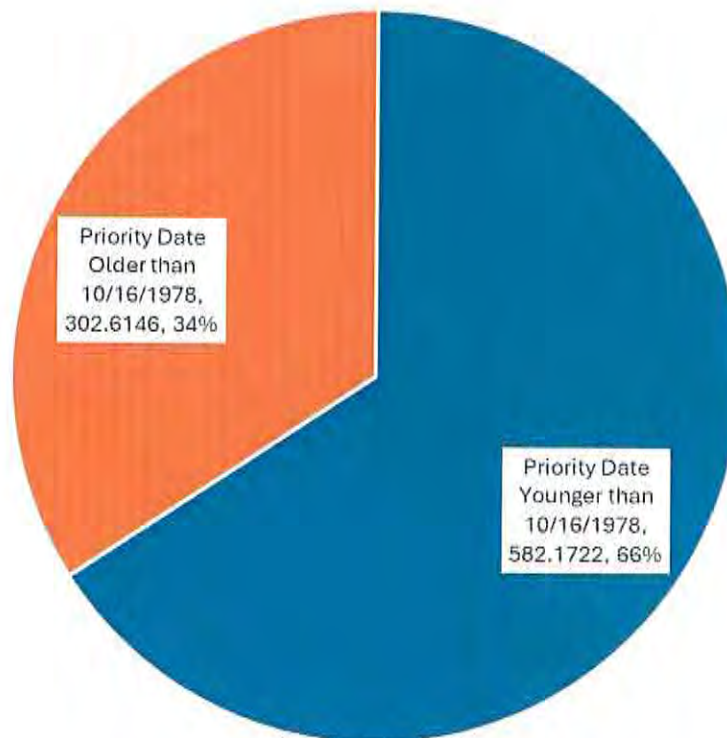


Values in CFS

Harney Basin Water Rights

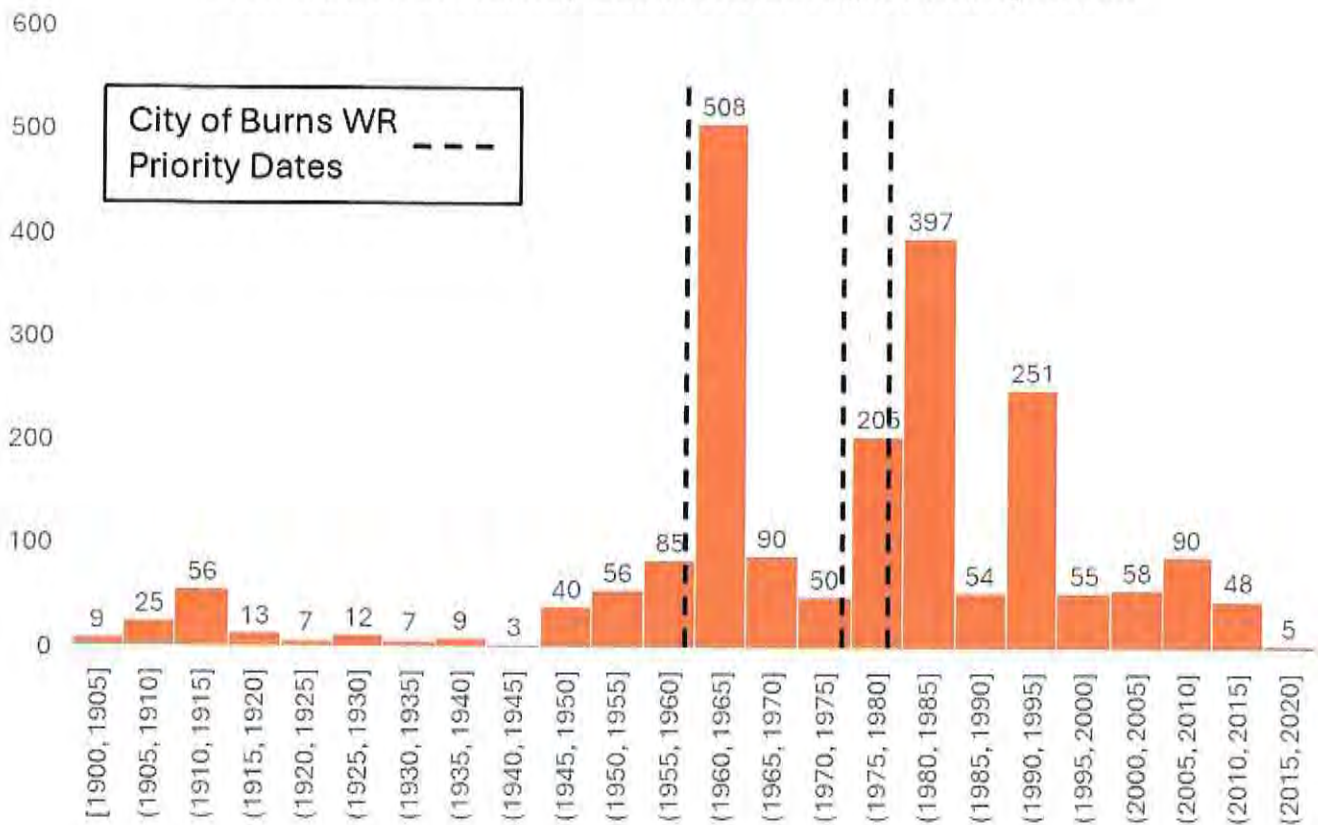


Harney Basin Groundwater Rights

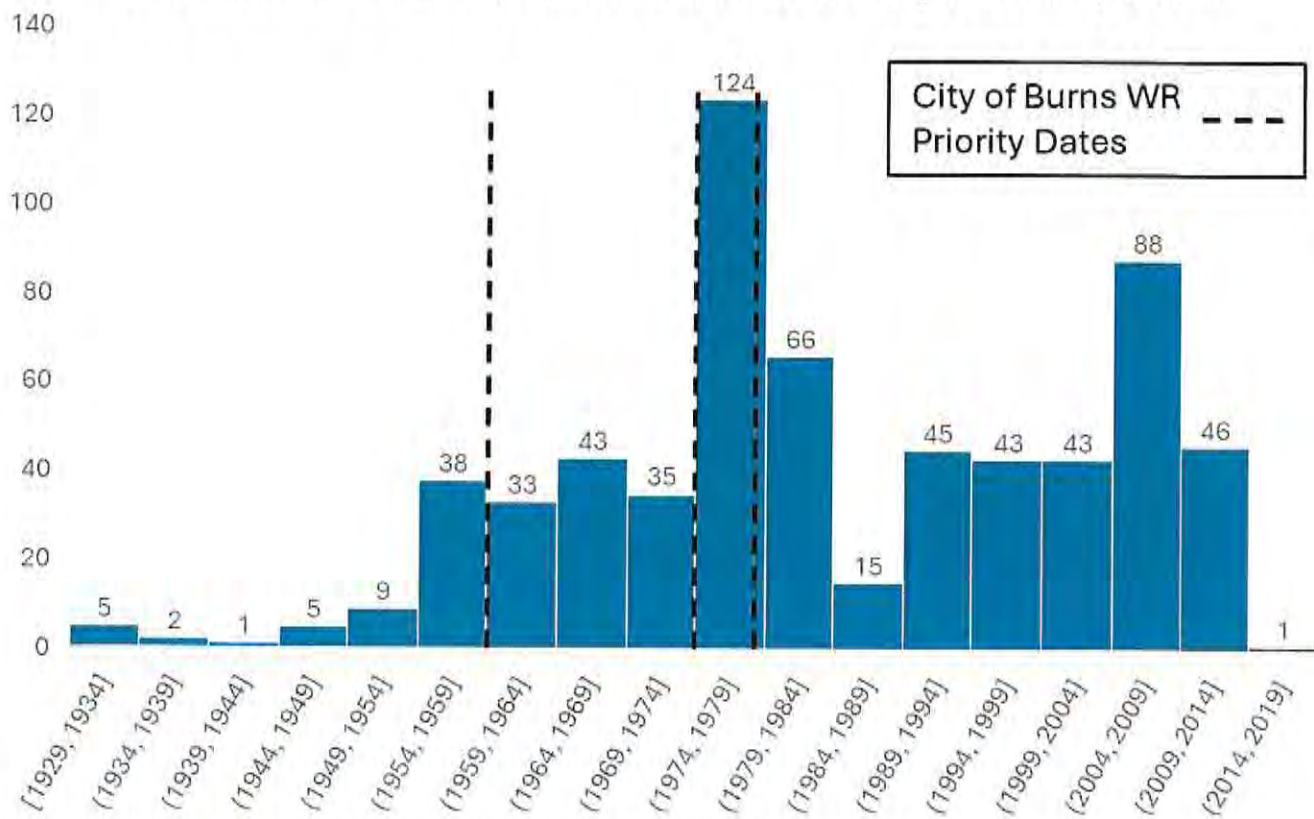


Values in CFS

Distribution of Harney Basin Water Right Priority Dates

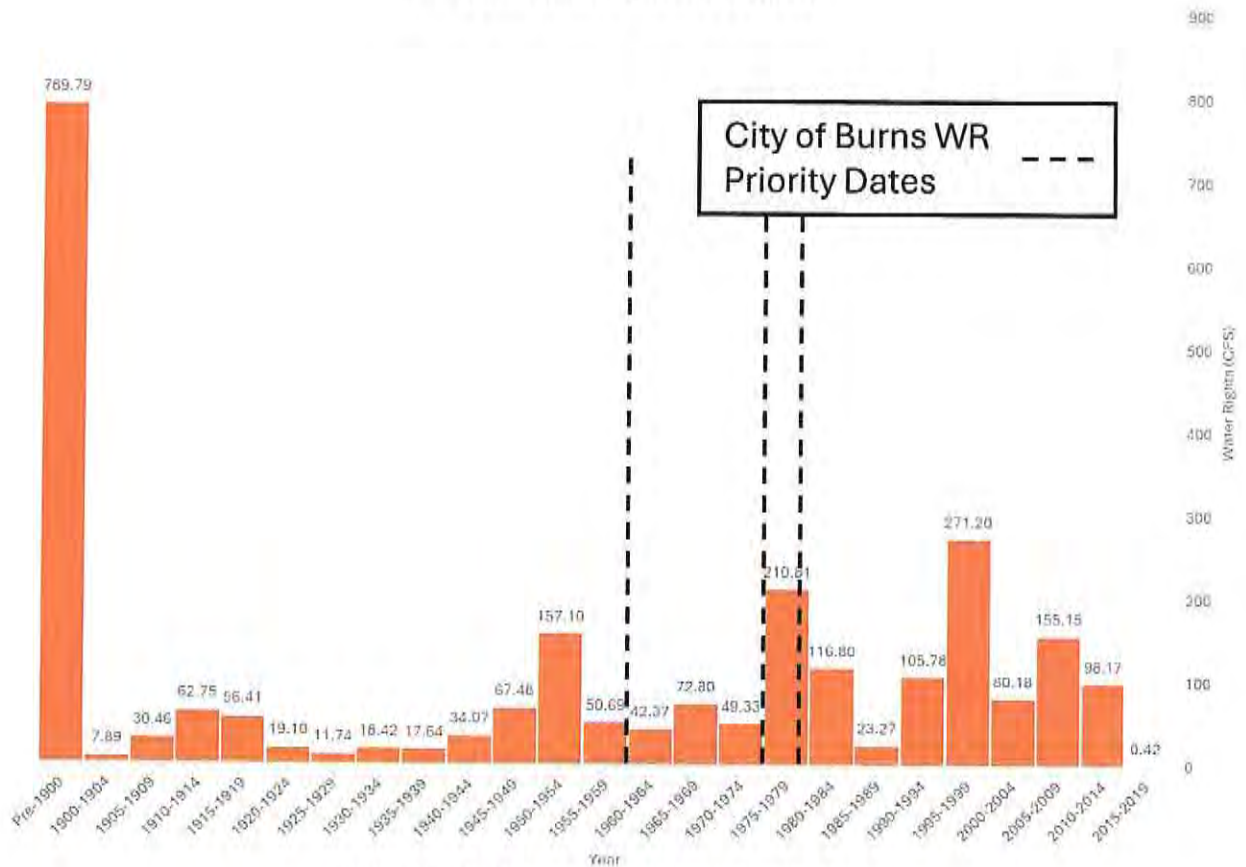


Distribution of Harney Basin Groundwater Right Priority Dates

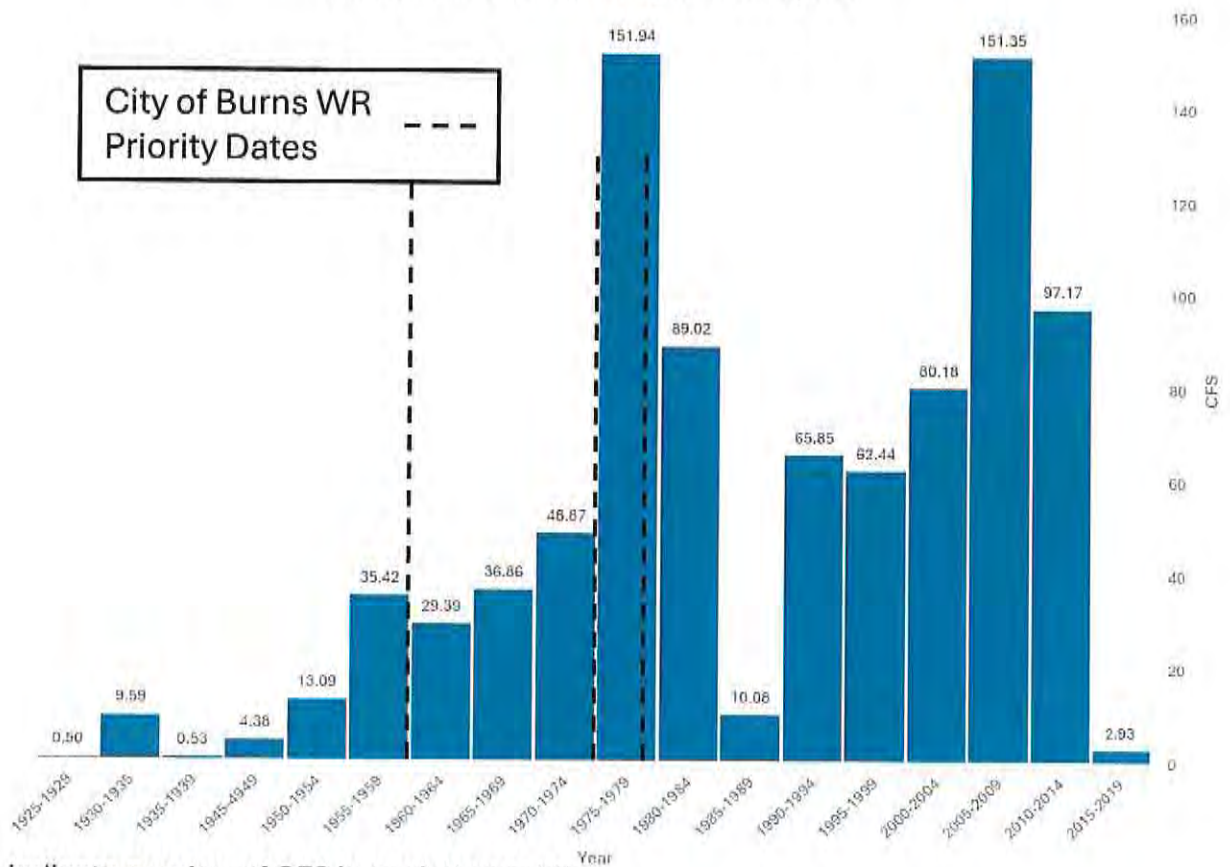


Bar-top labels indicate number of water rights in each 5-year bin.

Harney Basin Water Rights in CFS by Year



Harney Basin Groundwater Rights in CFS by Year



Bar-top labels indicate number of CFS in each 5-year bin.

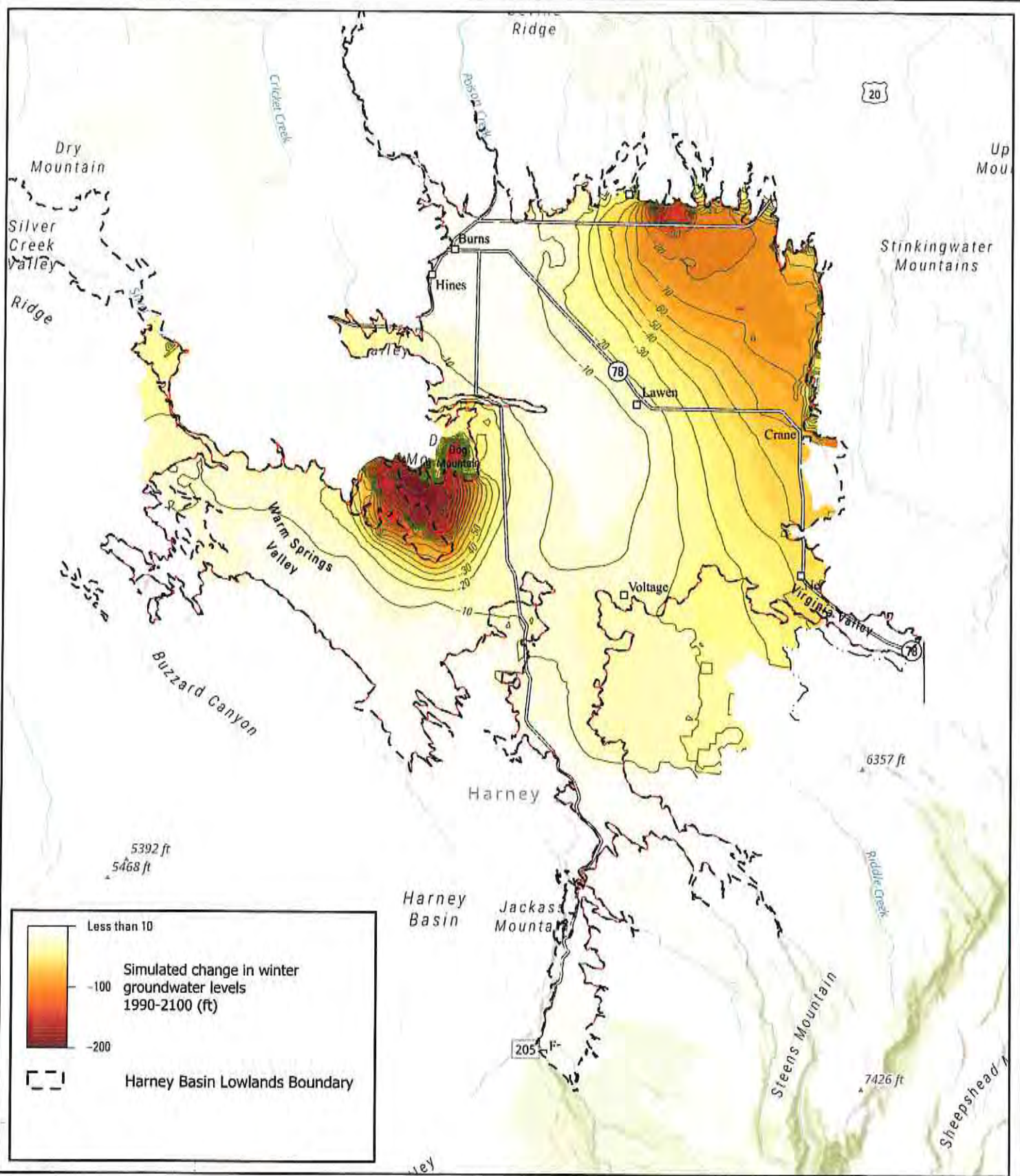
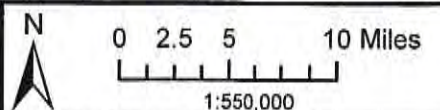


Figure 3a
Projected Winter Water Level Declines 1998-2100
in Model Layer 1
Adapted from Figure 44, Gingerich et al., 2024



CWM-H2O

Complete Water Management



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 Lake Oswego, Oregon 97034
 (503) 954-1326

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No.	Date	Page 86 of 628	

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 City of Burns 18/20

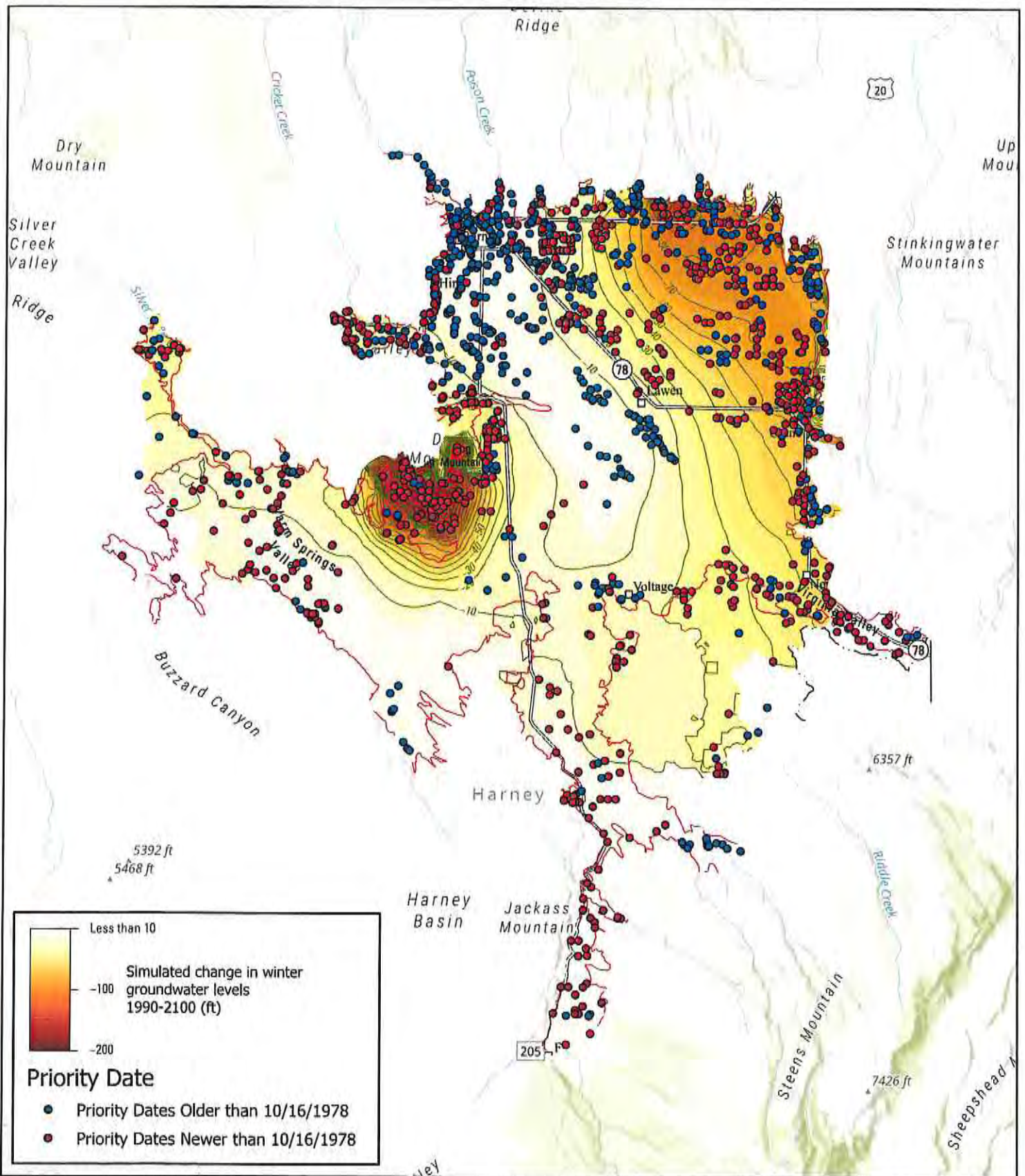
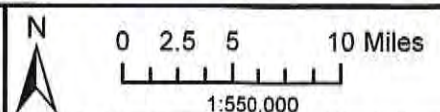


Figure 3b
Projected Winter Water Level Declines 1998-2100
in Model Layer 1 vs. Water Right Priority Dates
Adapted from Figure 44, Gingerich et al., 2024

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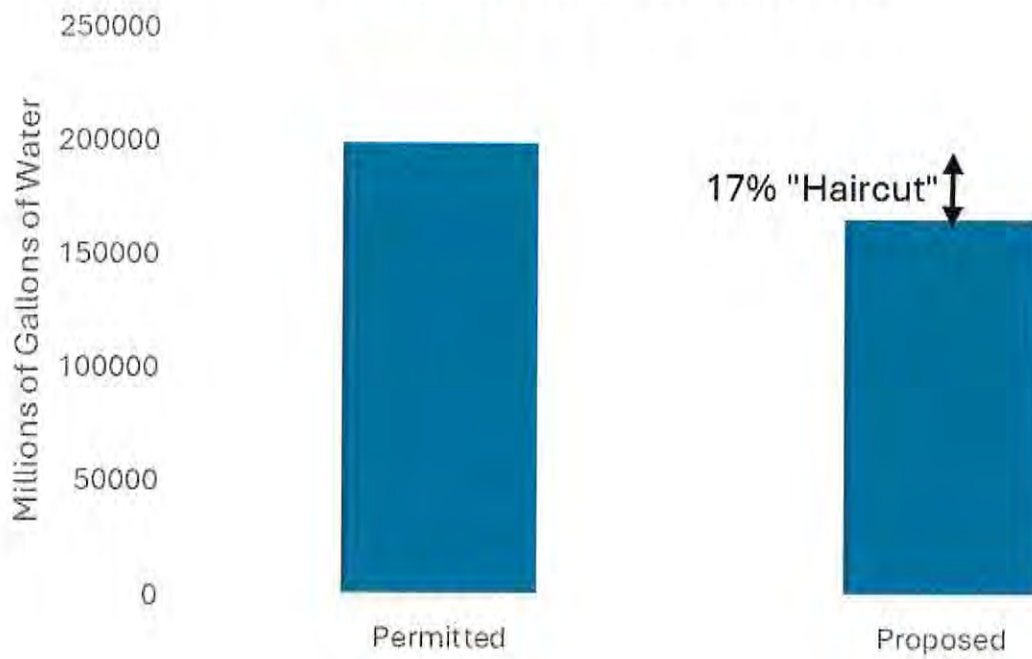


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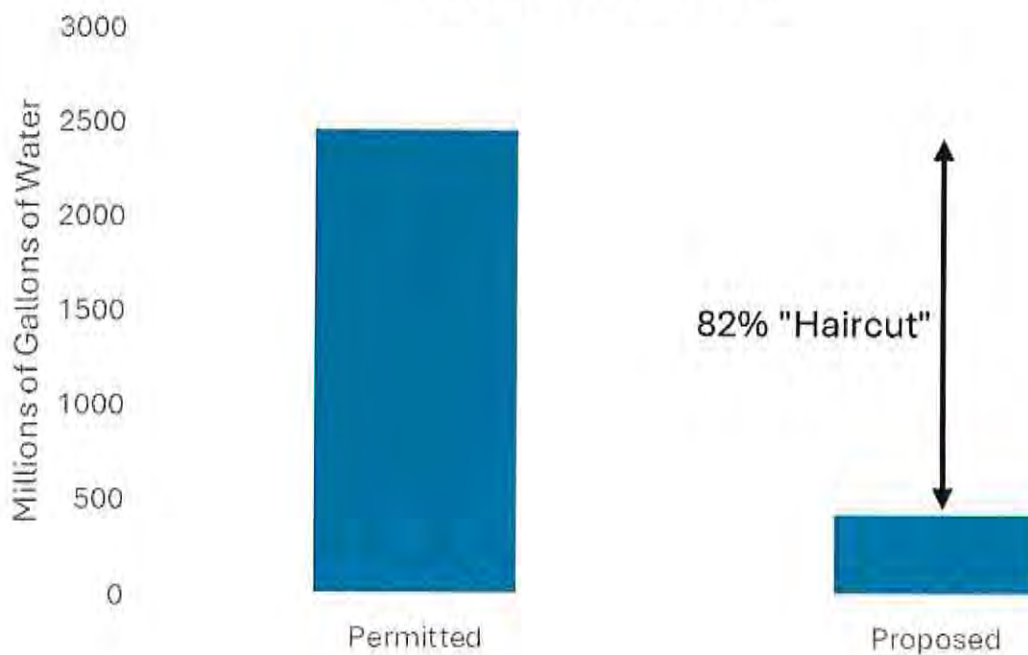
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 City of Burns 19/20

Harney Basin Irrigation WRs



City of Burns WRs



Values represent millions of gallons of water appropriated annually.

DATE

**Kelly Mainz – Rulemaking Coordinator
Oregon Water Resources Department
725 Summer St. N.E. Suite A
Salem, OR 97301-1271**

Subject: City of Hines Public Comments on Proposed Division 512 Rules

Dear Mr. Mainz,

Please accept these comments on behalf of the City of Hines on the proposed Division 512 rules. We respectfully request that the Department provide a formal presentation to our elected officials and work closely with our staff, engineers, and legal counsel to address our concerns. These rules for our area impose disproportionate burdens on municipalities in stable sub-areas. The State is engaging in significant overreach that will severely constrain our ability to meet the needs of our communities and potentially devastate the social and economic fabric of Harney County. Our comments are as follows:

- **Exclude the Silvies River area from the Critical Groundwater Area designation or set the permissible total withdrawal to a withdrawal amount that reflects actual safe yield and takes into account localized conditions.** The City of Hines pumps water from the Silvies River subarea. Our city has been operating wells since 1931. In that time there has been no evidence provided to the City of any material or sustained groundwater decline. At the beginning of the rulemaking process, we were under the impression that there were no problems within our area and municipalities would not be affected. We were not made aware that our operations would be affected by the proposed rules until the formal public comment period. As with property interests, the water rights of the City cannot be curtailed without compliance with applicable due process requirements.

Additionally, within our area, groundwater levels are reasonably stable and are not excessively declining. By the Department's own analysis, the Silvies and Northeast-Crane subareas are only "overdrawn" by ~2,700 afy. This represents a minimal percentage of total basin withdrawals. The proposed restrictions are inconsistent with the actual condition of the sub-area and fail to meet the requirement that regulatory action be based on substantial evidence of critical conditions.

We support protecting existing groundwater users by limiting additional development for other uses. Municipalities, however, should be allowed to continue to grow into their water rights to accommodate future growth and development.

- **Do not hold our subarea responsible for problems in other hydrologically distinct areas.** Our system is relatively high in the Silvies subarea, and we have a reliable and steady supply of quality groundwater. The Department has stated that Silvies River water recharges groundwater to both the Silvies and Northeast-Crane subareas, but we believe that the problems in the Northeast-Crane area are due in part to the distance from significant recharge areas and lack of localized recharge and significant groundwater development.

Consequently, problems in that area should be addressed by the groundwater users in that area. Our groundwater does not recharge the Silver Creek or Weaver Springs areas and does not extend into the Donner Und Blitzen area. Groundwater users in the Silvies subarea, including the City of Hines, should not be held responsible for problems in other parts of the basin. To ensure corrective controls are not an overreach, the Department should conduct a hydrologically-based subarea analysis in accordance with ORS 537.730(1)(a), (b) and (e), ensuring conditions in the Silvies subarea are independently evaluated.

- **Exempt municipalities from the rules.** Given that municipal water use is a relatively small portion of the overall groundwater use in the basin and in this subarea, we believe that the municipalities should be exempted from the rules as it will not make an appreciable difference on the groundwater situation and only serves to pit neighbors against neighbors and municipalities against other groundwater users. Exempting municipalities would enable ongoing municipal development and advance proactive conservation measures. The City must have reliable water to meet urgent housing and infrastructure needs, consistent with statewide priorities. Small, resource-limited cities require flexibility and cooperative support, not oppressive regulation, to thrive. The Department's current allocation model is misaligned from municipal planning realities and growth. Cities must have meaningful input, flexibility to address unforeseen growth, and a clear path to petition for adjustments without punitive consequences. We further request that any allocation framework recognizes that municipal supply is essential for public health and safety and is thus deserving of tailored treatment under ORS 537.525(2).
- **Allow continued municipal development and work proactively on conservation and efficiency measures.** Cities have many different responsibilities and face many different pressures. Having a reliable source of water to serve homes and businesses is critical to the long-term viability and vitality of the City of Hines. Right now, we are focused on meeting the critical housing needs of our state, as prioritized by Governor Kotek. Recently passed legislation will increase the density of housing and increase the production of middle housing and allow for zoning laws to be overridden by the state. In order to meet our housing goals, we need reliable access to water. We also just suffered through one of the most significant and devastating flood events in recent history. As small, under resourced cities, we need more flexibility and support, not more regulation and cumbersome restrictions. We would like to see the rules include a target reduction of 10-15% for the subarea and see the Department work with groundwater users on a cooperative approach, which we believe will yield greater benefits for groundwater and the community.
- **If the Department persists with regulation, develop a more responsive allocation approach for municipalities.** We want to be clear that we do NOT support the proposed regulatory approach in the Silvies subarea and believe that the Department should instead set voluntary targets for reduction and partner with groundwater users to voluntarily reduce groundwater use. If the Department persists in this approach, we do not support the allocation scheme proposed for municipalities. Rather than relying on 110% of the highest amount in the previous 6 years, the Department should be required to formally consult with

cities to determine the appropriate amount for future growth and development. There should also be a clear process by which cities can petition the Department to increase the allocation during a six-year period to accommodate unforeseen needs. Finally, the Department should not pit neighbors against neighbors as is currently proposed. The Department is essentially stating that by maintaining access to our full water rights, the City of Hines will be responsible for less water being available to our neighbors. There are more creative solutions that do not put us in this undesirable position.

- **Clarity regarding emergency uses of water and extenuating circumstances.** Last summer it was an all hands on deck response to the forest fires in our County. During that time firefighters were accessing significant amounts of water from both the City of Hines and City of Burns to aid in firefighting efforts. We would like to request written confirmation from the Department that the City of Hines and other appropriators in the basin will continue to be able to access the water necessary to respond to fire. We would also like to request written confirmation from the Department that in the event of a waterline break or other similar unavoidable action, that there will not be punitive measures if water use exceeds an allocation due to extenuating circumstances.
- **Reduce economic impacts through more targeted action in problem areas and provide a pathway for economic development.** The Department has not done enough to reduce fiscal impacts to local governments and small businesses. The projected economic impacts to the community are shocking and troubling. There is much more the Department can do to limit economic impacts. All issues we work on are interconnected. We cannot focus on a single aspect of City operations to the exclusion of other aspects. Consequently, we also need to be mindful of the economic opportunities we are fostering as well as the overall quality of life for our residents. These rules are far reaching and could be devastating to our communities. Impacts to local governments and small businesses could be greatly reduced by focusing regulatory action in problem areas. The current rules do not provide a clear pathway for securing groundwater for future economic development. We will not be able to attract new industries to our City without a pathway to secure water. Given the economic uncertainty presented by these sweeping rules, we are concerned that local business owners will have a more difficult time accessing the credit they need, which would have a devastating impact on local businesses. What is the Department proposing to do to help us manage the impact of these rules and identify economic growth opportunities?
- **Protect public health, welfare, and safety.** ORS 537.525 states that “rights to appropriate groundwater and priority thereof be acknowledged and protected, **except when**, under certain conditions, the public welfare, safety and health require otherwise.” Within a critical groundwater area the Department may include “any one or more provisions making such additional requirements as are necessary to protect the public welfare, health and safety” (see ORS 537.735). As written, the proposed rules will be detrimental to public health, welfare and safety. We are a natural resources economy and have limited economic development opportunities. Every job lost and every dollar of economic output lost does not send a ripple through our community, it sends a tidal wave. Each dollar lost is a dollar

that is not recirculated in our community. Each job loss reduces economic certainty for our residents. As people lose economic security, we often see a result of housing insecurity, homelessness, mental and behavioral health issues, increased domestic disturbances, increased reliance on assistance programs, and a decrease in public safety.

Our most vulnerable populations living life at the margin are losing federal assistance. The rule will also increase electric rates and has the potential to increase water rates. As jobs are lost, population numbers will decline and as the population decreases, the tax base goes down which will affect public and health services, which already face significant funding shortfalls. Has the Department seriously contemplated the true costs of this rule?

- **Request an invitation to set an example for cooperation and partnership.** As elected government officials we take seriously our role to work together to solve problems and as a community we have worked hard to create a culture of collaboration. The rules as they are currently written are beginning to breed resentment and animosity amongst members of our community and we are concerned that it sews the seeds for costly litigation and potential future conflict. We urge you to invest more resources in collaborative approaches that work with our community rather than put us at odds with each other, and with the State.
- **Involve the community in a meaningful way.** Focusing exclusively on regulation without meaningful opportunities for partnership will fracture this community and further erode trust in government. The current rules do not provide sufficient opportunities for meaningful community involvement. We would like to see the Department invest in an ongoing collaborative conversation with our community to work through this issue in a way that can account for all of the complexities mentioned in this letter.

To our knowledge, no other municipalities in Oregon have been regulated in the way that is being proposed, and no other basin is being held to the same standards as the Harney Basin. This is fundamentally unfair and unnecessary. The Department's analyses show that we do not have a problem in the Silvies subarea and while this area may have been overallocated by the Department, it is not overdeveloped or overdrawn according to the Department's own definition. The City of Hines is not concerned about water security in our area, with the exception of the proposed Division 512 rules that will unnecessarily limit access to our State authorized water rights. The Division 512 rules will be the single greatest source of insecurity for our City's future. It feels that the Department is imposing its rules on our community, rather than partnering with us to solve a problem.

Finally, outreach to the cities has been inadequate. It is our expectation now and into the future that the State engages in formal consultation and coordination with our elected officials and staff when contemplating policies that have the potential to affect essential services. Informal emails and phone calls to staff do not meet the intent of the Department's own rules to ensure compatibility with local land use plans and coordinate with affected governments (OAR 690-005 and OAR 690-010). As a result of the inadequate consultation and coordination, we expect that the Department will work closely with our staff, engineers, and legal counsel to ensure that our concerns are fully accounted for in the final rules prior to adoption by the Commission.

In Harney County, if someone in our community needs help we band together to help them. This was true in the flood, in the fires, and in everyday life. Rather than relying exclusively on regulation as the sole tool, we work hard to build a culture of neighbors helping neighbors in Harney County, and the State could learn from Harney County. As elected government officials, we take seriously our roles in representing the people and working with our community partners. We are all invested in sustainable groundwater use in our community and we believe we can achieve it together. As elected officials we urge you to use your positions to set the tone and example for how we can work together.

In preservation of the City's legal rights and remedies, we expressly reserve all rights to challenge any final rule under applicable State and Federal laws, including claims based on procedural violations, constitutional due process, takings under the Oregon and U.S. Constitutions, and lack of statutory authority.

In this regard, the Department should maintain a complete administrative record of all communications, submissions, and responses related to this rulemaking to ensure transparency and allow effective judicial or administrative review, as required by ORS 183.400 and consistent with the Oregon Administrative Procedure Act.

The City will continue to assert all procedural and substantive protections available under law, including challenges based on arbitrary and capricious action, lack of substantial evidence, and any violations of government coordination under applicable Oregon Administrative Rules. The City is hopeful that the Department will engage in meaningful consultation with the City to address the City's concerns in the final rules.



Robert Beers
Hines City Council, Position #1



Hilda Allison
Hines City Council, Position #2



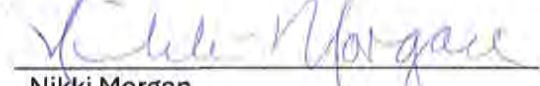
Dean Brizendine
Hines City Council, Position #4



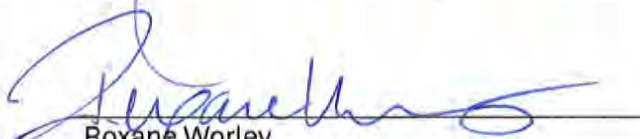
Kim Valentine
Hines City Council, Position #5



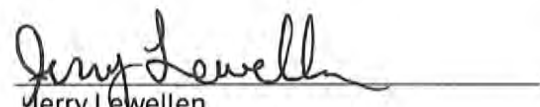
Misty Shepherd
Hines City Council, Position #6



Nikki Morgan
Hines City Mayor



Roxane Worley
City Administrator



Jerry Lowellen
Public Works Director

MEINZ Kelly A * WRD

From: Craig Lacy <lacycraig@gmail.com>
Sent: Sunday, August 10, 2025 8:45 AM
To: WRD_DL_rule-coordinator
Subject: Please Adopt Strong Rules to Stabilize Groundwater Levels in the Harney Basin

You don't often get email from lacycraig@gmail.com. [Learn why this is important](#)

Dear Kelly Mainz,

Dear Oregon Water Resources Department,

I am writing about the rules the Oregon Water Resources Department (OWRD) recently proposed to address groundwater declines in the Harney Basin.

I support stabilizing groundwater levels in the Harney Basin, which would provide the basin with a more sustainable future and help prevent additional impacts to groundwater dependent ecosystems such as springs, streams, wetlands, and native vegetation. It would also reduce the number of existing domestic wells that would be dried up due to irrigation pumping.

I offer the following additional comments: The groundwater levels need to stabilize in order to protect small farmer who can't afford to keep drilling deeper wells. Many people like myself often visit the Malheur Refuge to go birding and fishing. Groundwater depletion impacts many species. you must take into consideration a warming climate and do what you can to protect our water resources from further depletion.

Respectfully submitted,
Craig Lacy

1. I place a high value on the springs, streams, and other groundwater dependent ecosystems in the Harney Basin, and all of the fish, wildlife, and plants that rely on these ecosystems.
2. These groundwater dependent ecosystems have already been significantly degraded from the over-pumping of groundwater. Please ensure that these systems are protected in the Division 512 rules for the Harney Basin.
3. I support the requirement in the Proposed Rules for water use measurement and reporting on all non-exempt groundwater rights in the basin.
4. OWRD should not adopt rules that would dry up additional existing domestic wells, especially when it has no viable program in place to help these residents who will lose their drinking water.
5. Please consider strengthening the Proposed Rules by adopting a tighter schedule for imposing the lower pumping amounts ("Permissible Total Withdrawals"). I encourage a shorter timeline than the proposed 30 years to achieve stable groundwater levels in light of the major declines that have already occurred, and the significant impacts to groundwater dependent ecosystems and domestic wells that this has already caused.

Thank you for your kind attention and consideration of my comments.

Sincerely,

Craig Lacy
57 NW Pinecrest Court
Bend, OR 97703

Public Comment on Proposed OAR 690-512 Rulemaking & Harney Basin Critical Groundwater Area Designation

Submitted by: Craig Neher

Date: August 13, 2025

Contact: craig.neher@edstaub.com

To Whom It May Concern,

I am submitting this comment in strong opposition to the proposed rulemaking under OAR 690-512 and the designation of the Harney Basin as a Critical Groundwater Area.

While I recognize the need to manage groundwater sustainably, this rulemaking is deeply flawed. It lacks a holistic strategy, ignores private investments in legally adjudicated water rights, and threatens the economic survival of rural communities in Harney County.

As a business manager of Ed Staub & Sons Petroleum, Inc. I see firsthand the impact of agriculture on our community. 90% of our revenue is directly related to agriculture. 30-50% cuts to our customers directly relates to loss of living wage careers to our communities. The ripple down effect will cause loss of revenue to schools, restaurants, hospitals and clinics.

1. Curtailments Must Not Occur Without Full Monetary Compensation

Many landowners in Harney County purchased property specifically because of adjudicated water rights—rights that were bought in good faith, at substantial cost. These rights were not gifted; they are legally protected property interests.

The Oregon Water Resources Department over-allocated groundwater in this basin. Now, in an attempt to correct that mistake, it proposes to curtail those very rights without offering fair compensation. This is unacceptable. Any curtailment of adjudicated water rights must come with full and fair **monetary compensation**. Otherwise, this rule represents an unconstitutional taking.

2. No Holistic or Science-Based Water Management Plan

The proposal is narrowly focused on groundwater reduction, without offering a broader, science-based management plan. There is no meaningful integration of land use strategies, surface water coordination, or long-term conservation incentives. True water sustainability must include a full-scope management approach.

Federal and State land management departments must be involved and held accountable for public land management and the implementation of water conservation partnerships and practices. Over 70% of Harney County is public owned, and yet the rulemaking framework excludes any regulatory or cooperative mechanisms to manage those lands' impact of aquifer recharge. This represents a critical gap in any effort to sustainably manage the basin.

3. No Groundwater Recharge Plan

Despite the known potential for aquifer recharge in the Harney Basin, this rulemaking offers no program or investment in managed aquifer recharge (MAR), surface water capture, wetland restoration, or other recharge methods. Without recharge strategies, limiting water use will not be an effective or fair solution.

4. Inadequate Economic Impact Study

OWRD has failed to provide a robust, transparent, and localized economic impact study. This rule will devastate Harney County's agricultural economy, decrease land values, reduce county tax revenues, and harm families that have worked on this land for generations. The economic implications of this rulemaking must be properly studied and disclosed to the public before any designation moves forward.

5. Limited Local Involvement

This process has lacked true collaboration with the people who are directly affected. Local stakeholders—landowners, tribal members, and agricultural producers—have not been sufficiently included in shaping these rules. Top-down policy from Salem will not work for Harney County. Local voices must be centered on any effective and fair regulatory process.

The proposed rules disproportionately affect agriculture production placing the burden of groundwater sustainability entirely on private users while exempting or ignoring other significant stakeholders. The fear of groundwater loss is used as a talking point, with no regard to the devastation that can only be recognized from a local standpoint.

6. Private Geological and Hydrological Studies Must Be Reviewed

Several independently commissioned studies by qualified geologists and hydrologists offer more complete and locally accurate insights into groundwater conditions in the Harney Basin. These studies must be entered into the public record and considered with equal weight in any scientific decision-making.

Conclusion

The proposed rule under OAR 690-512 and the Critical Groundwater Area designation for the Harney Basin is unjust, incomplete, and economically damaging. The Oregon Water Resources Department must:

- Halt the rulemaking process as currently drafted;
- Develop a full-scope, science-based groundwater management plan;
- Include managed recharge strategies;
- Provide a full economic impact analysis; and

- Ensure no water right curtailments occur without fair monetary compensation.

We all share the goal of preserving groundwater for future generations. But the goal cannot be met through unilateral restrictions that fail to consider the full picture. This proposal, in its current form, shifts the cost of the state's past mismanagement onto landowners who acted in good faith. That is both unfair and unlawful. I respectfully urge you to reconsider.

Sincerely,

Craig Neher

Burns, OR

AUG 01 2025

PROPOSED HARNEY BASIN GROUNDWATER POLICIES – WRITTEN COMMENT FORM

OWRD

This written comment form can be used to help you formulate effective written public comments for the Division 512 Harney Basin Program Rules being proposed by the Oregon Water Resources Department, which will be used to manage and regulate groundwater use in the Harney Basin. The questions provided in this form address various aspects of the rules. Each question includes space to write your answer and some questions include options for you to consider. Reach out to Harmony Burright if you want help talking through or recording your comments (541-846-8863 / harmony@saltandfresh.solutions).

Public comments and related materials must be received no later than August 7, 2025 at 5pm:

By Email: WRD_DL_rule-coordinator@water.oregon.gov

By Mail: Kelly Mainz – Rulemaking Coordinator
Oregon Water Resources Department
725 Summer St. N.E. Suite A
Salem, OR 97301-1271

Your Name (required): CURT BLACKBURN

Your Email (optional): CURT@JETHBLACKBURN.COM

Your Phone (optional): 541-589-0025

Note: All personally identifiable information may be made public. Please do not include this information if you do not want it included in the public record. A first name and last initial must be included to be considered.

Please check all interests that apply to you:

☒	I have at least one well that supplies groundwater to my home for domestic purposes.
☒	I have at least one well that that supplies groundwater to my livestock.
☐	I have at least one well that supplies groundwater to a non-farm business (e.g., store).
☒	I irrigate/grow crops with groundwater in the Harney Basin.
☒	I have a groundwater fed spring on my property that is important to me.
☐	I value groundwater contributions to the environment (e.g., springs and native vegetation).
☐	I value fish and wildlife in the basin, including those that benefit from groundwater.
☒	I use agricultural products that are produced with groundwater.
☒	I value the economic contributions of agricultural operations that use groundwater.

Question 1. Please tell us about yourself and describe why groundwater is important to you. If you use groundwater, describe how you use it.

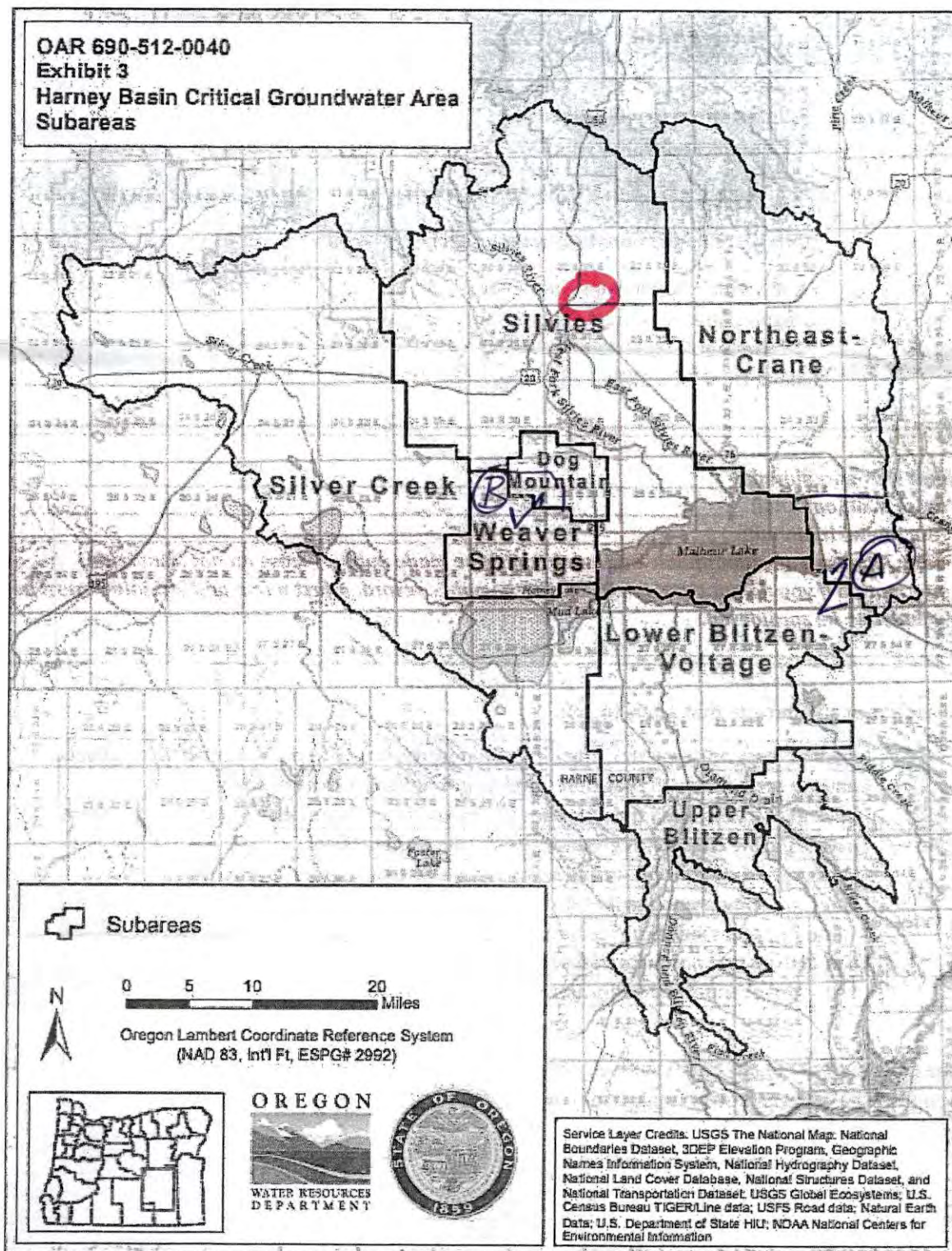
I am a third-generation farmer & business owner here in Harney Co. I currently irrigate 340 Acres using wells to Flood Irr. To produce hay and cattle feed. In addition to farming my family has a real estate business specializing in the sale of farms & ranches. Over the decades we have worked closely with all the landowners and I understand their operations, their challenges and their commitment to the land. Since we have done real estate since 1960 I understand first hand how the proposed water restrictions will impact our lifestyle economically & our Southern way of living.

AUG 01 2025

OWRD

Return public comments by August 7, 2025 via email or mail to the Water Resources Department

Question 2. If you use groundwater in the Harney Basin, mark with a color dot on the map provided where you use groundwater (this can be a rough approximation).



Question 3. The Water Resources Department proposes to designate the area in the map outlined in black as a **Critical Groundwater Area**, which would give them the authority to regulate or curtail/reduce groundwater use. Do you have any feedback on the boundaries or the basis for designating a Critical Groundwater Area described in the **Division 10 report**? (See 609-512-0041 in the proposed rules)

The OWRD's designation of the entire Haney Basin as a Critical Groundwater Area is INACCURATE As per the critical groundwater description. Our basin has a complex hydrogeologically with significant differences in Recharge across subareas. Only Weaver Springs and a portion of North Crane meet the criteria of the critical designat. The other Areas DO NOT. The southern portion of the Dog Mt. Should go into Weaver Springs. and the southern portion (wind point) should go into Lower Blitzen

Question 4. The map on the previous page shows the seven proposed **subareas** that the Department will use to regulate groundwater use (with different levels of regulation for each area). Based on your knowledge of the basin, are there any changes you would suggest to the boundaries? Draw them on the map and describe the reason below. (See 609-512-0041 in the proposed rules)

- (A) I Feel That The Southern portion of the Northeast Crane IS Recharge from The Lower Blitzen. The well in that area have been ~~not~~ GOOD producing for years where north west of Crane has been losing volume since the 80's
- (B) There is A few wells up on Dog Mt. That are in cinders or volcanic material which is The same in The Weaver Springs subarea

Question 5. Please describe **groundwater conditions** where you are and what changes in groundwater levels or other groundwater changes you have observed in the last decade. If you have not observed any changes, please note that. You are also welcome to note any questions you have.

I have personally had statics Done on my wells. Over the last year 2024 to 2025 The have gone up by one foot. my levels this year are between 13' & 15' static. During the drought years prior to 2021 The statics were a little ~~lower~~ lower but good n.w.

Question 6. If you have been or expect to be **impacted by changing groundwater conditions**, please describe how you have been impacted.

I was Impacted by Flooding This year 2025 I Feel That some of The reason we have had Shorten Recharges in our Basin is DO TO The fact our forest have been mismanaged. Excessive Tree Density with Increase water usage and Reduce stream & spring flow. In 2024 we had over 250K Acres of forest burned up which cause more water Reaching our Basin. I Feel That all The water issues in The Haney Basin is cause by The OWRD's over adjudication, Forest management, and The fact we have been drought conditions prior to 2022.

AUG 01 2025

Return public comments by August 7, 2025 via email or mail to the Water Resources Department

OWRD

Question 7. The Water Resources Department proposes to achieve the groundwater management goal of durably stable groundwater levels (0 feet per year of decline) by the year 2058 for the entire basin by curtailing groundwater use in 6-year intervals. Do you have feedback on the groundwater level goal and target groundwater level trend? (See 609-512-0041 in the proposed rules)

☐	I support the groundwater management goal and target groundwater level trend as proposed.
☒	I support the target groundwater level trend, but I would like to see more time allowed to achieve the goal. Year achieved:
☐	I support the target groundwater level trend, but I would like to see the goal achieved in less time on a quicker timeline. Year achieved:
☐	I think minor declines are acceptable and should be allowed. Acceptable amount of decline (in total feet or feet per year):
☐	I would like to see groundwater levels come back up or recover. Desired amount of recovery (in feet):
☐	I would like to be able to see groundwater levels be allowed to fluctuate between certain levels (+/- within a certain "band" of acceptable declines)

I Feel a 40% cut is To Aggressive. I would like to See a 20% cut IN 2028 with each year there after be as follows. 20% IN 2034, 20% IN 2024 10%-2046, + 10%-2052

Question 8. The proposed initial allocation (duty) for groundwater irrigation rights is 2.5 acre feet of water per acre for acres that were irrigated (wetted acres) sometime between 2020-2024. What feedback do you have on this proposal? (See 690-512-0060 in the proposed rules)

☒	I support the initial allocation of 2.5 acre feet for groundwater irrigation rights.
☐	I think the initial allocation should be greater than 2.5 acre feet. Proposed amount:
☐	I think the initial allocation should be less than 2.5 acre feet. Proposed amount:
☐	I support that wetted acres should be calculated based on use between 2020-2024.
☐	I think wetted acres should be calculated based on a different time period. Suggested time period:

I Am OK with The Total 2.5 Acre feet for ground water. I am not Supportive of Reducing The cities municipal & quasi-municipal Rights at all. By doing this you are limiting our community opportunity to grow. No other city has been Asked or Forced to give up Their water Rights. also The none use proposed by OWRD between 2020-2024 needs to also Take In consideration for Hardship cases such As Financial, Death, loss of well production.

Question 9. The proposed **initial allocation** for municipal or quasi-municipal groundwater rights is 110% of water equal to 110% of the greatest single year in the previous five-year period. What feedback do you have on this proposal? (See 690-512-0060 in the proposed rules)

AUG 01 2025

OWRD

please Read Question 8 for Answer

Question 10. The proposed **permissible total withdrawal (PTW)** for each of the seven subareas is described below. This is the amount of water that "represents the amount of water that the Water Resources Department has determined can achieve the target groundwater level trend by 2058. The Department may not reduce groundwater pumping to a value less than the permissible total withdrawal." Highlight your feedback about the level of reductions for each area below. A memo produced by the Department explores a different allocation between the Lower Blitzen-Voltage area and the Northeast-Crane area. What additional feedback do you have on these proposed levels of groundwater use (PTW) and reductions? (See 690-512-0050 in the proposed rules)

Weaver Springs	Lower Blitzen-Voltage	Northeast-Crane	Silver Creek	Silvies	Dog Mountain	Upper Blitzen
PTW: 4,800 afy	PTW: 8,300 afy	PTW: 35,000 afy	PTW: 15,200 afy	PTW: 21,200 afy	PTW: 4,200 afy	PTW: 100 afy
75% reduction from 2018 use	39-40% reduction from 2018 use	34% reduction from 2018 use	27-28% reduction from 2018 use	15-16% reduction from 2018 use	9-10% reduction from 2018 use	0% reduction from 2018 use
Too much?	Too much?	Too much?	Too much?	Too much?	Too much?	Too much?
Too little?	Too little?	Too little?	Too little?	Too little?	Too little?	Too little?
Just right?	Just right?	Just right?	Just right?	Just right?	Just right?	Just right?
I don't know	I don't know	I don't know	I don't know	I don't know	I don't know	I don't know

I Feel That There are only two areas that are critical water areas which is Weaver Springs and part of The Northwest-Crane area. The other areas are not critical water areas as is describe by OWRD. These areas should not have any Restrictions

Question 11. The reductions in each subarea will be phased in over time following a proposed reduction schedule, with the largest percent of reductions made initially and later reductions phased in over 6 year intervals based on existing groundwater level trends to ensure that groundwater levels are on track to achieve the groundwater management goal. Reductions will be based on priority date using the initial allocation as a starting point. What feedback do you have on the proposed reduction schedule? (See OAR 690-512-0070 in the proposed rules).

	2028	2034	2040	2046	2052	2058
Other Subareas	40% of total reductions	30% of total reductions	15% of total reductions	10% of total reductions	5% of total reductions	Stability achieved
Weaver Springs	75% of total reductions	25% of total reductions	--	--	--	--

	I support the proposed reduction schedule (percent reductions and implementation timeframe).
	I would like to see higher reductions implemented in the near-term.
	I would like to see lower reductions implemented in the near-term.
X	I would like to see 20% reductions implemented at each step.
	I would like to see all reductions implemented immediately.
	I would like to see a shorter implementation timeframe (achieve stability sooner).
	I would like to see a longer implementation timeframe (longer period to achieve stability).
	If groundwater levels have not been declining in a subarea, I would like to see a grace period during the first 6-year period where no reductions are implemented.

Question 12. The Department is proposing to follow an adaptive management approach for implementing reductions informed by groundwater level trends. If groundwater level trends are "on track" then no adjustments would be made. This approach allows the Department to make changes to the reductions to achieve the goal. Reductions could be adjusted up or down depending on how groundwater levels change over the previous 6 years. What feedback do you have on the adaptive management approach? (See 690-512-0080 in the proposed rules)

I Feel That Reductions each year should not exceed 20% Also in the event users put their property in The CREP program That should come off the 20% proposed Reductions on the following 6 year term

Question 13. By 2028 all groundwater rights holders will be required to install a flowmeter to measure groundwater use and will be required to report groundwater use on an annual basis. A flowmeter must be installed on this timeframe in order to continue to legally use groundwater under existing rights. What feedback do you have on this requirement? Will you seek any assistance to meet this requirement? (See 690-512-0110 in the proposed rules)

I Feel This is a must to have meters of some kind to Report Actual usage.

Question 14. Under the proposed rules the only new uses that will be allowed are those uses that do not require water rights (i.e., permit exempt uses), such as domestic and stockwater wells, and non-consumptive geothermal uses. What feedback do you have on the proposed new uses? (See 690-512-0030 in the proposed rules)

I feel Transfers should be allowed inside Subareas, I also feel to help economically should be exemption for Geothermal, City expansion, Recreational opportunities, & Data centers or a pathway that allows for new development with offset water.

Question 15. Please describe what personal impacts you expect these rules might have on you (either positive or negative).

Personal Impacts would be to our services such as Hospitals, Mental Health, Culture, Emergency Services, Financial Impact, School for our kids.

Question 16. Please describe what basin impacts you expect these rules might have on the broader basin or community (either positive or negative). (See the Fiscal Impact Statement).

Economic Collapse of Agriculture, Job Losses & Local business decline, Decline in School Funding & Public Services, Mental Health & Social STRAIN, Threat to Rural Heritage & Culture

Return public comments by August 7, 2025 via email or mail to the Water Resources Department

Question 17. Describe actions that you would like the Department to consider that could mitigate or minimize anticipated impacts to you or the basin. This could include support for proposed policies or changes to the proposed policies.

OWRD

I Feel we need SLOWER approach implementing The Reduction to help minimize The economic impact to our community.

Question 18. When you look into the future, what is most important to you? What do you hope to see for yourself and for the basin? What are you most concerned about?

I Am concerned that The future of Harney County will be totally devastated and we will not be able to build back from and will forever lose our lifestyle. We have been hit by The loss of our mills do to The Spotted Owl which almost ended our community. IF we have another situation like that we may never survive.

Question 19. What else is important for you to communicate to the Department?

In Harney County we do Recanalize There is a couple of Area where there is Receding water levels and that there needs to be Reductions. OWRD admitted in The March 5 2025 RAC meeting that They were the cause of The over Adjudication of water Rights Because of The non-management approach and The lack of not paying Attention to The public 1972 Robertson Report showing The amount of water Recharge in our Basin

Question 20. Do you have any other feedback on the proposed rules or groundwater management?

→ OWRD over Adjudicated The water putting our community into a potential devastation economic situation. We have Farmers & Ranchers that were misled by giving them permit water rights which they vested millions of dollars in development. I Feel That the State of Oregon is liable for The situation we are in and should compensate those being harmed.

For questions about the proposed rules, please contact Kelly Mainz at the Water Resources Department (WRD_DL_rule-coordinator@water.oregon.gov or 971-718-7087).

For assistance with developing effective written comments, please reach out to Harmony Burright with the High Desert Partnership who can help (541-846-8863 or harmony@saltandfresh.solutions).

MEINZ Kelly A * WRD

From: Dan Nichols <nicholsdan70@gmail.com>
Sent: Monday, August 4, 2025 9:49 AM
To: WRD_DL_rule-coordinator
Subject: Comments on Rules by OWRD Concerning Harney Basin (Section 512)

You don't often get email from nicholsdan70@gmail.com. [Learn why this is important](#)

August 2, 2025

My name is Dan Nichols and I live in Diamond, Oregon on a fifth generation cattle ranch. I also own property in the Lower Blitzen- Voltage sub area consisting of five pivots and rangeland. The Diamond Ranch has been in the family for 111 years with our children being the fifth generation on the ranch. The property in the Blitzen - Voltage sub area was purchased to offset the loss of a long term Malheur Wildlife Refuge permit that provided the ranch with five months of winter feed. The permit was revoked upon the passing of the initial permit signator. I am submitting public comment to the Division 512 rules because they have the potential to adversely affect the value and sustainability of both ranches and the ability of my children to continue operating the business and for me to retire with any remaining value or certainty of income.

Our wells within the Blitzen-Voltage subarea have not shown a decline in static levels. Last year our static levels actually came up a foot. There are 86 wells in this subarea and the reduction proposed by 690-512-0050 sets the PTW at 8,300 acre-feet per year. That magnitude of reduction has the potential to affect my water use and will most certainly affect my neighbors in an area that has some of the most stable static levels in the Harney Basin.

As a result of years of study and model development by OWRD, the actuality of the situation is a best guess estimate as to what the realities of the curtailment of water use will be. The necessity of the need to mitigate the use and better manage limited ground water resources in the Harney Basin is not in question. How it is to be done is the critical factor in the ability of the ag business sector to remain an economic force in Harney County.

At a public meeting the statement was made that only about 340 jobs would be impacted by the proposed rulings being suggested by OWRD. Using the Oregon Department of Labor numbers 340 jobs in Harney County equates to 13% of the workforce. A similar reduction of 13% of jobs in the Portland metro district would be 169,000 jobs. A job loss of that magnitude would not be tolerated by the political leadership of the Portland metro area and should not be the reality of stabilizing and maintaining a reliable groundwater resource in Harney County. It should be clearly understood that the loss of groundwater use is not a job lost, it is, in many situations, a multigenerational business, a lifelong occupation and an absolute identity of the people that make their living with the beneficial use of water.

As a past five term county commissioner I have been involved in several collaborative efforts to develop positive resolutions to a variety of complex and varied issues that have saved agencies time and money due to the lack of litigation as a result of collective resolution to complex and controversial issues. It is clear that the Department staff have approached the groundwater issue as a strictly science based problem with models developed to project cause and effect and regulatory authority to advance a course

of action to supposedly remedy an extremely variable problem within the Harney Basin. It is of paramount importance that the Department and the Commission consider the broader and important aspects of the people and the socio-economic realities of production agriculture in Harney County,

It is my understanding that the Department is in hopes of generating a process of dealing with water shortage issues that could be used in similar situations statewide. Who better than the people of Harney County and High Desert Partnership, with several examples of success, to help develop a proactive, positive approach to such an important and ongoing situation as water allocation, use and continued management.

I am in hope that the Commission and OWRD will strongly consider a continuing dialogue with water users in Harney County and the High Desert Partnership for the development of a collaborative effort to further consider alternatives and new methods for future groundwater management.

Thank you for the opportunity to comment on the proposed rules.

Dan Nichols
McCoy Creek Ranch

Received
AUG 04 2025
OWRD

PROPOSED HARNEY BASIN GROUNDWATER POLICIES – WRITTEN COMMENT FORM

This written comment form can be used to help you formulate effective written public comments for the Division 512 Harney Basin Program Rules being proposed by the Oregon Water Resources Department, which will be used to manage and regulate groundwater use in the Harney Basin. The questions provided in this form address various aspects of the rules. Each question includes space to write your answer and some questions include options for you to consider. Reach out to Harmony Burright if you want help talking through or recording your comments (541-846-8863 / harmony@saltandfresh.solutions).

Public comments and related materials must be received no later than **August 7, 2025 at 5pm:**

By Email: WRD_DL_rule-coordinator@water.oregon.gov

By Mail: Kelly Meinz – Rulemaking Coordinator
Oregon Water Resources Department
725 Summer St. N.E. Suite A
Salem, OR 97301-1271

Your Name (required): Dan Nichols
Your Email (optional): nicholsdan70@gmail.com
Your Phone (optional): 541 493-2440
Note: All personally identifiable information may be made public. Please do not include this information if you do not want it included in the public record. A first name and last initial must be included to be considered.

Please check all interests that apply to you:

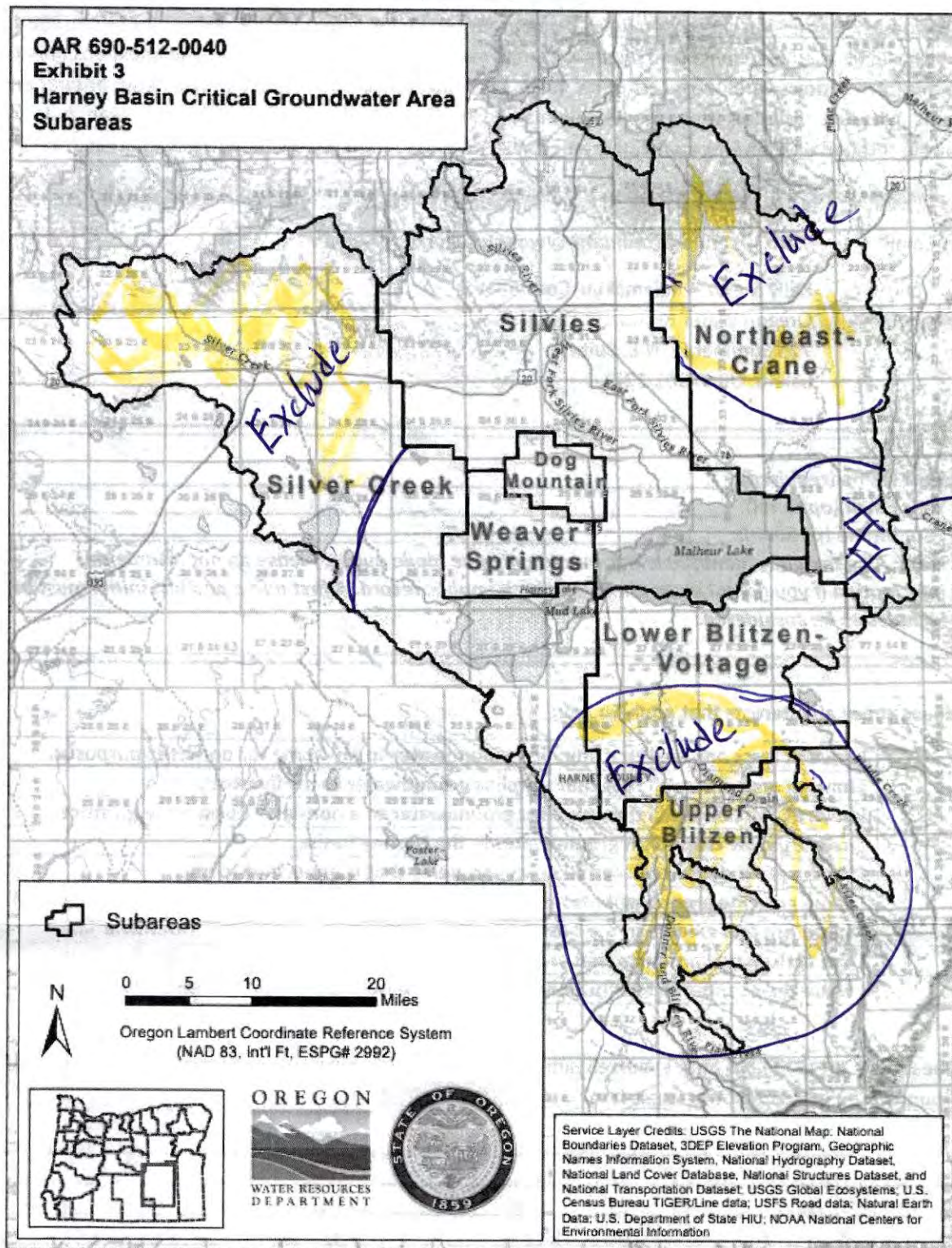
☒	I have at least one well that supplies groundwater to my home for domestic purposes.
☒	I have at least one well that that supplies groundwater to my livestock.
☒	I have at least one well that supplies groundwater to a non-farm business (e.g., store).
☒	I irrigate/grow crops with groundwater in the Harney Basin.
☒	I have a groundwater fed spring on my property that is important to me.
☒	I value groundwater contributions to the environment (e.g., springs and native vegetation).
☒	I value fish and wildlife in the basin, including those that benefit from groundwater.
☒	I use agricultural products that are produced with groundwater.
☒	I value the economic contributions of agricultural operations that use groundwater.

Question 1. Please tell us about yourself and describe why groundwater is important to you. If you use groundwater, describe how you use it.

Our children are 5th generation on this ranch. An additional property with pivots, groundwater wells, was purchased to balance ranching operation when life long Malheur Refuge lease was terminated due to death of 2nd generation passing. A loss of production on that property, due to revoked water rights, would negate retirement income for 4th generation and productive, long term ranch business for 5th generation – breaking two families means of financial income

Return public comments by August 7, 2025 via email or mail to the Water Resources Department

Question 2. If you use groundwater in the Harney Basin, mark with a color dot on the map provided where you use groundwater (this can be a rough approximation).



Question 3. The Water Resources Department proposes to designate the area in the map outlined in black as a **Critical Groundwater Area**, which would give them the authority to regulate or curtail/reduce groundwater use. Do you have any feedback on the boundaries or the basis for designating a Critical Groundwater Area described in the **Division 10 report**? (See 609-512-0041 in the proposed rules)

The area is well beyond necessary or advantageous boundaries. A great deal of the area lies without "the low lying parts of the basin where most of the groundwater use occurs". The Upper Blitzen should not be implicated - period. Northern Silver Creek and NE Crane northern portions should be excluded. Silvies has illegal practices going on that should be addressed by DWRD. Regulatory authority from basin expansion is overstepping means to try to stabilize the true lower basin and associated problems

Question 4. The map on the previous page shows the seven proposed **subareas** that the Department will use to regulate groundwater use (with different levels of regulation for each area). Based on your knowledge of the basin, are there any changes you would suggest to the boundaries? Draw them on the map and describe the reason below. (See 609-512-0041 in the proposed rules)

Areas highlighted should be excluded from the CGWA. Surface water rights are adjudicated and runoff being variable is hard to identify actual individual aquifer rejuvenation potential. You can develop "models" all you want but the true scientific proof to basin reservoir restoration is very difficult to prove. XXX marked area has more in common with Lower Blitzen

Question 5. Please describe **groundwater conditions** where you are and what changes in groundwater levels or other groundwater changes you have observed in the last decade. If you have not observed any changes, please note that. You are also welcome to note any questions you have.

We are in the lower Blitzen - Voltage subarea. Only one well supposedly is showing larger static level drops. One individual has complained about domestic well. Our static levels have not been decreasing and one well increased by a foot this past year. Our area does not need to be curtailed to the 40% indicated. Subsurface water from our area WILL NOT help recharge Crane - Buchanan or Weaver Springs

Question 6. If you have been or expect to be **impacted by changing groundwater conditions**, please describe how you have been impacted.

As stated above, we are currently stable. The authorization for H₂O right transfer and five or six new wells to the west of us in the past few years may make a difference in the future.

Question 7. The Water Resources Department proposes to achieve the **groundwater management goal** of durably stable groundwater levels (0 feet per year of decline) by the year 2058 for the entire basin by curtailing groundwater use in 6-year intervals. Do you have feedback on the groundwater level goal and target groundwater level trend? (See 609-512-0041 in the proposed rules)

☐	I support the groundwater management goal and target groundwater level trend as proposed.
☐	I support the target groundwater level trend, but I would like to see more time allowed to achieve the goal. Year achieved:
☐	I support the target groundwater level trend, but I would like to see the goal achieved in less time on a quicker timeline. Year achieved:
☐	I think minor declines are acceptable and should be allowed. Acceptable amount of decline (in total feet or feet per year):
☐	I would like to see groundwater levels come back up or recover. Desired amount of recovery (in feet):
☐	I would like to be able to see groundwater levels be allowed to fluctuate between certain levels (+/- within a certain "band" of acceptable declines)

Unless you put a 100% halt to withdrawal from Crane Budanan - Weaver Spgs areas, you are not going to achieve 0 feet per year decline in all areas. I refuse to check any of the boxes above as there are too many variables that need to be addressed. Honest, hard nosed assessments need to be made for the most depleted areas. Other, more stable areas need more latitude. It is a problem that needs true, honest assessment, down to individual H2O rights and wells. Much work but the only truly equitable way to make correct determination of reduction

Question 8. The proposed **initial allocation** (duty) for groundwater irrigation rights is 2.5 acre feet of water per acre for acres that were irrigated (wetted acres) sometime between 2020-2024. What feedback do you have on this proposal? (See 690-512-0060 in the proposed rules)

☒	I support the initial allocation of 2.5 acre feet for groundwater irrigation rights.
☐	I think the initial allocation should be greater than 2.5 acre feet. Proposed amount:
☐	I think the initial allocation should be less than 2.5 acre feet. Proposed amount:
☒	I support that wetted acres should be calculated based on use between 2020-2024.
☐	I think wetted acres should be calculated based on a different time period. Suggested time period:

2.5 acre feet is a good allocation to start from

Question 9. The proposed initial allocation for municipal or quasi-municipal groundwater rights is 110% of water equal to 110% of the greatest single year in the previous five-year period. What feedback do you have on this proposal? (See 690-512-0060 in the proposed rules)

Municipalities can be huge water users. What if Facebook wanted to come to Harney County? I would hope OWRD would hold true to the 110% and not succumb to the development argument which would further exacerbate ag and multi generational businesses.

Question 10. The proposed permissible total withdrawal (PTW) for each of the seven subareas is described below. This is the amount of water that "represents the amount of water that the Water Resources Department has determined can achieve the target groundwater level trend by 2058. The Department may not reduce groundwater pumping to a value less than the permissible total withdrawal." Highlight your feedback about the level of reductions for each area below. A memo produced by the Department explores a different allocation between the Lower Blitzen-Voltage area and the Northeast-Crane area. What additional feedback do you have on these proposed levels of groundwater use (PTW) and reductions? (See 690-512-0050 in the proposed rules)

Weaver Springs	Lower Blitzen-Voltage	Northeast-Crane	Silver Creek	Silvies	Dog Mountain	Upper Blitzen
PTW: 4,800 afy	PTW: 8,300 afy	PTW: 35,000 afy	PTW: 15,200 afy	PTW: 21,200 afy	PTW: 4,200 afy	PTW: 100 afy
75% reduction from 2018 use	39-40% reduction from 2018 use	34% reduction from 2018 use	27-28% reduction from 2018 use	15-16% reduction from 2018 use	9-10% reduction from 2018 use	0% reduction from 2018 use
Too much?	Too much?	Too much?	Too much?	Too much?	Too much?	Too much?
Too little?	Too little?	Too little?	Too little?	Too little?	Too little?	Too little?
Just right?	Just right?	Just right?	Just right?	Just right?	Just right?	Just right?
I don't know	I don't know	I don't know	I don't know	I don't know	I don't know	I don't know

Lower Blitzen-Voltage may be the most stable subarea identified. Again, that severe of a reduction is not warranted and will not help restore water to other areas. The rest of my feedback is based on experience with landowners, their comments and realities, in the other subareas.

Question 11. The reductions in each subarea will be phased in over time following a proposed reduction schedule, with the largest percent of reductions made initially and later reductions phased in over 6 year intervals based on existing groundwater level trends to ensure that groundwater levels are on track to achieve the groundwater management goal. Reductions will be based on priority date using the initial allocation as a starting point. What feedback do you have on the proposed reduction schedule? (See OAR 690-512-0070 in the proposed rules).

	2028	2034	2040	2046	2052	2058
Other Subareas	40% of total reductions	30% of total reductions	15% of total reductions	10% of total reductions	5% of total reductions	Stability achieved
Weaver Springs	75% of total reductions	25% of total reductions	--	--	--	--

☐	I support the proposed reduction schedule (percent reductions and implementation timeframe).
☐	I would like to see higher reductions implemented in the near-term.
☐	I would like to see lower reductions implemented in the near-term.
☐	I would like to see 20% reductions implemented at each step.
☐	I would like to see all reductions implemented immediately.
☐	I would like to see a shorter implementation timeframe (achieve stability sooner).
☐	I would like to see a longer implementation timeframe (longer period to achieve stability).
☒	If groundwater levels have not been declining in a subarea, I would like to see a grace period during the first 6-year period where no reductions are implemented.

The law needs to be altered, possibly, in regard to jr rights being the first to go under these conditions. Jr rights being pulled may, quite possibly, have no effect on bolstering levels in a sr. rights well. Again, honest, direct decisions and changes need to be made to make sure the financial, economic considerations to individuals and county as a whole are the least impactful as possible. This community has the ability to help the dept. work through these decisions.

Question 12. The Department is proposing to follow an adaptive management approach for implementing reductions informed by groundwater level trends. If groundwater level trends are "on track" then no adjustments would be made. This approach allows the Department to make changes to the reductions to achieve the goal. Reductions could be adjusted up or down depending on how groundwater levels change over the previous 6 years. What feedback do you have on the adaptive management approach? (See 690-512-0080 in the proposed rules)

This approach allows for flexibility in the process.

Question 13. By 2028 all groundwater rights holders will be required to install a flowmeter to measure groundwater use and will be required to report groundwater use on an annual basis. A flowmeter must be installed on this timeframe in order to continue to legally use groundwater under existing rights. What feedback do you have on this requirement? Will you seek any assistance to meet this requirement? (See 690-512-0110 in the proposed rules)

Although it is just another mandated expense to private businesses it seems to be a necessary tool to help achieve the goal of sustainable levels in the future. Assistance may be sought to meet this required goal

Question 14. Under the proposed rules the only new uses that will be allowed are those uses that do not require water rights (i.e., permit exempt uses), such as domestic and stockwater wells, and non-consumptive geothermal uses. What feedback do you have on the proposed new uses? (See 690-512-0030 in the proposed rules)

N/A

Question 15. Please describe what personal impacts you expect these rules might have on you (either positive or negative).

As stated earlier, new regulations or curtailed water use could absolutely destroy a 5th generation business that currently provides the income for two families at two extremes of their lifespans. It will have a detrimental impact to finances due to required monitoring but will also impact, or continue to, impact time to meetings and fulfilling requirements to the CWGA. Time for business people is a critical and expensive factor

Question 16. Please describe what basin impacts you expect these rules might have on the broader basin or community (either positive or negative). (See the Fiscal Impact Statement).

The projected 340 "jobs" lost is currently 13% of the job market of Harney County. Announce a 13% job loss in the Portland area and stand back from the political storm that creates. The fact is, these "jobs", in large part, are family businesses that are sometimes generational and encompass a group of lives, not like losing a job selling cars at the local Ford dealership. Impacts of this magnitude has a tremendous effect on people. That should be a MAJOR consideration in this process.

Question 17. Describe actions that you would like the Department to consider that could mitigate or minimize anticipated impacts to you or the basin. This could include support for proposed policies or changes to the proposed policies.

This community has been calling for a collaborative effort to address the multitude of issues this process has caused. We can collectively work together to meet the goal of sustainable water utilization with the involvement and support of OWRD. A bureaucratic, policy driven resolution or outcome to a complex and potentially devastating situation as a COWA is not in the best interest of the people or the resources of Harney County.

Question 18. When you look into the future, what is most important to you? What do you hope to see for yourself and for the basin? What are you most concerned about?

A hard lined policy driven resolution to all of the implications of limited water sources could be the final blow to a functioning community of Harney County. The loss of the timber industry has not been regained in the economy. The loss of a major ag component could tip the scales to a permanent negative balance quite easily. Tourism doesn't begin to take the place of the forestry loss, much less ag business too.

Question 19. What else is important for you to communicate to the Department?

Step up and set a new precedent for working with areas of the state with limited water resources. Again, we have a very successful track record of collectively working with the people involved in the full spectrum of an issue. The High Desert Partnership can assist all of us in coming up with a resolution to the issue that has the broadest support of eventual results possible.

Question 20. Do you have any other feedback on the proposed rules or groundwater management?

When the Clinton administration threatened to make Steens Mtn a monument, Gov Kitzhaber and Congressman Walden developed a working group to come up with an acceptable alternative. Harney County participated and we developed the Steens Mtn Act that meets the requirements set forth by the Clinton administration. We can come up with some adaptive management that will meet OWRD requirements and be acceptable to Harney County as well.

For questions about the proposed rules, please contact Kelly Mainz at the Water Resources Department (WRD_DL_rule-coordinator@water.oregon.gov or 971-718-7087).

For assistance with developing effective written comments, please reach out to Harmony Burright with the High Desert Partnership who can help (541-846-8863 or harmony@saltandfresh.solutions).

High Desert Partnership

PO Box 252

Burns OR 97720-0252

PORTLAND OR RPDC 972

2 AUG 2025 PM 4 L



**Kelly Mainz - Rulemaking Coord.
OR Water Resources Dept.
725 Summer St. N.E. Suite A
Salem, OR 97301-1271**

PROPOSED HARNEY BASIN GROUNDWATER POLICIES – WRITTEN COMMENT FORM

This written comment form can be used to help you formulate effective written public comments for the [Division 512 Harney Basin Program Rules](#) being proposed by the Oregon Water Resources Department, which will be used to manage and regulate groundwater use in the Harney Basin. The questions provided in this form address various aspects of the rules. Each question includes space to write your answer and some questions include options for you to consider. Reach out to Harmony Burright if you want help talking through or recording your comments (541-846-8863 / harmony@saltandfresh.solutions).

Public comments and related materials must be received no later than **August 7, 2025 at 5pm:**

By Email: WRD_DL_rule-coordinator@water.oregon.gov

By Mail: Kelly Mainz – Rulemaking Coordinator
Oregon Water Resources Department
725 Summer St. N.E. Suite A
Salem, OR 97301-1271

Your Name (*required*): David Glennie

Your Email (*optional*): dave@telosdevelopment.com

Your Phone (*optional*): (503) 371-8014

Note: All personally identifiable information may be made public. Please do not include this information if you do not want it included in the public record. A first name and last initial must be included to be considered.

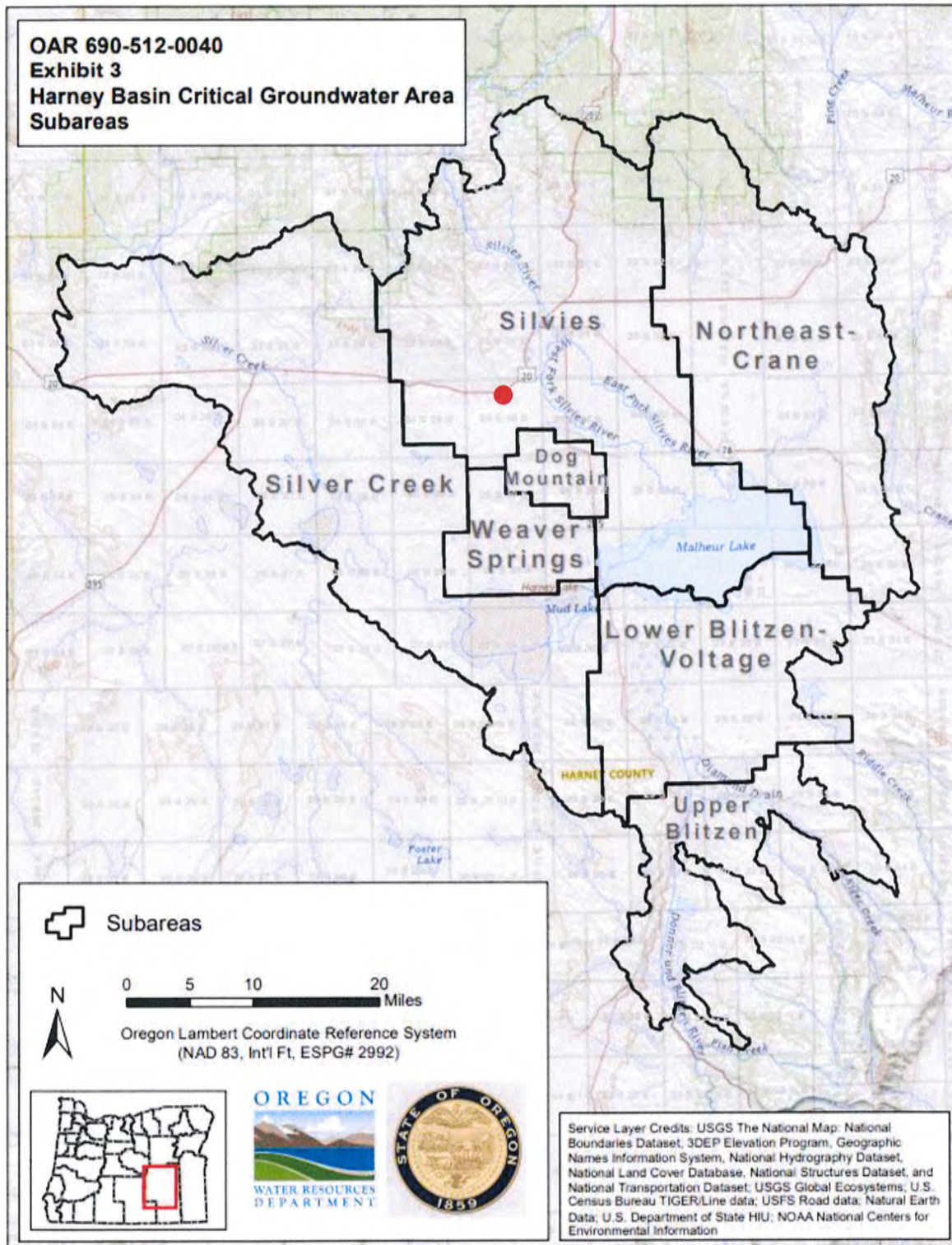
Please check all interests that apply to you:

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☐	I irrigate/grow crops with groundwater in the Harney Basin.
☐	I have a groundwater fed spring on my property that is important to me.
☒	I value groundwater contributions to the environment (e.g., springs and native vegetation).
☒	I value fish and wildlife in the basin, including those that benefit from groundwater.
☒	I use agricultural products that are produced with groundwater.
☒	I value the economic contributions of agricultural operations that use groundwater.

Question 1. Please tell us about yourself and describe why groundwater is important to you. If you use groundwater, describe how you use it.

See attached letter of August 6, 2025.

Question 2. If you use groundwater in the Harney Basin, mark with a color dot on the map provided where you use groundwater (this can be a rough approximation).



Question 3. The Water Resources Department proposes to designate the area in the map outlined in black as a **Critical Groundwater Area**, which would give them the authority to regulate or curtail/reduce groundwater use. Do you have any feedback on the boundaries or the basis for designating a Critical Groundwater Area described in the [Division 10 report](#)? ([See 609-512-0041 in the proposed rules](#))

No comment regarding boundaries.

Question 4. The map on the previous page shows the seven proposed **subareas** that the Department will use to regulate groundwater use (with different levels of regulation for each area). Based on your knowledge of the basin, are there any changes you would suggest to the boundaries? Draw them on the map and describe the reason below. ([See 609-512-0041 in the proposed rules](#))

No comment regarding boundaries.

Question 5. Please describe **groundwater conditions** where you are and what changes in groundwater levels or other groundwater changes you have observed in the last decade. If you have not observed any changes, please note that. You are also welcome to note any questions you have.

Have not observed personally. Information gained from discussions with local residents and public officials.

Question 6. If you have been or expect to be **impacted by changing groundwater conditions**, please describe how you have been impacted.

See attached letter of August 6, 2025.

Question 7. The Water Resources Department proposes to achieve the **groundwater management goal** of durably stable groundwater levels (0 feet per year of decline) by the year 2058 for the entire basin by curtailing groundwater use in 6-year intervals. Do you have feedback on the groundwater level goal and target groundwater level trend? ([See 609-512-0041 in the proposed rules](#))

	I support the groundwater management goal and target groundwater level trend as proposed.
	I support the target groundwater level trend, but I would like to see more time allowed to achieve the goal. Year achieved:
	I support the target groundwater level trend, but I would like to see the goal achieved in less time on a quicker timeline. Year achieved:
	I think minor declines are acceptable and should be allowed. Acceptable amount of decline (in total feet or feet per year):
	I would like to see groundwater levels come back up or recover. Desired amount of recovery (in feet):
	I would like to be able to see groundwater levels be allowed to fluctuate between certain levels (+/- within a certain "band" of acceptable declines)

Several objections regarding impacts on ability to provide local housing. See attached letter of August 5, 2025.

Question 8. The proposed **initial allocation** (duty) for groundwater irrigation rights is 2.5 acre feet of water per acre for acres that were irrigated (wetted acres) sometime between 2020-2024. What feedback do you have on this proposal? ([See 690-512-0060 in the proposed rules](#))

	I support the initial allocation of 2.5 acre feet for groundwater irrigation rights.
	I think the initial allocation should be greater than 2.5 acre feet. Proposed amount:
	I think the initial allocation should be less than 2.5 acre feet. Proposed amount:
	I support that wetted acres should be calculated based on use between 2020-2024.
	I think wetted acres should be calculated based on a different time period. Suggested time period:

See attached letter of August 6, 2025.

Question 9. The proposed **initial allocation** for municipal or quasi-municipal groundwater rights is 110% of water equal to 110% of the greatest single year in the previous five-year period. What feedback do you have on this proposal? ([See 690-512-0060 in the proposed rules](#))

Strenuous objections specific to impacts on available housing in Harney County. See attached letter of August 6, 2025.

Question 10. The proposed **permissible total withdrawal (PTW)** for each of the seven subareas is described below. This is the amount of water that “represents the amount of water that the Water Resources Department has determined can achieve the target groundwater level trend by 2058. The Department may not reduce groundwater pumping to a value less than the permissible total withdrawal.” Highlight your feedback about the level of reductions for each area below. A [memo](#) produced by the Department explores a different allocation between the Lower Blitzen-Voltage area and the Northeast-Crane area. What additional feedback do you have on these proposed levels of groundwater use (PTW) and reductions? ([See 690-512-0050 in the proposed rules](#))

Weaver Springs	Lower Blitzen-Voltage	Northeast-Crane	Silver Creek	Silvies	Dog Mountain	Upper Blitzen
PTW: 4,800 afy	PTW: 8,300 afy	PTW: 35,000 afy	PTW: 15,200 afy	PTW: 21,200 afy	PTW: 4,200 afy	PTW: 100 afy
75% reduction from 2018 use	39-40% reduction from 2018 use	34% reduction from 2018 use	27-28% reduction from 2018 use	15-16% reduction from 2018 use	9-10% reduction from 2018 use	0% reduction from 2018 use
Too much?	Too much?	Too much?	Too much?	Too much?	Too much?	Too much?
Too little?	Too little?	Too little?	Too little?	Too little?	Too little?	Too little?
Just right?	Just right?	Just right?	Just right?	Just right?	Just right?	Just right?
I don't know	I don't know	I don't know	I don't know	I don't know	I don't know	I don't know

See attached letter of August 6, 2025.

Question 11. The reductions in each subarea will be phased in over time following a **proposed reduction schedule**, with the largest percent of reductions made initially and later reductions phased in over 6 year intervals based on existing groundwater level trends to ensure that groundwater levels are on track to achieve the groundwater management goal. Reductions will be based on priority date using the initial allocation as a starting point. What feedback do you have on the proposed reduction schedule? ([See OAR 690-512-0070 in the proposed rules](#)).

	2028	2034	2040	2046	2052	2058
Other Subareas	40% of total reductions	30% of total reductions	15% of total reductions	10% of total reductions	5% of total reductions	Stability achieved
Weaver Springs	75% of total reductions	25% of total reductions	--	--	--	--

	I support the proposed reduction schedule (percent reductions and implementation timeframe).
	I would like to see higher reductions implemented in the near-term.
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	I would like to see 20% reductions implemented at each step.
	I would like to see all reductions implemented immediately.
	I would like to see a shorter implementation timeframe (achieve stability sooner).
	I would like to see a longer implementation timeframe (longer period to achieve stability).
	If groundwater levels have not been declining in a subarea, I would like to see a grace period during the first 6-year period where no reductions are implemented.

See attached letter of August 6, 2025.

Question 12. The Department is proposing to follow an **adaptive management approach** for implementing reductions informed by groundwater level trends. If groundwater level trends are “on track” then no adjustments would be made. This approach allows the Department to make changes to the reductions to achieve the goal. Reductions could be adjusted up or down depending on how groundwater levels change over the previous 6 years. What feedback do you have on the adaptive management approach? ([See 690-512-0080 in the proposed rules](#))

See attached letter of August 6, 2025.

Question 13. By 2028 all groundwater rights holders will be required to install a flowmeter to measure groundwater use and will be required to report groundwater use on an annual basis. A flowmeter must be installed on this timeframe in order to continue to legally use groundwater under existing rights. What feedback do you have on this requirement? Will you seek any assistance to meet this requirement? ([See 690-512-0110 in the proposed rules](#))

Not applicable to our circumstances

Question 14. Under the proposed rules the only new uses that will be allowed are those uses that do not require water rights (i.e., permit exempt uses), such as domestic and stockwater wells, and non-consumptive geothermal uses. What feedback do you have on the proposed new uses? ([See 690-512-0030 in the proposed rules](#))

See attached letter of August 6, 2025.

Question 15. Please describe what personal impacts you expect these rules might have on you (either positive or negative).

Catastrophic impacts for our business and Harney County.

Question 16. Please describe what basin impacts you expect these rules might have on the broader basin or community (either positive or negative). ([See the Fiscal Impact Statement](#)).

Return public comments by August 7, 2025 via email or mail to the Water Resources Department

Question 17. Describe actions that you would like the Department to consider that could **mitigate or minimize anticipated impacts** to you or the basin. This could include support for proposed policies or changes to the proposed policies.

Question 18. When you look into the future, what is most important to you? What do you hope to see for yourself and for the basin? What are you most concerned about?

See attached letter of August 6, 2025

Question 19. What else is important for you to communicate to the Department?

Question 20. Do you have any other feedback on the proposed rules or groundwater management?

See attached letter of August 6, 2025.

For questions about the proposed rules, please contact Kelly Mainz at the Water Resources Department (WRD_DL_rule-coordinator@water.oregon.gov or 971-718-7087).

For assistance with developing effective written comments, please reach out to Harmony Burright with the High Desert Partnership who can help (541-846-8863 or harmony@saltandfresh.solutions).

August 6, 2025

Via Electronic Delivery

Kelly Meinz
Rulemaking Coordinator
Oregon Water Resources Department
725 Summer St. NE – Suite A
Salem, OR 97301-1271

RE: **Proposed Harney County Basin Groundwater Policies**

Mr. Meinz:

The proposed groundwater restrictions in Harney County pose serious and negative outcomes for affordable housing production and community sustainability in this region. If adopted without revision, these restrictions will directly undermine the State of Oregon's housing policy priorities as articulated by Governor Tina Kotek in Executive Orders 23-02 and 23-04. Like many well-intentioned but complicated policy choices, the pending administrative rules are fraught with unintended consequences that will cripple Burns and Hines for the foreseeable future.

Our company has been working for over two years to bring affordable housing to the Harney County communities of Burns and Hines. We have gained approvals for two critical land use actions in both cities, with approved Comprehensive Plan and zone change amendments.

Though the words "affordable housing" are persistent in daily news, the terms are never defined. In this case, "affordable housing" is intended to mean a new subdivision with homes that current residents in those communities can afford to own and reside, despite the regions' Median Family Income (MFI) substantially below statewide averages.

Background:

Telos Development Co., LLC (Telos) purchased 88 acres which fronts on US Hwy 20 in 1991. The initial development included an 11 acre site for commercial development anchored by Rite Aid and McDonalds. Rite Aid closed their store in 2023. The site also includes a Veterans Affairs Health Clinic and a Grocery Outlet store. We developed a 40-unit LIHTC project known as Quail Court, which opened in 2000. About 55 acres of the remaining site was in a flood plain. An abandoned industrial railway was deeded to the county about 20 years ago, was breached, and the Army Corps of Engineers has since removed all of the remaining acreage from flood plain designation. The site, apart from 8 acres of remaining wetlands, is flat, well-located for schools and services, and suitable for residential housing, including 160 single family lots, duplex lots and about 9 acres of multi-family lots. There is no other ground in Burns and Hines that is suitable for such development.

Telos initiated discussion with both communities over two years ago. The goal was and is to provide housing options, primarily owner-occupied single family homes, at prices that are at least \$200,000 less than what is available in Central Oregon. To help meet this goal, Burns has already approved development standards that are consistent with existing conditions and will reduce single family lot pricing by +/- \$40,000 per lot. Though both communities have existing infrastructure concerns, Telos has worked cooperatively to bridge service gaps. Hines has existing water capacity to address the entire development; and Telos has offered to pay for a new "joint use" pump station as part of its development.

Telos' subdivision application is currently pending in Hines, and a similar application is expected to be filed in Burns in the coming 30 days.

Economic Impacts:

Telos has recently completed an analysis to demonstrate what this project could contribute to the property tax income to the local jurisdictions. Assuming an 8-year phased development and further assuming the property tax millage at its current rate, at buildout the project would contribute +/- \$2.7 million/year toward the existing tax districts, in addition to +/- \$12 million in property taxes in reaching buildout. Assuming modest 3% annual increases for development costs, we estimate that the housing and limited additional commercial development would add about \$150 million to the tax rolls. These estimates do not include any assumption for the accepted "multiplier effect" for collateral revenue in local communities. The industry standard in this regard is 3X, or 300%.

Governor Kotek's Housing Objectives:

Governor Kotek's Executive Order 23-04 established a statewide housing production target of 36,000 new homes per year. This goal reflects an eighty percent increase over Oregon's historical average and recognizes the urgent need to expand housing opportunities for low- and middle-income residents throughout the state. The order also created the Housing Production Advisory Council, tasked with identifying and removing barriers to housing development, especially in areas that lack sufficient supply or infrastructure. These executive directives are not limited to urban areas. They are statewide mandates designed to address the urgent and growing crisis of housing affordability and availability in every community. Rural counties like Harney County must be part of that solution; yet the proposed groundwater restrictions effectively prevent them from participating at all.

What is missing from the rulemaking analysis is the direct effect on housing. In Harney County, groundwater access is not a luxury. It is the foundational utility upon which rural housing depends. There is no alternative to municipal systems. If groundwater is unavailable, the land becomes undevelopable. That means no new single-family homes, no senior cottages, no multifamily units, no workforce housing, and no modest infill or accessory dwellings. In a place where housing is already scarce and income levels are modest, **removing the ability to build housing is not just a water policy, it is a housing moratorium by another name.**

Global Issues:

Implementing statewide policies without careful consideration of the unique circumstances of rural communities like Harney County will be yet another example of Oregon's failed "Portland First" political merry-go-round. Consider these comments as perspective:

1. In discussing the pending recommendations, local leaders routinely comment that "the problem" is related to the State's over-granting over water rights for agricultural industry. Inasmuch as construction of "city" housing in Harney County has essentially been non-existent for the past 40 years, municipalities cannot be blamed for over-consumption.
2. Capping groundwater capacities for Burns and Hines would consign those communities to long-term economic poverty. With industrial uses gutted by forest cutting policies, apart from limited agricultural opportunities and extremely limited retail and service industries, non-governmental jobs are low-paying and difficult to find. When opportunities are limited, younger generations will be forced to leave their homes to find employment.

3. Construction activity creates family-wage jobs and encourages education for the building trades. Activity begets activity. Housing construction will lead to additional opportunities in the retail and service sectors.

Summary and Recommendations:

This approach contradicts the statewide housing production goal established by Governor Kotek. It also sends a message to rural Oregon that our communities are being asked to bear the burden of policy decisions without the tools to address their consequences. Urban areas are being supported with funding, streamlining, and infrastructure investment. Meanwhile, these rules would strip Harney County of even the basic ability to provide for future residents.

1. Assessing needs for housing and agriculture should not be combined in the same analysis.
2. Comparing urban and rural needs with the same yardstick is without justification.
3. Affordable and workforce housing projects should not be subject to a blanket prohibition.
4. Existing applications should be "grandfathered".

Coordination with Oregon Housing and Community Services and the Housing Production Advisory Council is essential to identify alternative strategies that balance water conservation with housing feasibility. This includes supporting shared systems, evaluating off-site water sourcing, and treating housing development as critical infrastructure. Governor Kotek has called for urgency, coordination, and statewide action on housing. These proposed groundwater rules, in their current form, will undermine all three.

I would welcome the opportunity to meet with decision-makers in person and at their earliest opportunity. While the central issue of addressing a depleted groundwater table is necessary, the pending strategy again tells rural Oregonians they don't deserve their chance to share in Oregon's future success.

Very truly yours,



David Glennie, President

Cc: Harney County Judge William Hart
Burns City Administrator Judy Erwin
Hines City Administrator Roxanne Worley
State Senator Mike McLane
State Representative Mark Owens
(All via electronic delivery)

MEINZ Kelly A * WRD

From: Harmony Burright <harmony@saltandfresh.solutions>
Sent: Tuesday, August 12, 2025 9:09 PM
To: WRD_DL_rule-coordinator
Cc: one@gouveiaranch.com
Subject: Fwd: Comments re: Harney Basin Water Rights

Good evening,

Please see below for public comments on the Division 512 rules from Debbie Gouveia. She attempted to send them to this email address earlier today but received a response that it did not go through. She reached out to see if I could help. Debbie is copied on this message. Please confirm receipt of this email.

I have been attending both RAC and Discussion group meetings for over a year now. The amount of information that the OWRD has supplied has been massive and educational. However I do not agree or support all of OWRD's recommendations going forward in addressing Harney Basin's water problems.

1. Senior Water Rights should be honored going forward. This has been the standard in many other states and communities, and should be used in this instance. Senior Water rights have been a deciding point in purchasing and improving agricultural properties. With farmers and ranchers often times paying more in considering those rights as added value. While OWRD's plan does note water rights it is not a primary point used in their plan, but rather a 3rd or 4th consideration.
2. I believe that the information from USDA Geological study of 2018 is overly used in OWRD's rule making. This study is already outdated. Using a drought year as a starting point unfairly puts irrigators at a disadvantage. Some of the subareas do not show the decline in water levels that the study puts forth. The failure of another state dept. (Dept. of Forestry) with the massive fires of 2024, has brought record winter runoff water into the basin. This runoff will continue for many, many years going forward with the loss of the forests. But the study and OWRD has no accounting for this water.
3. Out of the 7 subareas, only 2 meet the CGWA standard. The restriction of other areas is overkill. Imposing restrictions basin wide will be devastating to farming and ranching, as well as to Burns and Hinds communities. The economic study that OWRD conducted has been shown to be very deficient in many areas, and that the true harm to the county is drastically under reported. Going forward with OWRD's recommendations as they stand will effectively KILL Harney County.
4. The state of Oregon needs to shoulder a great deal of responsibility for the water situation in Harney County. OWRD for years, if not decades, encouraged water development with wells and pivots. Advising "use your water rights or risk losing them", While knowing at the same time water levels in certain areas were being severely over drawn, did nothing to slow or restrict further development. Causing property owners to invest in improving their

property. Also, the dept allowed unpermitted irrigation wells to be nominally fined (\$200-\$300) and then granted permits. It was commonly known just put the well in and the dept will fine you a small amount and give you your permit. Those wells should be shut off first! It is a slap in the face to the many people who applied for their permits the legal way and waited years for approval . Oregon should be held accountable monetarily for the financial losses irrigators are going to suffer as well as the communities. The lack of OWRD's fiduciary duty to the people of Harney County begs for accountability and investigation.

Debbie Gouveia

----- Forwarded message -----

From: **Harmony Burright** <harmony@saltandfresh.solutions>

Date: Tue, Aug 12, 2025 at 7:32 PM

Subject: Re: Comments re: Harney Basin Water Rights

To: Debbie Gouveia <one@gouveiaranch.com>

Hi Debbie, I will try to send it in on your behalf and copy you on the email to save you a drive into town tomorrow.

Harmony Burright

541-846-8863

harmony@saltandfresh.solutions

On Tue, Aug 12, 2025, 4:20 PM Debbie Gouveia <one@gouveiaranch.com> wrote:

Harmony, yes I did but they came back. Said Gouveiaranch was not accepted and would accept any emails, so that is why I sent it to you. I also sent it to Kelly Mainz but he returned it saying he was out of town and to forward it to OWRD, but they had already rejected my email. So I was going to drive it to town tomorrow and give it to Harney Desert Planning but if you can forward it I won't have to do that.

Sent from my iPad

On Aug 12, 2025, at 4:00 PM, Harmony Burright <harmony@saltandfresh.solutions> wrote:

Thank you, Debbie. Did you also send these to the rulemaking coordinator email address?

Harmony Burright

On Tue, Aug 12, 2025, 3:27 PM Debbie Gouveia <one@gouveiaranch.com> wrote:

Sent from my iPad

> On Aug 12, 2025, at 3:00 PM, Debbie Gouveia <one@gouveiaranch.com> wrote:

>

> Juliesmithermanwrc@gmail.com

> Sent from my iPad

>

>> On Aug 12, 2025, at 2:41 PM, Debbie Gouveia <one@gouveiaranch.com> wrote:

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>> I have been attending both RAC and Discussion group meetings for over a year now. The amount of information that the OWRD has supplied has been massive and educational. However I do not agree or support all of OWRD's recommendations going forward in addressing Harney Basin's water problems.

>>

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>>

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be nominally fined (\$200-\$300) and then granted permits. It was commonly known just put the well in and the dept will fine you a small amount and give you your permit. Those wells should be shut off first! It is a slap in the face to the many people who applied for their permits the legal way and waited years for approval . Oregon should be held accountable monetarily for the financial losses irrigators are going to suffer as well as the communities. The lack of OWRD's fiduciary duty to the people of Harney County begs for accountability and investigation.

>>

>> Debbie Gouveia

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>>

>> Sent from my iPad

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Harmony Burright

541-846-8863

harmony@saltandfresh.solutions

From: Debbie Webb <campgaldebbie@gmail.com>
Sent: Friday, June 13, 2025 11:21 AM
To: WRD_DL_rule-coordinator
Subject: Objection to Division 512 Rule

Some people who received this message don't often get email from campgaldebbie@gmail.com. [Learn why this is important](#)

To Whom It May Concern,

I respectfully oppose the mandatory monitoring requirements for our private well as outlined in the recent Division 512 Rule amendments for the Harney Basin and other groundwater-regulated areas.

While I recognize the importance of sustainable water management, I strongly object to the one-size-fits-all approach that places undue burdens on individual landowners, particularly those of us who use groundwater responsibly and within the historical norms of our region.

1. Violation of Property Rights

Requiring metering, reporting, and potential inspection of privately owned wells infringes on our long-established water rights. Many of us have used our wells for decades without exceeding legal allocations. Mandating state oversight without evidence of abuse is an overreach that sets a dangerous precedent for property rights erosion.

2. Unfair Financial Burden

The installation and maintenance of flowmeters, telemetry, and data reporting systems can cost thousands of dollars—an expense many small landowners and family farms simply cannot afford. These rules disproportionately harm those least able to absorb new regulatory costs, especially in already economically strained rural areas.

3. Presumption of Guilt

The rule presumes that all users contribute equally to groundwater declines and must be regulated identically. This is unjust. Responsible water users should not be penalized for the actions of a few high-volume permit holders or for systemic mismanagement that has occurred over decades.

4. Lack of Local Control

Water management decisions should prioritize local knowledge and stakeholder participation. Imposing a top-down system with minimal local governance input strips communities of their right to self-determination. Voluntary, incentive-based conservation programs developed collaboratively would be far more effective and publicly supported.

5. Scientific Uncertainty

The state's groundwater models and estimates of recharge versus withdrawal contain uncertainties that many hydrogeologists and water users have called into question. Until the data is independently verified, it is unjustified to impose harsh monitoring mandates based on projections rather than observed overuse at individual sites.

Conclusion

In short, mandatory well monitoring under Division 512 undermines rural livelihoods, ignores local stewardship, and oversteps the appropriate role of state regulation. We ask that OWRD revise this rule to respect private rights, pursue voluntary data-sharing agreements, and focus enforcement on known over users rather than imposing blanket surveillance on all.

Sincerely,

Mark and Debbie Webb and
Steens Mountain Wilderness Resort
35676 Resort Lane
Frenchglen, OR 97736

MEINZ Kelly A * WRD

From: Deborah Arntz <deb.arntz@outlook.com>
Sent: Wednesday, August 6, 2025 7:04 PM
To: WRD_DL_rule-coordinator
Subject: Harney Basin Proposed Groundwater Policies

Some people who received this message don't often get email from deb.arntz@outlook.com. [Learn why this is important](#)

Kelly Mainz,

Harney County does not need groundwater management. The weather manipulation in Oregon needs to be stopped. That is what has created systemic drought in Harney County. The chemtrails have been evident for years. End the weather manipulation and water will be restored to Oregon. It is already improving with the election of Donald Trump. We had a really wet spring with flooding that occurred here in the Burns area. That has to have had an impact on the water table. As time goes on the weather manipulation stops and our weather gets back to the way God meant it to be, our water will be fully restored. Many states have proposed legislation to outlaw weather manipulation. Let's work on that problem.

The taking of water from people of Oregon is unconstitutional. We are entitled to Life, Liberty and the Pursuit of Happiness given to us by God and God alone and enforced by the Declaration of Independence. No man can take that away unless they perform an unconstitutional act. That is treasonous. Water is Life to mankind. Taking it away is an unconstitutional act.

Deborah Arntz
Burns, Oregon.

HARTT Laura A * WRD

From: Denise Tschann <dmtschann@gmail.com>
Sent: Tuesday, August 12, 2025 12:00 PM
To: WRD_DL_rule-coordinator
Subject: Please Adopt Strong Rules to Stabilize Groundwater Levels in the Harney Basin

You don't often get email from dmtschann@gmail.com. [Learn why this is important](#)

Dear Kelly Mainz,

Dear Oregon Water Resources Department,

I am writing about the rules the Oregon Water Resources Department (OWRD) recently proposed to address groundwater declines in the Harney Basin.

I support stabilizing groundwater levels in the Harney Basin, which would provide the basin with a more sustainable future and help prevent additional impacts to groundwater dependent ecosystems such as springs, streams, wetlands, and native vegetation. It would also reduce the number of existing domestic wells that would be dried up due to irrigation pumping.

I disagree with the permitting of the gold/silver water pressure extraction in the region. It will disturb and reduce even more of the water necessary for the region.

I offer the following additional comments:

1. I place a high value on the springs, streams, and other groundwater dependent ecosystems in the Harney Basin, and all of the fish, wildlife, and plants that rely on these ecosystems.
2. These groundwater dependent ecosystems have already been significantly degraded from the over-pumping of groundwater. Please ensure that these systems are protected in the Division 512 rules for the Harney Basin.
3. I support the requirement in the Proposed Rules for water use measurement and reporting on all non-exempt groundwater rights in the basin.
4. OWRD should not adopt rules that would dry up additional existing domestic wells, especially when it has no viable program in place to help these residents who will lose their drinking water.
5. Please consider strengthening the Proposed Rules by adopting a tighter schedule for imposing the lower pumping amounts ("Permissible Total Withdrawals"). I encourage a shorter timeline than the proposed 30 years to achieve stable groundwater levels in light of the major declines that have already occurred, and the significant impacts to groundwater dependent ecosystems and domestic wells that this has already caused.

Thank you for your kind attention and consideration of my comments.

Denise Tschann

Sincerely,
Denise Tschann

659 Fordyce St
Ashland, OR 97520

MEINZ Kelly A * WRD

From: dennisr9900@earthlink.net
Sent: Thursday, August 7, 2025 8:33 AM
To: WRD_DL_rule-coordinator
Subject: Support of OWRD Harney Basin Water Management Plan

Some people who received this message don't often get email from dennisr9900@earthlink.net. [Learn why this is important](#)

I fully support OWRD efforts for adopting strong rules to sustain groundwater in the Harney Basin. I'm a land/home owner, near Rock Creek in the northern portion of the Harney Basin which has seen a tremendous increase in the number of alfalfa pivots, at least 10 new pivots, in our area in the last 5-7 years. Our ground water levels were fairly constant until the newest pivots were added surrounding our property. Since that time we've seen a consistent annual drop in our domestic well water levels, losing about 5 feet per year. At this rate of decline we'll experience a total loss of water at our domestic well.

OWRD needs to limit the pumping of groundwater to achieve stable groundwater levels in the Harney Basin.

Dennis Gretsches

40641 Hwy 20 E.

Burns, OR. 97720

HARTT Laura A * WRD

From: donald doverspike <doverspikelivestock@gmail.com>
Sent: Tuesday, August 12, 2025 2:41 PM
To: WRD_DL_rule-coordinator
Subject: Harney basin Public Comment
Attachments: water resources public comment.docx

Some people who received this message don't often get email from doverspikelivestock@gmail.com. [Learn why this is important](#)
please see attached

Donald Doverspike

Hotchkiss Company Inc.

30552 Hotchkiss Ln.

Burns, OR 97720

July, 25th 2025

Oregon Water Resources Department

Attn: Division 512 Rulemaking

725 Summer St NE, Suite A

Salem, OR 97301

Re: Opposition to Inclusion of Silver Creek in Proposed Division 512 Critical Groundwater Area

To the Oregon Water Resources Commission and Department Staff,

I am writing in response to the proposed amendments to OAR 690, Division 512 regarding Critical Groundwater Area (CGWA) and Serious Water Management Problem Area (SWMPA) designations in the Malheur Lake Administrative Basin. While I appreciate the Department's efforts to address legitimate groundwater concerns in parts of the basin, I strongly oppose the inclusion of the **Silver Creek** area within the proposed CGWA boundaries.

1. Silver Creek does not meet statutory CGWA criteria.

Under ORS 537.730–537.735, CGWA designation is warranted only where substantial evidence demonstrates that groundwater levels are declining at a rate or extent that poses a threat to the long-term availability of the resource or to other water rights. The available hydrogeologic data for Silver Creek does not show a sustained or significant rate of decline that would meet this threshold.

2. The rate of decline is not sufficient to justify CGWA status.

Long-term monitoring data from Silver Creek wells indicate minor fluctuations and seasonal variation, not the persistent downward trend observed in other parts of the basin. The Department's own maps and hydrographs show this distinction. Applying the same restrictions here as in areas with steep declines is not scientifically justified.

3. No wells are out of compliance in Silver Creek.

Records show that water users in Silver Creek are operating within their permitted allocations. There is no evidence of chronic over-pumping or violations that would necessitate CGWA intervention.

4. Our operation spans multiple sub-basins and is not a high-volume commercial water user.

Our farm and ranch operations fall within **multiple sub-basins**, including Silver Creek, which

means that overbroad boundaries would impose disproportionate burdens on us without addressing actual resource concerns. We raise hay primarily for **our own livestock consumption**, very rarely selling hay commercially. This means our groundwater use directly supports on-farm feed needs, not a large-scale export market, and is already managed conservatively to match our livestock operation.

5. We have a long history of sustainable land and water stewardship.

I am the **fifth generation** to live and work on this land, now raising the **sixth generation** here. For over a century, my family has depended on responsible management of both surface and groundwater resources. Our livelihood, heritage, and future are tied directly to keeping this land productive while preserving it for the generations to come.

6. Lessons from other agencies.

Over our century of management here, we have watched other agencies implement policies prematurely and without adequate local understanding. The U.S. Forest Service's fire suppression and forest mismanagement policies have contributed to the catastrophic megafires we see today. The Oregon Department of Fish and Wildlife's handling of sage-grouse and wolf policies also came too early, before adequate groundwork and stakeholder engagement, resulting in unintended harm and loss of trust. Please do not repeat those mistakes with Division 512. Get this right the first time—base it on accurate, site-specific science, and only implement measures once they truly fit the conditions on the ground.

7. Over-inclusive boundaries undermine public trust and effective management.

Including areas like Silver Creek, which lack the conditions justifying CGWA designation, risks diverting resources and regulatory attention away from areas that do meet the statutory criteria. Overbroad regulation will also have unnecessary economic and operational impacts on compliant water users like us.

Request

I respectfully request that the proposed CGWA boundaries for Division 512 be revised to exclude Silver Creek. The Department should base such designations strictly on areas that meet the statutory and hydrological criteria for critical status.

Thank you for the opportunity to comment and for your commitment to science-based water management. I look forward to seeing a final rule that reflects the actual data for each subarea.

Sincerely,
Donald Doverspike

President
Hotchkiss Co.

MEINZ Kelly A * WRD

From: Donna Harris <kermit.donna@gmail.com>
Sent: Saturday, August 9, 2025 4:57 PM
To: WRD_DL_rule-coordinator
Subject: Please Adopt Strong Rules to Stabilize Groundwater Levels in the Harney Basin

Dear Kelly Mainz,

Dear Oregon Water Resources Department,

I am writing about the rules the Oregon Water Resources Department (OWRD) recently proposed to address groundwater declines in the Harney Basin.

I support stabilizing groundwater levels in the Harney Basin, which would provide the basin with a more sustainable future and help prevent additional impacts to groundwater dependent ecosystems such as springs, streams, wetlands, and native vegetation. It would also reduce the number of existing domestic wells that would be dried up due to irrigation pumping.

I offer the following additional comments:

1. I place a high value on the springs, streams, and other groundwater dependent ecosystems in the Harney Basin, and all of the fish, wildlife, and plants that rely on these ecosystems.
2. These groundwater dependent ecosystems have already been significantly degraded from the over-pumping of groundwater. Please ensure that these systems are protected in the Division 512 rules for the Harney Basin.
3. I support the requirement in the Proposed Rules for water use measurement and reporting on all non-exempt groundwater rights in the basin.
4. OWRD should not adopt rules that would dry up additional existing domestic wells, especially when it has no viable program in place to help these residents who will lose their drinking water.
5. Please consider strengthening the Proposed Rules by adopting a tighter schedule for imposing the lower pumping amounts ("Permissible Total Withdrawals"). I encourage a shorter timeline than the proposed 30 years to achieve stable groundwater levels in light of the major declines that have already occurred, and the significant impacts to groundwater dependent ecosystems and domestic wells that this has already caused.

Every year for the last 5-6 years we delight in traveling to photograph the migratory birds that depend on Malheur National Wildlife Refuge. It would be tragic to have this national treasure threatened by existing groundwater issues.

Thank you for your kind attention and consideration of my comments.

Sincerely,
Donna Harris
55785 Lost Rider Loop
Bend, OR 97707

HARTT Laura A * WRD

From: MILTENBERGER Sheena * DSL
Sent: Monday, August 11, 2025 2:46 PM
To: WRD_DL_rule-coordinator
Cc: MCKERNAN Amber * DSL
Subject: Div 512 Comments - OR Department of State Lands
Attachments: ORDeptOfStateLands-Div512-Comments.pdf

Please find attached Oregon Department of State Lands Comments on Proposed Division 512 Administrative Rules.

Sheena Miltenberger

Rangeland Manager | Real Property Program

Oregon Department of State Lands

951 SW Simpson Ave., Suite 104 | Bend, OR 97702

Office: 541-388-6072 | Cell: 541-480-3421

www.oregon.gov/dsl



Oregon

Tina Kotek, Governor

Department of State Lands

951 SW Simpson Ave., Suite #104

Bend, OR 97702

(541) 388-6112

FAX (541) 388-6480

www.oregon.gov/dsl

State Land Board

August 11, 2025

Tina Kotek

Governor

Kelly Mainz, Rulemaking Coordinator
Oregon Water Resources Department
725 Summer St. N.E. Suite A
Salem, OR 97301-1271

Tobias Read

Secretary of State

Re: Comment on Proposed Rules; Division 512 Harney Basin Program Rules

Elizabeth Steiner

State Treasurer

The Oregon Department of State Lands (DSL) owns and manages approximately 19,600 acres within the proposed administrative boundary of the Harney Basin Critical Groundwater Area. Of this, DSL owns groundwater rights for irrigation on approximately 627 acres of agricultural land. DSL is constitutionally obligated to generate revenue off the land it holds in trust for the benefit of the Common School Fund. The Common School Fund contributes an average of \$71.8 million annually to public schools in the state and \$479,529.00 specifically to Harney County schools from 2022-2025.

While most of the lands owned by DSL in the Harney Basin are classified as rangelands, the 627 acres of irrigated agricultural lands are significantly more valuable for revenue generation. Under the Division 512 Proposed Rules, DSL is projected to lose almost \$1,000,000 in revenue from agricultural lands in the next 30 years and will lose more in the future if DSL loses its water rights permanently. Losses in revenue to the Common School Fund results in less monies for local school districts annually. It should also be noted that OWRD did not assess the fiscal and administrative impacts to other state agencies as required in the proposed rulemaking Secretary of State filings.

The requirements under 690-512-0110(6) regarding installing totalizing flowmeters will also have financial impacts to DSL and Lessees. DSL has previously been required to install flowmeters on wells for which we have a groundwater right. DSL has experienced many issues with keeping these operational. This will have significant financial and administrative impacts for DSL and lessees should the existing flowmeters need to be upgraded based on the standard listed. Availability for contractors to install these meters may also be limited.

The provisions in the proposed rules (690-512-0060) limiting any new groundwater uses for industrial/commercial or municipal/quasi-municipal uses will also limit DSL's ability to fulfill its obligation to lease state lands for the highest and best use. Several parcels of state land within the proposed administrative boundary of the Harney Basin Critical Groundwater Area are in areas that have previously received interest in renewable energy uses. These types of developments would be beneficial to the community and economy of the Harney Basin, while contributing potentially millions of dollars to the Common School Fund.

Many of DSL's Grazing/Forage lessees are also farming hay and winter feed within the Harney Basin Critical Groundwater Area. Through these rules, DSL's Lessee's will also be facing a reduction in ability and capacity to raise hay and crops for their livestock. This may in turn result in increased use and grazing pressure on undeveloped rangelands within the critical groundwater area boundaries. Additionally, as water reductions are implemented, agricultural producers within the basin will likely have to reduce livestock herd sizes, resulting in loss of revenue for producers and by extension, DSL as well as some of the producers and DSL lessee's may not be able to stay in business. If DSL loses lessees in the basin, the lands most suitable for grazing may not be able to be re-leased, and other potential future uses would also be restricted. These properties therefore will experience a reduction in value to the Common School Fund which may result in the Department having to evaluate these properties for disposal.

Thank you for taking these comments into consideration.

Sincerely,



Amber McKernan
Real Property Program Manager
Land Management Division
Oregon Department of State Lands

PROPOSED HARNEY BASIN GROUNDWATER POLICIES – WRITTEN COMMENT FORM

This written comment form can be used to help you formulate effective written public comments for the [Division 512 Harney Basin Program Rules](#) being proposed by the Oregon Water Resources Department, which will be used to manage and regulate groundwater use in the Harney Basin. The questions provided in this form address various aspects of the rules. Each question includes space to write your answer and some questions include options for you to consider. Reach out to Harmony Burright if you want help talking through or recording your comments (541-846-8863 / harmony@saltandfresh.solutions).

Public comments and related materials must be received no later than **August 7, 2025 at pm:**

By Email: WRD_DL_rule-coordinator@water.oregon.gov

By Mail: Kelly Mainz – Rulemaking Coordinator
Oregon Water Resources Department
725 Summer St. N.E. Suite A
Salem, OR 97301-1271

Your Name (*required*): Erick Keerins _____
Your Email (*optional*): _____
Your Phone (*optional*): _____
Note: All personally identifiable information may be made public. Please do not include this information if you do not want it included in the public record. A first name and last initial must be included to be considered.

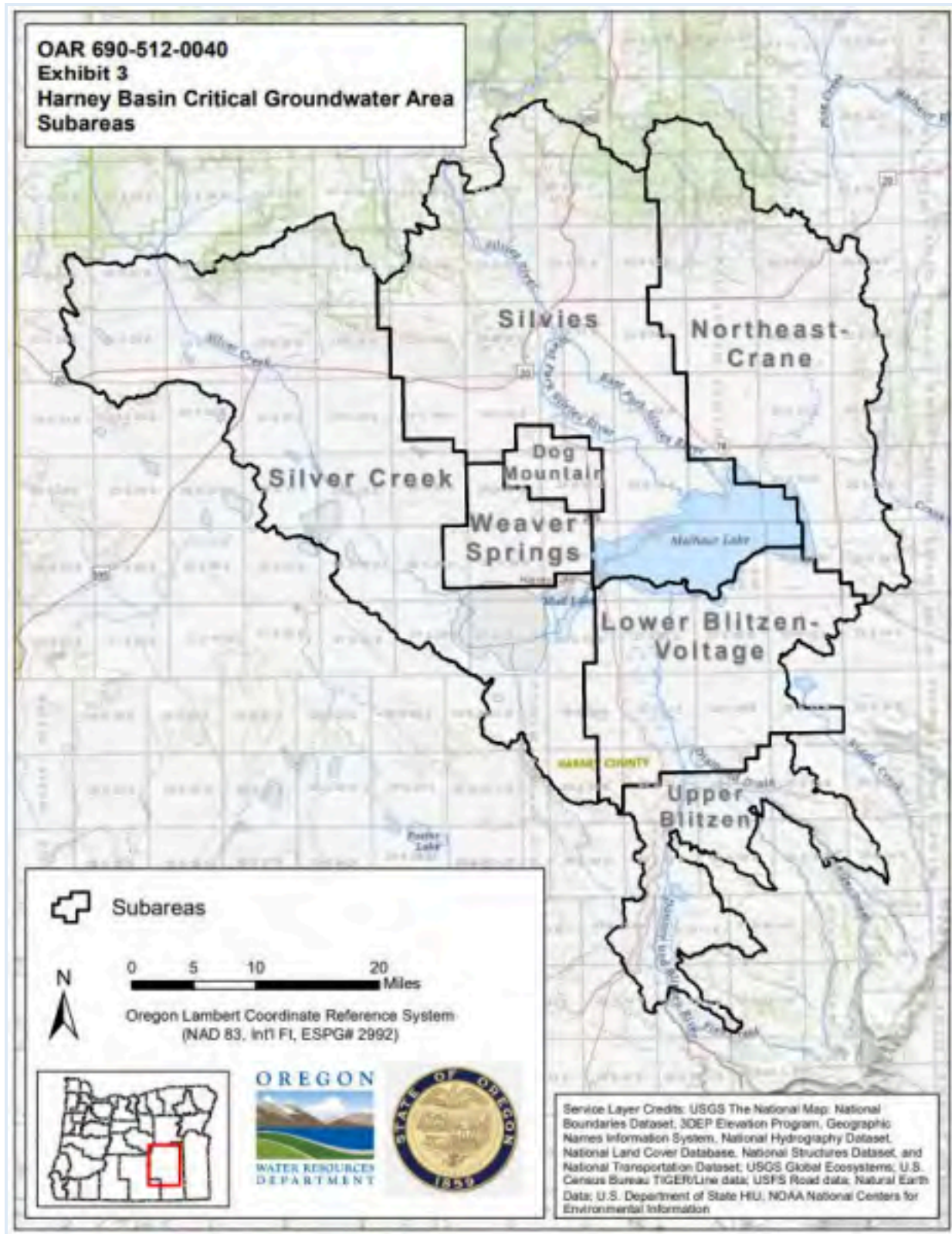
Please check all interests that apply to you:

☒	I have at least one well that supplies groundwater to my home for domestic purposes.
☒	I have at least one well that that supplies groundwater to my livestock.
☐	I have at least one well that supplies groundwater to a non-farm business (e.g., store).
☒	I irrigate/grow crops with groundwater in the Harney Basin.
☐	I have a groundwater fed spring on my property that is important to me.
☒	I value groundwater contributions to the environment (e.g., springs and native vegetation).
☒	I value fish and wildlife in the basin, including those that benefit from groundwater.
☒	I use agricultural products that are produced with groundwater.
☒	I value the economic contributions of agricultural operations that use groundwater.

Question 1. Please tell us about yourself and describe why groundwater is important to you. If you use groundwater, describe how you use it.

After 22 years of service in the United States Coast Guard my family decided to settle down in Oregon in 2021. Harney County ended up being the best fit and we purchased a small farm/ranch in the Lower Blitzen Subarea. It is a known fact that without water death becomes imminent. Thus we picked an area farther from town knowingly embracing the longer commute to ensure our children would be able to participate in the community because the water table was stable and had quality water. We use the groundwater to support our livestock, to irrigate our crops, and to support human life. Without quality groundwater the desert land would not support my family, its activities or future dreams.

Question 2. If you use groundwater in the Harney Basin, mark with a color dot on the map provided where you use groundwater (this can be a rough approximation).



2

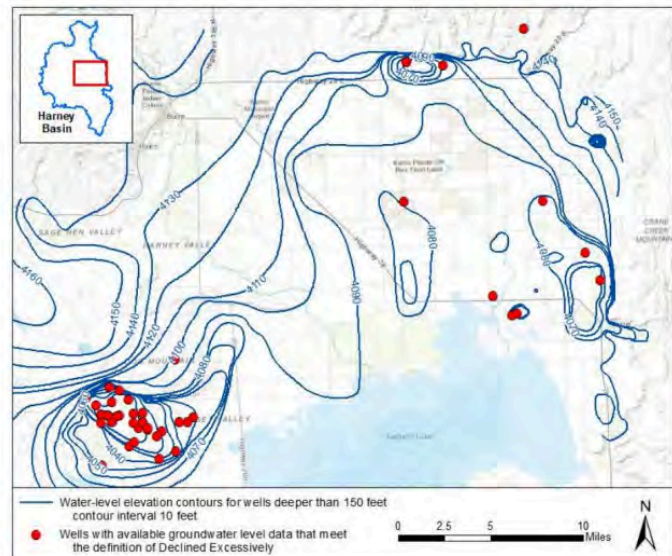
Return public comments by August 7, 2025 via email or mail to the Water Resources Department

Question 3. The Water Resources Department proposes to designate the area in the map outlined in black as a **Critical Groundwater Area**, which would give them the authority to regulate or curtail/reduce groundwater use. Do you have any feedback on the boundaries or the basis for designating a Critical Groundwater Area described in the [Division 10 report](#)? (See 609-512-0041 in the proposed rules)

Below slide answers the question for what area should be included as a **Critical Groundwater Area**.

Declined Excessively

- Greater than 50 ft of decline from highest known levels
- Data on wells meeting this threshold is limited by:
 - Lack of **historic** measurements for wells
 - Lack of **current** measurements for wells
- More wells expected to reach this threshold within several years



Map A and Map B shows there are some subareas that have met the definition, but a large portion of the subareas do not meet the requirements and should not be forced to comply with the proposed curtailments as per 512 rules. See below maps for visual explanation.

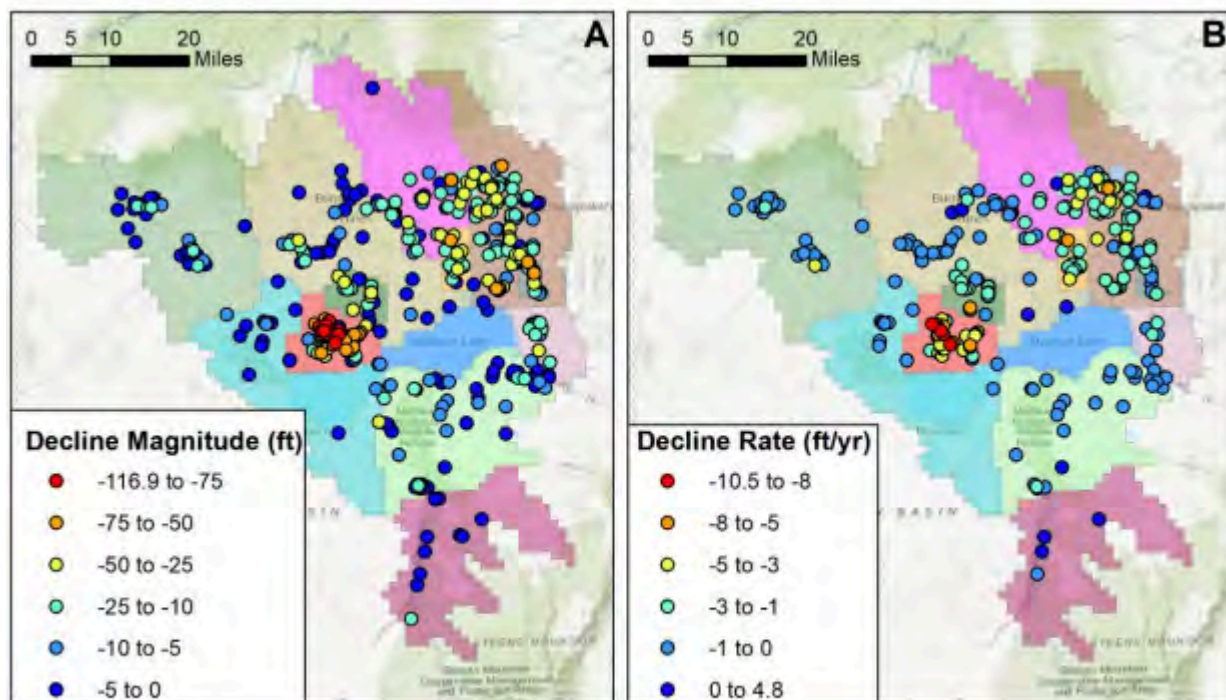
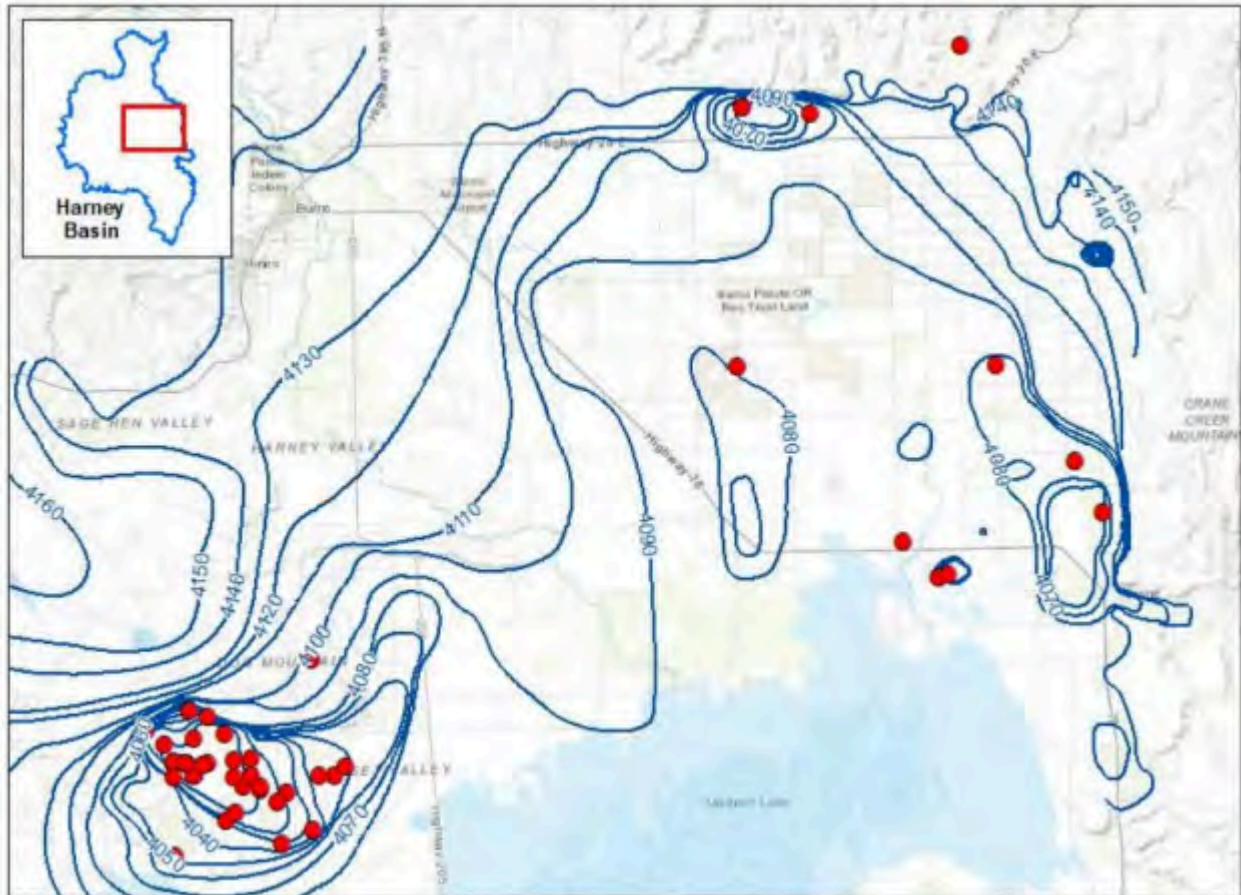


Figure 2: Maps showing the distribution of decline magnitude values (A) and decline rate values (B) across the proposed Harney Basin Critical Groundwater Area.

Question 4. The map on the previous page shows the seven proposed subareas that the Department will use to regulate groundwater use (with different levels of regulation for each area). Based on your

knowledge of the basin, are there any changes you would suggest to the boundaries? Draw them on the map and describe the reason below. ([See 609-512-0041 in the proposed rules](#))



Red dots are wells that have available groundwater level data that meet the definition of declined excessively. The area South of Malheur Lake and North West do not have well data to support the definition of declined excessively and should not be included in critical ground water 512 rules. Note: Department admits it has a lack of historic measurements and current measurements.

Question 5. Please describe groundwater conditions where you are and what changes in groundwater levels or other groundwater changes you have observed in the last decade. If you have not observed any changes, please note that. You are also welcome to note any questions you have.

First, my family has not lived in Harney County for the last decade and do not have first hand knowledge of groundwater changes, but I grew up in Grant County on a Century Ranch and the local knowledge was if you want good water go to areas around Princeton or Riley. Stay away from Crane and Crane Buchanan areas. Later it was also well known that the Weaver Springs and Dog Mountain areas had declining water tables. It is my recollection that "Old Timer" Sunny Brown talked about how the wonderful sandy soils around Crane allowed for easy farming, but the groundwater was not adequate. He always joked that a few rocks in a field may make it harder to farm, but it is an excellent indication there is good groundwater below the surface and he felt it would raise better Alfalfa. How true is his statement?

Question 6. If you have been or expect to be impacted by changing groundwater conditions, please

describe how you have been impacted.

Currently my family has not been impacted by changing groundwater conditions, but the stress and hardships of not knowing what the State is going to do or how it is going to react to the critical water situation has caused extreme concern and stress. The Groundwater Level Trends analysis performed in 2024 show that the median overall decline is -2.9 ft and the median rate of decline is -0.3 ft/yr for the Lower Blitzen Voltage subarea. Notably far below the range of what is considered reasonably stable by the Department. Reviewed well logs indicated an overall trend of decline, but they also indicate the annual precipitation influences rise and fall of static levels. Farther to the North the Arctic Ice is receding would that not be an indication that overall downward trends would be expected by some degree. Declining static water levels is not of no concern, but it does not rate a 39% proposed curtailment for the subarea.

Question 7. The Water Resources Department proposes to achieve the **groundwater management goal** of durably stable groundwater levels (0 feet per year of decline) by the year 2058 for the entire basin by curtailing groundwater use in 6-year intervals. Do you have feedback on the groundwater level goal and target groundwater level trend? ([See 609-512-0041 in the proposed rules](#))

	I support the groundwater management goal and target groundwater level trend as proposed.
	I support the target groundwater level trend, but I would like to see more time allowed to achieve the goal. Year achieved:
	I support the target groundwater level trend, but I would like to see the goal achieved in less time on a quicker timeline. Year achieved:
	I think minor declines are acceptable and should be allowed. Acceptable amount of decline (in total feet or feet per year):
	I would like to see groundwater levels come back up or recover. Desired amount of recovery (in feet):
X	I would like to be able to see groundwater levels be allowed to fluctuate between certain levels (+/- within a certain "band" of acceptable declines)

Band depends on historic data for each area and will need to be gathered with static water level data taken in March. The Department acknowledged the lack of data, but has used a model to predict static water level trends in the future. Only one known source has been able to foretell the future and that is the LORD.

Question 8. The proposed **initial allocation** (duty) for groundwater irrigation rights is 2.5 acre feet of water per acre for acres that were irrigated (wetted acres) sometime between 2020-2024. What feedback do you have on this proposal? ([See 690-512-0060 in the proposed rules](#))

	I support the initial allocation of 2.5 acre feet for groundwater irrigation rights.
X	I think the initial allocation should be greater than 2.5 acre feet. Proposed amount: 3 acre feet
	I think the initial allocation should be less than 2.5 acre feet. Proposed amount:
	I support that wetted acres should be calculated based on use between 2020-2024.
	I think wetted acres should be calculated based on a different time period. Suggested time period:

Irrigation permits/certificates allow duty of 3 acre feet. The Department should not regulate less duty without a voluntary agreement. The curtailment of 2.5 acre feet would allow more paper water to allow additional junior water users to stay in operation. If the Department is going to calculate based on wetted acres then each operation has a max application rate based on available water. Per permit or certification irrigators provide their water used each year. If the State is going to review wetted acres then it is not a big lift to calculate total water used and allocate as used with a margin of greater or less. Each year I have reported a different amount of water used and crop rotation. .

Question 9. The proposed **initial allocation** for municipal or quasi-municipal groundwater rights is 110% of water equal to 110% of the greatest single year in the previous five-year period. What feedback do you have on this proposal? ([See 690-512-0060 in the proposed rules](#))

Quasi-municipal or municipal groundwater rights should have some certainty of knowing that they have water. Similar to irrigators, the municipality's water usage fluctuates each year and their water consumption should not affect irrigators in my opinion. But the fact remains Municipal and quasi-municipal entities use water and should be allocated per containment guidelines if they meet the critical ground water criteria.

Question 10. The proposed **permissible total withdrawal (PTW)** for each of the seven subareas is described below. This is the amount of water that “represents the amount of water that the Water Resources Department has determined can achieve the target groundwater level trend by 2058. The Department may not reduce groundwater pumping to a value less than the permissible total withdrawal.” Highlight your feedback about the level of reductions for each area below. A [memo](#) produced by the Department explores a different allocation between the Lower Blitzen-Voltage area and the Northeast-Crane area. What additional feedback do you have on these proposed levels of groundwater use (PTW) and reductions? ([See 690-512-0050 in the proposed rules](#))

Weaver Springs	Lower Blitzen Voltage	Northeast Crane	Silver Creek	Silvies	Dog Mountain	Upper Blitzen
PTW: 4,800 afy	PTW: 8,300 afy	PTW: 35,000 afy	PTW: 15,200 afy	PTW: 21,200 afy	PTW: 4,200 afy	PTW: 100 afy

75% reduction from 2018 use	39-40% reduction from 2018 use	34% reduction from 2018 use	27-28% reduction from 2018 use	15-16% reduction from 2018 use	9-10% reduction from 2018 use	0% reduction from 2018 use
Too much?	Too much?	Too much?	Too much?	Too much?	Too much?	Too much?
Too little?	Too little?	Too little?	Too little?	Too little?	Too little?	Too little?
Just right?	Just right?	Just right?	Just right?	Just right?	Just right?	Just right?
I don't know	I don't know	I don't know	I don't know	I don't know	I don't know	I don't know

The data supports water curtailment in Weaver Springs, Northeast Crane, and Dog Mountain. To what level of curtailment I am not sure. The 512 proposed adaptive management over 30 years is a good idea. Somehow these areas are over allocated and are unable to support the existing water allocation. The Department has not reduced groundwater usage and domestic wells have been affected in Northern Crane, Dog Mountain and Weaver Springs. To propose reduction suggests a leadership failure on the Departments behalf. The water table has dropped in Weaver Springs to the point of self regulation because of total lack of water. Regarding the other four subareas, Lower Blitzen Voltage, Silver Creek, Silvies, Upper Blitzen the PTW's do not represent the existing data nor due they meet the Critical Ground water definition. In reality some water curtailment may need to take place, but the Department should work with irrigators to develop a voluntary agreement vs curtailing junior water rights users. Mr. Mark Owens discussed model B that would curtail water in the subareas that meet the definition of critical ground water. I propose the Department to review Model B for the PTW values for Harney County Basin subareas of Weaver Springs, Dog Mountain, and Northeast Crane.

Question 11. The reductions in each subarea will be phased in over time following a **proposed reduction schedule**, with the largest percent of reductions made initially and later reductions phased in over 6 year intervals based on existing groundwater level trends to ensure that groundwater levels are on track to achieve the groundwater management goal. Reductions will be based on priority date using the initial allocation as a starting point. What feedback do you have on the proposed reduction schedule? ([See OAR 690-512-0070 in the proposed rules](#)).

	2028	2034	2040	2046	2052	2058
Other Subareas	40% of total reductions	30% of total reductions	15% of total reductions	10% of total reductions	5% of total reductions	Stability achieved
Weaver Springs	75% of total reductions	25% of total reductions	--	--	--	--

	I support the proposed reduction schedule (percent reductions and implementation timeframe).
	I would like to see higher reductions implemented in the near-term.
	I would like to see lower reductions implemented in the near-term.
	I would like to see 20% reductions implemented at each step.
	I would like to see all reductions implemented immediately.
	I would like to see a shorter implementation timeframe (achieve stability sooner).
	I would like to see a longer implementation timeframe (longer period to achieve stability).
X	If groundwater levels have not been declining in a subarea, I would like to see a grace period during the first 6-year period where no reductions are implemented.

The Department should work with irrigators and encourage voluntary agreements due to the Department's inability to enforce existing regulation. The "Saying Slow is Fast and Fast is Slow may get a more harmonious outcome. The groundwater levels did not decline overnight and curtailment will not increase static water levels drastically either. Working with irrigators is a complex problem that developed over time and should be addressed with time.

Question 12. The Department is proposing to follow an adaptive management approach for implementing reductions informed by groundwater level trends. If groundwater level trends are "on track" then no adjustments would be made. This approach allows the Department to make changes to the reductions to achieve the goal. Reductions could be adjusted up or down depending on how groundwater levels change over the previous 6 years. What feedback do you have on the adaptive management approach? ([See 690-512-0080 in the proposed rules](#))

I support the adaptive management approach for implementing reductions. Additionally I would encourage the Department to reach out to other Departments to coordinate supplemental funding by dryland cropping or purchasing water rights. Each farm/ranch has a unique management style for their operation and a one size fits all solution is not realistic nor fair. Land owners invested in drilling a well and developing the ground, but they did not expect their investment to be curtailed by the Department.

Question 13. By 2028 all groundwater rights holders will be required to install a flowmeter to measure groundwater use and will be required to report groundwater use on an annual basis. A flowmeter must be installed on this timeframe in order to continue to legally use groundwater under existing rights. What feedback do you have on this requirement? Will you seek any assistance to meet this requirement? ([See 690-512-0110 in the proposed rules](#))

Working with the well operators and their electric utilities Kilowatt usage the amount of water consumption can be calculated. Requiring meters on all POU wells only makes it easier to report water flow and usage. I do not support the requirement, but I would highly encourage water users to add water meters if they do not have one for ease of reporting and gathering data.

Question 14. Under the proposed rules the only new uses that will be allowed are those uses that do not require water rights (i.e., permit exempt uses), such as domestic and stockwater wells, and non consumptive geothermal uses. What feedback do you have on the proposed new uses? ([See 690-512-](#)

I support the Departments no additional water used in the Critical Ground Water areas that meet the definition. The Department has granted water transfers and those permits should be allowed to be completed, because the Department has data to support the additional acres being developed or the permits would not have been issued. To curtail those permits is unfair and not in alignment with the current regulation.

Question 15. Please describe what personal impacts you expect these rules might have on you (either positive or negative).

Positive impacts are hard to quantify, because the 512 proposed curtailments will affect multiple levels of the community. One pro is senior water right holders' property will go up in value even if the wells are of poor quality or adequate for irrigation because they are ensured a duty of 2.5 ft/yr.

Cons: Property value will be decreased significantly. Landowners 401K investment into the land will be eliminated. The generational ranchers and farms will be eliminated. It is hard to start farming and ranching without the Department adding in the failure. Dreams will be shattered. The ranching farming culture will be curtailed and suppressed.

Question 16. Please describe what basin impacts you expect these rules might have on the broader basin or community (either positive or negative). ([See the Fiscal Impact Statement](#)).

The 512 rules as proposed will cripple Harney County. The trickle down effect will also go beyond the life lines of the country. Agriculture products from this county are shipped throughout the United States and world wide. Discussing the curtailment with my spouse her first thought was when do we need to put a FORE SALE sign up. What projects are preventing a SALE? This is the mindset of members of the community. Get out before the 512 rule is implemented in 2028. The Department has created hardships before the 512 rules are even being implemented. Why would youth who have been raised in the county stay? My oldest child who entered the workforce two years ago as of writing this has no intention of residing in Harney County because the stability is so uncertain for future job employment. He is moving tomorrow and looking for employment elsewhere. Why should I stay in Harney County if all of my children are going to be forced to move to find employment? 30% +/- ground water curtailment (depends on the 6 year check points) is going to devastated schools, public works, cities, health care, police, poverty level members, small and large businesses, and the list goes on. Who is not going to be effected is the more appropriate question to ask. Harney County is a desert oasis with very low population levels per square mile and the Department proposed 512 rules will ensure this to be a true statement now and in the future.

Question 17. Describe actions that you would like the Department to consider that could mitigate or minimize anticipated impacts to you or the basin. This could include support for proposed policies or changes to the proposed policies.

I would like to believe that the Department has the leadership, technical skills, and understanding to listen to the members in Harney County. Multiple members of the community mentioned that the boundaries of the subareas are incorrect. I would encourage the Department to review the technical data of well logs, comments from the community and adjust the subarea boundaries accordingly. Additionally Mr. Mark Ownes discussed a B model in public comments that was more in alignment with stabilizing the declining areas of concern vs mass curtailments across the county. I would encourage the Department to revisit the model B proposal and combine the positive portions of the current 512 proposed rules adaptive management model. Hands down there is a water problem within the life lines of Harney County Basin, but it does not encompass the vast proposed critical ground water area. Only

the areas associated with Weaver Springs, Dog Mountain and Northern Crane should be regulated by the 512 rules. Upper Blitzen, Lower Blitzen Voltage, Silvies, and Silver Creek subareas should not be under the 512 rules because there is no data supporting them meeting the definition of a critical water area.

Question 18. When you look into the future, what is most important to you? What do you hope to see for yourself and for the basin? What are you most concerned about?

What is the most important thing looking into the future is a difficult question to answer? I would sum this up in a healthy newly expecting mother. This includes the mother to be's health, the baby's health, father, grandparents, great grandparents of the newborn and all the supporting networks that are needed for a newborn to grow up to become a positive addition to a community. (example. Role models, education, sports, activities, sense of pride, honor, respect, devotion to duty, medical care, housing, community, and the list goes on.) I aspire to be a grandparent, great grandparent, and contributing member of the community until it is my time to go to our Heavenly Fathers side. I am most concerned about being able to achieve my personal goals and dreams. The 512 proposed rules will hinder my ability to achieve my personal goals and dreams because I am projected to be curtailed if rule 512 is fully implemented.

Question 19. What else is important for you to communicate to the Department?

Trust- firm belief in the reliability, truth, ability, or strength of someone or something. Honor-honesty, fairness, or integrity in one's beliefs and actions. Leadership-the position or function of a leader, a person who guides or directs a group. The proposed 512 rules misses the mark and destroys Harney County's community with regard to the Departments Leadership, Trust and Honor. If implemented as proposed I do not believe the Department will get the support or cooperation to move forward with being able to successfully implement the new 512 rule as proposed. If there was adequate technical data to support the proposed PTW percentages then the community maybe more willing to accept the changes presented in 512 rules, but the Department's own informational slides presented on page 6 "Lack of historic measurement for wells -Lack of current measurements of wells only is fact that there is uncertainty from the department. I want to acknowledge all of the members of the Department that have spent hours working on the 512 rules and the development of the Adaptive Management model. I pray the Department is willing to work with the different subarea communities as they work to develop Voluntary Agreements.

Question 20. Do you have any other feedback on the proposed rules or groundwater management?

For questions about the proposed rules, please contact Kelly Mainz at the Water Resources Department (WRD_DL_rule-coordinator@water.oregon.gov or 971-718-7087).

For assistance with developing effective written comments, please reach out to Harmony Burrig with the High Desert Partnership who can help (541-846-8863 or harmony@saltandfresh.solutions).

August 12, 2025

Kelly Mainz -- Rulemaking Coordinator

Oregon Water Resources Department

725 Summer St. N. Suite A

Salem, OR 97301-1271

Subject: Comments on Proposed Division 512 Rules

Dear Mr. Mainz,

The Division 512 rules for the Harney Basin will set precedent for the rest of the state in terms of establishing an area of critical groundwater concern and the administration of individual groundwater permits. The size of the critical groundwater area is immense encompassing many small and large watersheds and extremely complex hydro-geological subsurface across an area approximately 120 miles wide and 150 miles long.

The groundwater system is dominated by a massive sticky lake bed clay in the middle of the basin many believe to be thousands of feet deep preventing groundwater movement from north to south or south to north. The previous water basin study concluded after drilling six wells in the bottom of Malheur Lake that the lake neither positively nor negatively impacted groundwater levels and that 85 percent of the water that gets to the lake is lost to evaporation. The reality of the old lake bed which dominates and extends out and to the north, confines and limits groundwater flow as does various rock formations in Lower Blitzen-Voltage, Silver Creek, Northeast-Crane and other areas. The hydraulic connection being used by the OWRD in the 512 Rule is not practical, realistic, or reasonable because the groundwater movement may be true over hundreds or thousands of years but not substantial over the next 100 years!

Many fault line/structures are limited conduits of groundwater flow because they are filled by clay and neither the lake bed nor the massive clay structure has been mapped to explain the location, function and relationship of different aquifers. Other aquifers with proven groundwater levels have distinct and usually unique aquifer attributes and should be managed and regulated as such using individual well and water rights information and conditions specified in water right certificates. The rules assumes one hydraulically connected groundwater flow or reservoir and this has not proven to be true when looked at through well drilling histories, well logs and the depth and location of groundwater.

For example the OWRD assumes a 39 percent curtailment of groundwater use in the Lower Blitzen-Voltage subarea will help groundwater levels in the Northeast-Crane subarea. Subsurface barriers to substantial water connections and flow between these two areas has not been adequately investigated. No objective evidence has been presented to validate this assumption so any Groundwater Model projections using this assumption are not valid and are not technically or legally defensible. Well drilling results, well logs, and water chemistry information and differences show several hydrological-geological structures and distinct separate aquifers and this information strongly indicates minimum water connection between Lower Blitzen-Voltage and Northeast-Crane. The 39 percent reduction in the Lower Blitzen will cause a loss of millions of dollars of equity loss and direct economic loss to the community based on an assumption that is not true with no provisions in the rule to fix the mistake when data over time proves the Model is wrong.

Other areas of the Malheur Lakes Basin also are being proposed for major curtailment for different reasons based on assumptions that have not been verified with the result of horrific economic results and also biological impacts. No evidence has been presented that the Silver Creek Subarea impacts the Double O springs and it appears OWRD has not adequately researched the deep and shallow aquifers in the upper Silver Creek area. The upper Silver Creek area appears to be reasonably stable and should not have any curtailment based on all of the data presented at previous meetings. The area should not be designated as a critical groundwater area and the area wells should be regulated under existing

law. The Silvies area appears to be reasonably stable as does other small distinct aquifers that should be administered by their individual permit and water right conditions. The Sunset area is an example of inadequate data and lacks conformity with the Groundwater Model as does most distinct aquifers.

In **690-512-0010 Definitions (5) "Permissible Total Withdrawal"** we protest the definition as written. The PTW is based on the USGS Harney Basin Groundwater Model and is not "substantial evidence" as viewed through the eyes of people looking at measurable change over time with a regulatory process of being fair, reasonable, consistent and logical. Apparently OWRD has a high level of confidence in the model and the projections that might happen but if any of the assumptions (major or minor) change, the projections will change. Although OWRD has not given a list of assumptions guiding the model, and people have requested the assumptions numerous time , we know that one primary assumption is that water readily moves from one subarea to another in spite of strong evidence to the contrary. Substantial evidence should be measurable, statistically valid, realistic and have a confidence level consistent with the impacts of PTW.

In **690-512-0020 Administrative Boundaries** we disagree with the listed boundaries of Harney Basin Critical Groundwater Area especially those areas that have reasonably stable groundwater. Also the Harney Basin Groundwater Reservoir assumes one big bathtub and that is not beneficial to understanding the complexities of the Malheur Lakes groundwater system.

Concerning **690-512-0041 Harney Basin Critical Groundwater Area (1)** the target groundwater level trend of 0 feet per year is unrealistic, not practical and not consistent with other areas of the state, existing water law and the stated intent of groundwater administration and water use. Under **(2)**, we believe all irrigation wells should have static water levels measured in March but three years should be given to implement the provision. In **(6)** obviously subareas with reasonably stable groundwater levels should be excluded from critical area language

provisions. By the Departments own data the Lower Blitzen is not over allocated and is not overdrawn .

In section **690-512-0050 Permissible Total Withdrawal for Each Subarea Within the Harney Basin Critical Groundwater Area,** water use should remain at authorized use levels (water used within a five year period beginning in 2016) for all water rights meeting the requirements and conditions in their water right and meeting reasonable stable conditions. In areas not meeting reasonable stable water levels individual water right conditions need to be enforced first with a full curtailment of a maximum of five to ten percent subject to voluntary agreements meeting conservation and ecological goals. PTW levels need to be set based on what we know (data over time) and measure (repetitive monitoring) and also structured to encourage voluntary conservation and reduced use through voluntary agreements.

We support at least 15 subareas (preferably more)-because 15 subareas more closely align with known aquifers. Curtailment and PTW must be correlated to areas with severe declines to facilitate voluntary agreements for conservation and reasonable reduced water use but also potential artificial and natural recharge areas. It is not reasonable or fair to curtail water use of irrigators quickly when the State failed to curtail use which exceeded the legal use and conditions in irrigator permits and water rights since the 1970's in some cases. There is no magical or critical level of groundwater decline so OWRD should focus on decreasing the rate of decline and not fixate on the unachievable goal of zero decline.

690-512-0060 Determination of Initial Allotment for All Groundwater Rights

should not reduce the legal duty of 3.0 acre feet per acre to 2.5 partially because long term irrigation use needs to have flexibility to move water quantity for different crops and conveyance systems such as greenhouse production etc. Reducing the legal duty might limit the production of higher value crops that need

3.0 acre feet of water allowing crop rotation, use of conservation practices and reduce water use in a long term or short term conservation plan. This reduction will further impact the profitability and equity position of junior and senior water users.

690-512-0070 Scheduling Water Use Reductions to Meet the PTW (1) b. should be correlated to the level of static water level decline but lower overall with a much slower curtailment ever six years than what is proposed by OWRD in order to have time to make economic adjustments to their businesses. The maximum curtailment in problem areas would be 20 percent implemented in three to five percent increments in six year periods over 30 years with the goal of reducing the rate of decline. This is an achievable goal and gives incentives for irrigators to work together and work with OWRD with cooperative water management actions and alternatives implemented with voluntary agreements. Initial water use reductions in 2028 need to be small even in areas of large declines because implemented reductions will be wrought with procedural problems and problems making major adjustments by water right holders. We recommend a 3-5 percent cut in 2028 should be implemented by 2034.

690-521-0080 Adaptive Management of the Harney Basin Critical Groundwater Area may be the most important part of the rule but will require the Department to expand the issues addressed by adaptive management to shift directions if data from a subarea proves assumptions used to build the groundwater model were wrong.

Any one assumption wrong on the front end will give skewed or wrong projections out the back end. As an example in weather models, upcoming projection in 50 different competing models will be closely aligned or totally different depending on what assumptions were used on the front end concerning ocean temperatures, ocean currents, persistent pressure gradients, jet streams etc. Each expert will pick and choose different models to work with that

emphasized conditions and changes he is watching, such as the expansion or retraction of La Nina or El Nino. He will then give his summary or professional opinion to his clients so they can better make good business decisions. The groundwater model projected outcomes that should have been a place to look and not an end-all!

If groundwater flow data and drill cores proves minimum water movement from Lower Blitzen to Crane the whole premise of curtailment is wrong! So how will the Department fix that issue when the Department already will have regulated a number of junior water right holders off at a cost of millions of dollars? If the source of water in Double O springs is found and it is not the same water as Silver Creek irrigators are using, what will the change of direction be and how are those juniors losing millions of dollars fixed?

(2) We have reviewed well logs and well histories of the 22 wells in the Lower Blitzen-Voltage Subarea the Department selected for comparing static levels in 2022 and 2028 and four wells are insufficient in terms of construction, location and monitoring adequacy. We also disagree with the selection of many of the other wells due their location and distribution when other wells would represent the area better. We propose to set up leadership committees to cooperatively work with the Department to evaluate and select monitoring wells, including the number of wells the Department will use to measure and establish static water level trends.

(3) Because a portion of the 22 wells initially selected by the OWRD in the Lower Blitzen-Voltage are not representative and adequate for determining groundwater trend it is vital to establish a cooperative and transparent process to make Adaptive Management work as intended. We propose irrigators in each subarea select a leadership committee by majority vote to evaluate and propose representative wells cooperatively with the Department.

Of course, Lower Blitzen, Silver Creek, Silvies etc. should be excluded from the process because static groundwater levels do not meet the critical groundwater criteria. Further, the basic determination of PTW is flawed for Little Blitzen and Silver Creek so proposed curtailments do not make any sense. But any area required to go through **690-521-0080** needs a cooperative leadership process outlined above established.

690-512-0090 Serious Water Management Problem Area (SWMPA)

requirements are very expensive and in our opinion provide little benefit to groundwater trend level management. The time, money and management costs would be much better spent on March static water level testing, well construction upgrades which can greatly benefit pumping and static groundwater levels and water conservation practices. The cost incurred per well might range from a minimum of \$1,200 up to \$5,000 so to put water use meters on 200 wells is a cost of one million dollars and we believe that money could better be spent on conservation.

In view of your plan to curtail junior water rights no matter how good or how bad their water level is, it makes no sense to implement this provision until after 2034. The focus of OWRD and irrigators right now should be conservation and cooperation so having no curtailment occur in 2028 would be a beneficial step towards making better groundwater management happen and begin building trust.

Conclusion: This groundwater management initiative **690-512 Malheur Lake Basin Program** will be viewed in the context of "they did what?" if the described changes are not made. History and many other states will look at the prioritizing of curtailment in areas with the least problems (in some cases no problems) as

"they did what?". The issue of groundwater flow and hydraulic connection across such a broad area without measurable-technically defensible documentation has many scratching their heads. Also precedent setting for many other areas is the issue of the groundwater model being used as a decision making and regulatory function at the exclusion of comprehensive data collection, monitoring, and analysis over time. The lack of transparency in what assumptions were used in the groundwater model and how they were ground truth-ed were requested many times and has never been provided to the RAC or people impacted by these regulations. There is time to fix these deficiencies and go forward in a positive manner. People's lives and millions of dollars of equity investment are being taken from people who have done nothing wrong and do not have a groundwater problem not to say additional millions of dollars of economic and job loss to the community.

Sincerely,

Fred I. Otley, President Otley Bros., Inc.

40926 S Diamond Ln

Diamond, OR 97722

fredotley@hotmail.com

(541) 589-2143

Return public comments by August 7, 2025 via email or mail to the Water Resources Department

JUL 07 2025

PROPOSED HARNEY BASIN GROUNDWATER POLICIES – WRITTEN COMMENT FORM

Received

This written comment form can be used to help you formulate effective written public comments for the Division 512 Harney Basin Program Rules being proposed by the Oregon Water Resources Department, which will be used to manage and regulate groundwater use in the Harney Basin. The questions provided in this form address various aspects of the rules. Each question includes space to write your answer and some questions include options for you to consider. Reach out to Harmony Burright if you want help talking through or recording your comments (541-846-8863 / harmony@saltandfresh.solutions).

Public comments and related materials must be received no later than **August 7, 2025 at 5pm:**

By Email: WRD_DL_rule-coordinator@water.oregon.gov

By Mail: Kelly Meinz – Rulemaking Coordinator
Oregon Water Resources Department
725 Summer St. N.E. Suite A
Salem, OR 97301-1271

Your Name (required):

Garrit A. Jager

Your Email (optional):

Your Phone (optional):

541-410-7905

Note: All personally identifiable information may be made public. Please do not include this information if you do not want it included in the public record. A first name and last initial must be included to be considered.

Please check all interests that apply to you:

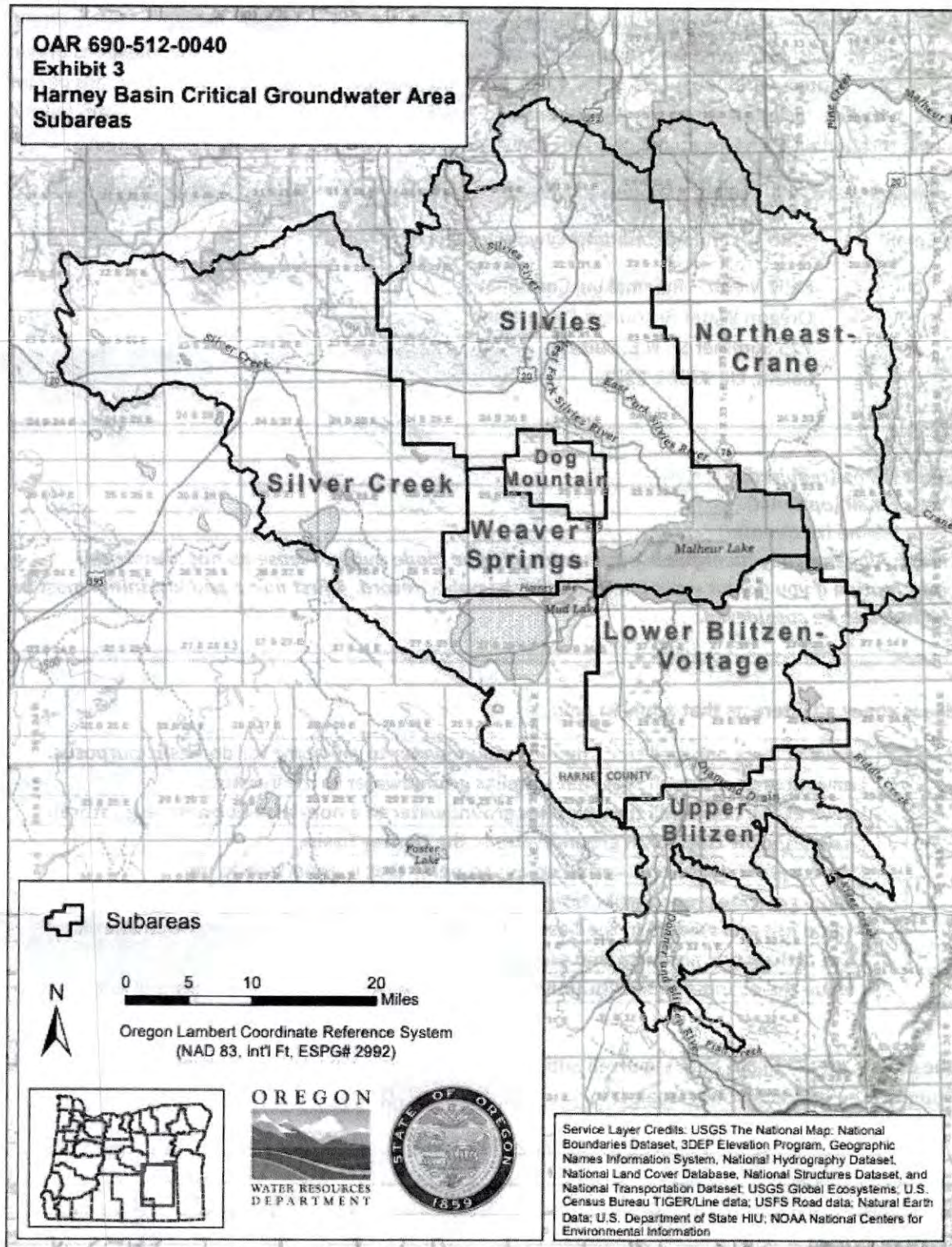
☒	I have at least one well that supplies groundwater to my home for domestic purposes.
☒	I have at least one well that that supplies groundwater to my livestock.
☒	I have at least one well that supplies groundwater to a non-farm business (e.g., store).
☒	I irrigate/grow crops with groundwater in the Harney Basin.
☐	I have a groundwater fed spring on my property that is important to me.
☐	I value groundwater contributions to the environment (e.g., springs and native vegetation).
☐	I value fish and wildlife in the basin, including those that benefit from groundwater.
☒	I use agricultural products that are produced with groundwater.
☒	I value the economic contributions of agricultural operations that use groundwater.

Question 1. Please tell us about yourself and describe why groundwater is important to you. If you use groundwater, describe how you use it.

I Have one Pivot it is important To
me for Hay and feeds The wildlife.
Deer & Elk and lots of Different Birds

Return public comments by August 7, 2025 via email or mail to the Water Resources Department

Question 2. If you use groundwater in the Harney Basin, mark with a color dot on the map provided where you use groundwater (this can be a rough approximation).



JUL 07 2025

Return public comments by August 7, 2025 via email or mail to the Water Resources Department

OWRD

Question 3. The Water Resources Department proposes to designate the area in the map outlined in black as a **Critical Groundwater Area**, which would give them the authority to regulate or curtail/reduce groundwater use. Do you have any feedback on the boundaries or the basis for designating a Critical Groundwater Area described in the **Division 10 report**? (See 609-512-0041 in the proposed rules)

Im in Lower Blitzen Voltage area
not much change in ground water
level "But" in July it usually water
level comes up

Question 4. The map on the previous page shows the seven proposed **subareas** that the Department will use to regulate groundwater use (with different levels of regulation for each area). Based on your knowledge of the basin, are there any changes you would suggest to the boundaries? Draw them on the map and describe the reason below. (See 609-512-0041 in the proposed rules)

None

Question 5. Please describe **groundwater conditions** where you are and what changes in groundwater levels or other groundwater changes you have observed in the last decade. If you have not observed any changes, please note that. You are also welcome to note any questions you have.

Lower Blitzen Voltage

Not much change in my Area
like I say it comes up in July

Question 6. If you have been or expect to be **impacted by changing groundwater conditions**, please describe how you have been impacted.

Financial devastation. Less water
means less farm products. 75% off hay from
our area goes to dairies.

Question 7. The Water Resources Department proposes to achieve the **groundwater management goal** of durably stable groundwater levels (0 feet per year of decline) by the year 2058 for the entire basin by curtailing groundwater use in 6-year intervals. Do you have feedback on the groundwater level goal and target groundwater level trend? (See 609-512-0041 in the proposed rules)

☐	I support the groundwater management goal and target groundwater level trend as proposed.
☐	I support the target groundwater level trend, but I would like to see more time allowed to achieve the goal. Year achieved:
☐	I support the target groundwater level trend, but I would like to see the goal achieved in less time on a quicker timeline. Year achieved:
☒	I think minor declines are acceptable and should be allowed. Acceptable amount of decline (in total feet or feet per year):
☐	I would like to see groundwater levels come back up or recover. Desired amount of recovery (in feet):
☐	I would like to be able to see groundwater levels be allowed to fluctuate between certain levels (+/- within a certain "band" of acceptable declines)

Question 8. The proposed **initial allocation** (duty) for groundwater irrigation rights is 2.5 acre feet of water per acre for acres that were irrigated (wetted acres) sometime between 2020-2024. What feedback do you have on this proposal? (See 690-512-0060 in the proposed rules)

☐	I support the initial allocation of 2.5 acre feet for groundwater irrigation rights.
☒	I think the initial allocation should be greater than 2.5 acre feet. Proposed amount:
☐	I think the initial allocation should be less than 2.5 acre feet. Proposed amount:
☐	I support that wetted acres should be calculated based on use between 2020-2024.
☐	I think wetted acres should be calculated based on a different time period. Suggested time period:

Received

JUL 07 2025

OWRD

JUL 07 2025

OWRD

Question 9. The proposed initial allocation for municipal or quasi-municipal groundwater rights is 110% of water equal to 110% of the greatest single year in the previous five-year period. What feedback do you have on this proposal? (See 690-512-0060 in the proposed rules)

75% municipal use

Question 10. The proposed permissible total withdrawal (PTW) for each of the seven subareas is described below. This is the amount of water that "represents the amount of water that the Water Resources Department has determined can achieve the target groundwater level trend by 2058. The Department may not reduce groundwater pumping to a value less than the permissible total withdrawal." Highlight your feedback about the level of reductions for each area below. A memo produced by the Department explores a different allocation between the Lower Blitzen-Voltage area and the Northeast-Crane area. What additional feedback do you have on these proposed levels of groundwater use (PTW) and reductions? (See 690-512-0050 in the proposed rules)

Weaver Springs	Lower Blitzen-Voltage	Northeast-Crane	Silver Creek	Silvies	Dog Mountain	Upper Blitzen
PTW: 4,800 afy	PTW: 8,300 afy	PTW: 35,000 afy	PTW: 15,200 afy	PTW: 21,200 afy	PTW: 4,200 afy	PTW: 100 afy
75% reduction from 2018 use	39-40% reduction from 2018 use	34% reduction from 2018 use	27-28% reduction from 2018 use	15-16% reduction from 2018 use	9-10% reduction from 2018 use	0% reduction from 2018 use
Too much?	Too much?	Too much?	Too much?	Too much?	Too much?	Too much?
Too little?	Too little?	Too little?	Too little?	Too little?	Too little?	Too little?
Just right?	Just right?	Just right?	Just right?	Just right?	Just right?	Just right?
I don't know	I don't know	I don't know	I don't know	I don't know	I don't know	I don't know

5-10% would be fine like I say water level comes up in July

Question 11. The reductions in each subarea will be phased in over time following a proposed reduction schedule, with the largest percent of reductions made initially and later reductions phased in over 6 year intervals based on existing groundwater level trends to ensure that groundwater levels are on track to achieve the groundwater management goal. Reductions will be based on priority date using the initial allocation as a starting point. What feedback do you have on the proposed reduction schedule? (See OAR 690-512-0070 in the proposed rules).

	2028	2034	2040	2046	2052	2058
Other Subareas	40% of total reductions	30% of total reductions	15% of total reductions	10% of total reductions	5% of total reductions	Stability achieved
Weaver Springs	75% of total reductions	25% of total reductions	--	--	--	--

	I support the proposed reduction schedule (percent reductions and implementation timeframe).
	I would like to see higher reductions implemented in the near-term.
	I would like to see lower reductions implemented in the near-term.
	I would like to see 20% reductions implemented at each step.
	I would like to see all reductions implemented immediately.
	I would like to see a shorter implementation timeframe (achieve stability sooner).
	I would like to see a longer implementation timeframe (longer period to achieve stability).
X	If groundwater levels have not been declining in a subarea, I would like to see a grace period during the first 6-year period where no reductions are implemented.

Question 12. The Department is proposing to follow an adaptive management approach for implementing reductions informed by groundwater level trends. If groundwater level trends are "on track" then no adjustments would be made. This approach allows the Department to make changes to the reductions to achieve the goal. Reductions could be adjusted up or down depending on how groundwater levels change over the previous 6 years. What feedback do you have on the adaptive management approach? (See 690-512-0080 in the proposed rules)

Received

JUL 07 2025

CWRD

Question 13. By 2028 all groundwater rights holders will be required to install a flowmeter to measure groundwater use and will be required to report groundwater use on an annual basis. A flowmeter must be installed on this timeframe in order to continue to legally use groundwater under existing rights. What feedback do you have on this requirement? Will you seek any assistance to meet this requirement? (See 690-512-0110 in the proposed rules)

They Should have Been Done
Sooner

Question 14. Under the proposed rules the only new uses that will be allowed are those uses that do not require water rights (i.e., permit exempt uses), such as domestic and stockwater wells, and non-consumptive geothermal uses. What feedback do you have on the proposed new uses? (See 690-512-0030 in the proposed rules)

Stay the Same

Question 15. Please describe what personal impacts you expect these rules might have on you (either positive or negative).

Positive

Question 16. Please describe what basin impacts you expect these rules might have on the broader basin or community (either positive or negative). (See the Fiscal Impact Statement).

Lower Blitzen Voltage

Question 17. Describe actions that you would like the Department to consider that could mitigate or minimize anticipated impacts to you or the basin. This could include support for proposed policies or changes to the proposed policies.

~~to~~ ~~the~~

1. HAVE The End guns off on pivots
They are a waste of water
2. There is pivot out here that
only have water for 1/2 pivot
and They IRR around hole pivot

Question 18. When you look into the future, what is most important to you? What do you hope to see for yourself and for the basin? What are you most concerned about?

Follow The Rules That Already Have

Question 19. What else is important for you to communicate to the Department?

Follow The Rules That Already Have

Question 20. Do you have any other feedback on the proposed rules or groundwater management?

Follow The Rules That Already Have

For questions about the proposed rules, please contact Kelly Mainz at the Water Resources Department (WRD_DL_rule-coordinator@water.oregon.gov or 971-718-7087).

For assistance with developing effective written comments, please reach out to Harmony Burright with the High Desert Partnership who can help (541-846-8863 or harmony@saltandfresh.solutions).

Received

JUL 07 2025

OWRD

High Desert Partnership
PO Box 252
Burns OR 97720-0252

PORTLAND OR 972

3 JUL 2025 PM 6 1



Kelly Mainz - Rulemaking Coord.
OR Water Resources Dept.
725 Summer St. N.E. Suite A
Salem, OR 97301-1271

PROPOSED HARNEY BASIN GROUNDWATER POLICIES – WRITTEN COMMENT FORM

This written comment form can be used to help you formulate effective written public comments for the Division 512 Harney Basin Program Rules being proposed by the Oregon Water Resources Department, which will be used to manage and regulate groundwater use in the Harney Basin. The questions provided in this form address various aspects of the rules. Each question includes space to write your answer and some questions include options for you to consider. Reach out to Harmony Burright if you want help talking through or recording your comments (541-846-8863 / harmony@saltandfresh.solutions).

Public comments and related materials must be received no later than **August 7, 2025 at 5pm:**

By Email: WRD_DL_rule-coordinator@water.oregon.gov

By Mail: Kelly Meinz – Rulemaking Coordinator
Oregon Water Resources Department
725 Summer St. N.E. Suite A
Salem, OR 97301-1271

Your Name (required):	Gary Marshall
Your Email (optional):	
Your Phone (optional):	
Note: All personally identifiable information may be made public. Please do not include this information if you do not want it included in the public record. A first name and last initial must be included to be considered.	

Please check all interests that apply to you:

☒	I have at least one well that supplies groundwater to my home for domestic purposes.
☒	I have at least one well that that supplies groundwater to my livestock.
☐	I have at least one well that supplies groundwater to a non-farm business (e.g., store).
☐	I irrigate/grow crops with groundwater in the Harney Basin.
☒	I have a groundwater fed spring on my property that is important to me.
☒	I value groundwater contributions to the environment (e.g., springs and native vegetation).
☒	I value fish and wildlife in the basin, including those that benefit from groundwater.
☒	I use agricultural products that are produced with groundwater.
☒	I value the economic contributions of agricultural operations that use groundwater.

Question 1. Please tell us about yourself and describe why groundwater is important to you. If you use groundwater, describe how you use it.

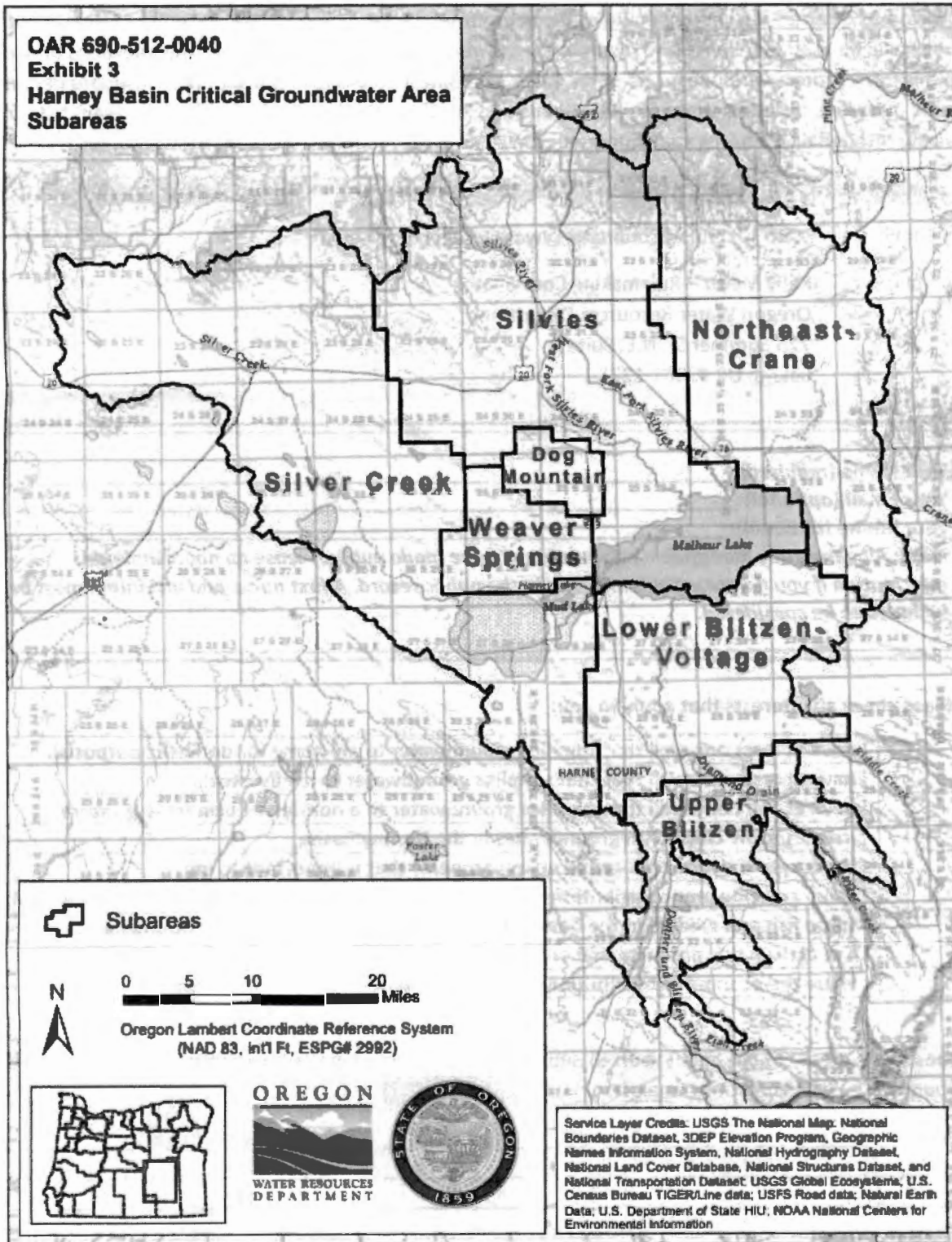
I am 5th generation Harney Co resident - also have children & grandchildren in the County. Our family has properties in Lower Silver Creek, Sagehen Creek, Drawaug, Princeton & Burns/Homes. Dependable water from springs, stock wells & domestic house wells are critical for our homes & livestock

AUG 11 2025

Return public comments by August 7, 2025 via email or mail to the Water Resources Department

OWRD

Question 2. If you use groundwater in the Harney Basin, mark with a color dot on the map provided where you use groundwater (this can be a rough approximation).



AUG 11 2025

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OWRD

Question 3. The Water Resources Department proposes to designate the area in the map outlined in black as a **Critical Groundwater Area**, which would give them the authority to regulate or curtail/reduce groundwater use. Do you have any feedback on the boundaries or the basis for designating a Critical Groundwater Area described in the **Division 10 report**? (See 609-512-0041 in the proposed rules)

Question 4. The map on the previous page shows the seven proposed **subareas** that the Department will use to regulate groundwater use (with different levels of regulation for each area). Based on your knowledge of the basin, are there any changes you would suggest to the boundaries? Draw them on the map and describe the reason below. (See 609-512-0041 in the proposed rules)

Question 5. Please describe **groundwater conditions** where you are and what changes in groundwater levels or other groundwater changes you have observed in the last decade. If you have not observed any changes, please note that. You are also welcome to note any questions you have.

Stock wells in the Warm Springs Valley (Lower Silver Creek) have been dependable. However the springs in the valley's western boundary (Silver Lake) are discharging less in recent years. I can't quantify this, but the wetlands that they spread out on are drying up. There is less stock water available throughout grazing season.

Question 6. If you have been or expect to be **impacted by changing groundwater conditions**, please describe how you have been impacted.

Received

AUG 11 2025

Turn public comments by August 7, 2025 via email or mail to the Water Resources Department

OWRD

Question 7. The Water Resources Department proposes to achieve the groundwater management goal of durably stable groundwater levels (0 feet per year of decline) by the year 2058 for the entire basin by curtailing groundwater use in 6-year intervals. Do you have feedback on the groundwater level goal and target groundwater level trend? (See 609-512-0041 in the proposed rules)

☐	I support the groundwater management goal and target groundwater level trend as proposed.
☐	I support the target groundwater level trend, but I would like to see more time allowed to achieve the goal. Year achieved:
☒	I support the target groundwater level trend, but I would like to see the goal achieved in less time on a quicker timeline. Year achieved:
☐	I think minor declines are acceptable and should be allowed. Acceptable amount of decline (in total feet or feet per year):
☐	I would like to see groundwater levels come back up or recover. Desired amount of recovery (in feet):
☐	I would like to be able to see groundwater levels be allowed to fluctuate between certain levels (+/- within a certain "band" of acceptable declines)

Question 8. The proposed initial allocation (duty) for groundwater irrigation rights is 2.5 acre feet of water per acre for acres that were irrigated (wetted acres) sometime between 2020-2024. What feedback do you have on this proposal? (See 690-512-0060 in the proposed rules)

☒	I support the initial allocation of 2.5 acre feet for groundwater irrigation rights.
☐	I think the initial allocation should be greater than 2.5 acre feet. Proposed amount:
☐	I think the initial allocation should be less than 2.5 acre feet. Proposed amount:
☐	I support that wetted acres should be calculated based on use between 2020-2024.
☒	I think wetted acres should be calculated based on a different time period. Suggested time period: 2000 - 2010

Question 9. The proposed initial allocation for municipal or quasi-municipal groundwater rights is 110% of water equal to 110% of the greatest single year in the previous five-year period. What feedback do you have on this proposal? (See 690-512-0060 in the proposed rules)

OWRD

Question 10. The proposed permissible total withdrawal (PTW) for each of the seven subareas is described below. This is the amount of water that "represents the amount of water that the Water Resources Department has determined can achieve the target groundwater level trend by 2058. The Department may not reduce groundwater pumping to a value less than the permissible total withdrawal." Highlight your feedback about the level of reductions for each area below. A memo produced by the Department explores a different allocation between the Lower Blitzen-Voltage area and the Northeast-Crane area. What additional feedback do you have on these proposed levels of groundwater use (PTW) and reductions? (See 690-512-0050 in the proposed rules)

Weaver Springs	Lower Blitzen-Voltage	Northeast-Crane	Silver Creek	Silvies	Dog Mountain	Upper Blitzen
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75% reduction from 2018 use	39-40% reduction from 2018 use	34% reduction from 2018 use	27-28% reduction from 2018 use	15-16% reduction from 2018 use	9-10% reduction from 2018 use	0% reduction from 2018 use
Too much?	Too much?	Too much?	Too much?	Too much?	Too much?	Too much?
Too little?	Too little?	Too little?	Too little?	Too little?	Too little?	Too little?
Just right?	Just right?	Just right?	Just right?	Just right?	Just right?	Just right?
I don't know	I don't know	I don't know	I don't know	I don't know	I don't know	I don't know

Received

AUG 11 2025

Receive public comments by August 7, 2025 via email or mail to the Water Resources Department

OWRD

Question 11. The reductions in each subarea will be phased in over time following a **proposed reduction schedule**, with the largest percent of reductions made initially and later reductions phased in over 6 year intervals based on existing groundwater level trends to ensure that groundwater levels are on track to achieve the groundwater management goal. Reductions will be based on priority date using the initial allocation as a starting point. What feedback do you have on the proposed reduction schedule? (See OAR 690-512-0070 in the proposed rules).

	2028	2034	2040	2046	2052	2058
Other Subareas	40% of total reductions	30% of total reductions	15% of total reductions	10% of total reductions	5% of total reductions	Stability achieved
Weaver Springs	75% of total reductions	25% of total reductions	--	--	--	--

☐	I support the proposed reduction schedule (percent reductions and implementation timeframe).
☐	I would like to see higher reductions implemented in the near-term.
☐	I would like to see lower reductions implemented in the near-term.
☐	I would like to see 20% reductions implemented at each step.
☐	I would like to see all reductions implemented immediately.
☒	I would like to see a shorter implementation timeframe (achieve stability sooner).
☐	I would like to see a longer implementation timeframe (longer period to achieve stability).
☐	If groundwater levels have not been declining in a subarea, I would like to see a grace period during the first 6-year period where no reductions are implemented.

Question 12. The Department is proposing to follow an **adaptive management approach** for implementing reductions informed by groundwater level trends. If groundwater level trends are "on track" then no adjustments would be made. This approach allows the Department to make changes to the reductions to achieve the goal. Reductions could be adjusted up or down depending on how groundwater levels change over the previous 6 years. What feedback do you have on the adaptive management approach? (See 690-512-0080 in the proposed rules)

Return public comments by August 7, 2025 via email or mail to the Water Resources Department

Question 13. By 2028 all groundwater rights holders will be required to install a flowmeter to measure groundwater use and will be required to report groundwater use on an annual basis. A flowmeter must be installed on this timeframe in order to continue to legally use groundwater under existing rights. What feedback do you have on this requirement? Will you seek any assistance to meet this requirement? (See 690-512-0110 in the proposed rules)

Question 14. Under the proposed rules the only new uses that will be allowed are those uses that do not require water rights (i.e., permit exempt uses), such as domestic and stockwater wells, and non-consumptive geothermal uses. What feedback do you have on the proposed new uses? (See 690-512-0030 in the proposed rules)

Question 15. Please describe what personal impacts you expect these rules might have on you (either positive or negative).

Question 16. Please describe what basin impacts you expect these rules might have on the broader basin or community (either positive or negative). (See the Fiscal Impact Statement).

Received

AUG 11 2025

Return public comments by August 7, 2025 via email or mail to the Water Resources Department

OWN

Question 17. Describe actions that you would like the Department to consider that could mitigate or minimize anticipated impacts to you or the basin. This could include support for proposed policies or changes to the proposed policies.

Question 18. When you look into the future, what is most important to you? What do you hope to see for yourself and for the basin? What are you most concerned about?

Discharge from springs & water from shallow aquifers are the most important to me. Without that water, this valley loses its wet lands, wildlife, livestock & people. We cannot make a mistake or take the risk of over pumping ground water and lose this vital resource (spring water) in our beautiful Valley

Question 19. What else is important for you to communicate to the Department?

Question 20. Do you have any other feedback on the proposed rules or groundwater management?

For questions about the proposed rules, please contact Kelly Mainz at the Water Resources Department (WRD_DL_rule-coordinator@water.oregon.gov or 971-718-7087).

For assistance with developing effective written comments, please reach out to Harmony Burright with the High Desert Partnership who can help (541-846-8863 or harmony@saltandfresh.solutions).

High Desert Partnership
PO Box 252
Burns OR 97720-0252

PORTLAND OR RPDC 972

7 AUG 2025 PM 5 L



FOREVER / USA



Kelly Mainz - Rulemaking Coord.
OR Water Resources Dept.
725 Summer St. N.E. Suite A
Salem, OR 97301-1271

109

MEINZ Kelly A * WRD

From: Glenn Harris <harrisranch@yahoo.com>
Sent: Wednesday, August 13, 2025 3:43 PM
To: WRD_DL_rule-coordinator
Subject: Harney Basin Ground Water Rules

Some people who received this message don't often get email from harrisranch@yahoo.com. [Learn why this is important](#)

To whom it may concern,

My name is Glenn Harris and I am a user of ground water in the Princeton, Oregon (Lower Blitzen-Voltage) area. I'm not sure why this area is being focused on at all, let alone as the area with the largest proposed cut. I raise hay and pasture there for my cattle. As a side note, my kids are 5th generation ranchers in Harney County.

I believe this area has the most stable water supply in the basin and was not, in the beginning, even being considered for a reduction in usage and yet we find ourselves fighting for our literal livelihood. I have a well on this property that was test flowed this spring. When Todd Vanderdasson started the test, the static level was 16 feet 2 inches. When he concluded the test the level was 18 feet 2 inches, four hours later and had been stable for over three hours.

I'm sure there are problem areas in the state, but this is not one of them. I sincerely wish you would reconsider how you're going about these cuts and please make sure they are justified.

Thanks for your consideration,

Just an old rancher,
Glenn Harris

Pacific Hydro-Geology Inc.

18487 S. Valley Vista Rd.
Mulino, OR 97042
(503) 632-5016

August 12, 2025

Mr. Kelly Meinz
Rules Coordinator
Oregon Water Resources Department
725 Summer St. N.E. Ste. A
Salem, Oregon 97301

RE: Comments on Proposed Harney (Division 512) Rulemaking

Dear Mr. Meinz:

We are submitting these comments in opposition to the proposed Harney Basin rules. There are many reasons to oppose these rules. We have heard from people actively involved in the rule-making who characterize the process as one that seems to have a predestined outcome pushed through without due regard for the technical data or the concerns and recommendations of local residents. We trust that the Oregon Water Resources Department (OWRD) will receive many comments expressing these concerns.

Our focus, as discussed in the comments provided below, is to point out a couple of significant technical concerns we have regarding OWRD's characterization of the hydrogeology of the basin and subsequent development of the groundwater model used to establish the strategies for future management of the basin's groundwater resources. In particular, in spite of what appears to be glaringly obvious evidence, the OWRD has ignored the likelihood that improperly constructed, commingling wells are contributing significantly to the apparent groundwater declines in the basin. Furthermore, OWRD's geology report which provided the geologic framework used for development of the groundwater model, identifies two significant beds with low permeability that appear to be continuous across the basin. Yet, the report fails to identify these layers as potential confining units which could have important implications concerning the hydrogeology of the basin. It is also worth mentioning here that the OWRD geology report was ostensibly intended to describe the geology *and hydrogeology* of the basin, yet it contains virtually no discussion of the basin's hydrogeology. In 2024, the OWRD did publish a Groundwater Report (Groundwater Report for the Harney Basin Critical Groundwater Area Rulemaking, Draft: June 17, 2014). However, OWRD's groundwater report relies primarily on two previously published USGS reports (USGS Scientific Investigation Reports 2021-5103 and 2021-5128). Neither the USGS reports nor the OWRD groundwater report consider the potential hydrogeologic influences from the two confining units. Ultimately, the USGS groundwater model, which is so important for developing future management strategies completely, disregards the presence and influence of these confining units. These two issues, namely commingling wells, and the ignored confining units, are discussed further below.

As an added note, we acknowledge that we have only been involved briefly and peripherally in the rulemaking, and that we are presenting our technical concerns here at a late stage in the process. However, early on in the rulemaking process we presented this information to a RAC member with the hopes that our concerns would be aired and discussed. Regardless of the outcome of those efforts, we feel compelled at this time to formally submit our comments.

Commingling Wells

We have been suspicious for a long time that at least some of the groundwater declines in the Harney Basin have been caused by improperly constructed, commingling wells. So, in June 2024, we started looking at well logs in the Weaver Springs area, where the biggest declines have been observed and which seems to be driving a lot of the recent actions.

What immediately caught our attention was the Figure on page 4 from USGS Fact Sheet 2022-3052 (Attachment A), which shows the groundwater contours in the Weaver Springs area. The groundwater contours, which presumably represent static, non-pumping conditions, have the form that we would expect from a cluster of wells pumping at the same time. If an area is experiencing overall water level declines from over-pumping, we would expect to see more uniform declines over a broader area. The bathtub drain nature of the water level contours suggests that one or more commingling wells in the center of the decline area are discharging water from aquifers with higher heads into aquifers with lower heads, which typically occurs downward. If so, this drainage occurs year-round, 24 hours per day, 7 days a week. This can result in the discharge of water down the well(s) in volumes that exceed what is pumped from the well(s) for irrigation. Initially, the discharge from one aquifer into another will result in a decline in water levels. With time, often after many years, the water levels will stabilize after the different aquifers reach their new combined equilibrium.

The potential issue for commingling and this drawdown (depletion) phenomenon was noted specifically in the Harney Basin by Leonard (1970), Ground-Water Resources in Harney Valley, Harney County, Oregon: "The effects of separating layers between water-bearing beds is largely offset by the common practice of setting 50 to 100 feet of casing and leaving the rest of the well open to all lower water-bearing beds. As a result, water levels, yields, drawdowns, and specific capacities of most wells in the valley represent a composite of several water-bearing beds..." (Page 20), "This method of construction allows water to circulate from higher head to lower head zones in the well, so that the water level in these wells represent a mean of the potentiometric heads of several aquifers." (Page 29). What Leonard does not say is that if enough wells are drilled that combine aquifers (comingle), then water levels will start to decline until a new equilibrium is reached. The decline in water levels cannot be distinguished from an overdraft until the water levels reach a new equilibrium, which is what happened in the Mosier, Mt. Angel, and Stayton-Sublimity areas.

Our review of well logs started with the wells shown on Attachment A from USGS Fact Sheet 2022-3052. From that review, we prepared a rough geologic cross-section (Attachment B) through the Weaver Springs area from the well logs for several of the wells shown on Attachment A. Also attached is an aerial photo from the OWRD well information mapping program showing the location of the cross-section, the wells included in the cross-section, and other nearby wells (Attachment C).

One of the things that first stood out was a well located pretty much in the center of the "drain," MARI 51146 (Attachment D). This well is shown on the well log to be 130 feet deep, yet the OWRD has been reporting water level measurements deeper than this depth. This can only mean that the well has been deepened. However, ***there is no available record of the well deepening***. So, unless there is some other information available somewhere about this well, we don't know how deep it actually is, or what other deeper aquifers were encountered when it was deepened. The original well was reported to have a yield of 1,000 gpm. Depending on the depth of the deepened well, and the properties of the deeper aquifers, the shallower, upper

aquifer could be constantly discharging water down hole at the rate of several hundreds of gallons per minute! There are a few other things worth noting about this well:

- Based on the available water level data, water levels were relatively stable through about 2009.
- Around 2010, there was a significant drop in water levels and then water levels declined steadily since then.
- A nearby well, HARN 1094, was deepened in 2010 (discussed further, below). Thus, the sudden drop in water levels observed in MARI 51146 occurred around the same time as the deepening of HARN 1094, suggesting that after deepening, HARN 1094 may have begun commingling with a deeper aquifer, causing or contributing to a water level decline in the area.

There is another well in the Weaver Springs decline area, HARN 1990 (Attachment E), which has reported water level depths which are greater than the depth of the well, yet there is (again) no available record of the well deepening. As with the example above, unless there is some other information about this well that is not publicly available, no one knows how deep this well is or what other, deeper aquifers may have been encountered in the borehole. This suggests the strong possibility that this could also be a commingling well.

Further evidence of commingling wells is shown by the deepening of HARN 1094 (Attachment F), which is documented on the well log for HARN 51690. The deepening log shows that the well was deepened from 75 feet to 170 feet in 2010. The original well (HARN 1094) was reported to have a yield of 300 gpm, while the deepened well was reported to have a yield of 1,000 gpm. So, a deeper, high-yielding aquifer must have been encountered in the deepened portion of the borehole. The driller is supposed to provide an existing well/pre-deepening water level to show if there was a change in water levels resulting from the deepening. However, in the section on the well log for reporting this information, the driller just copied the original water level measurement as it was reported on the original well log. Therefore, while the deepening must have encountered a deeper, more productive aquifer, the driller failed to correctly report if there was a change in water levels resulting from the deepening. There are a couple of other things worth noting about this well deepening:

- Water levels in this well were decreasing following the deepening, but appeared to be stabilizing around 2018 to 2019.
- After 2019, the OWRD stopped monitoring water levels in this well, reporting the well was “dry,” suggesting that sometime around 2020, water levels had suddenly dropped, in one year, more than 34 feet (i.e., to the bottom of the well).

These are just a few examples of many similar things we have observed while reviewing the well logs in the area. We have found many other examples of issues suggesting problems from commingling wells and very many issues with just plain poor quality of data reporting on the well logs. In fact, we have found very few, if any, well logs without some reporting issues.

One interesting example of a well log deficiency is HARN 53111, which is the deepening of HARN 51448 or HARN 51871 (Attachment G), located near the center of the Weaver Springs decline area. The existing well/pre-deepening water level reported on the deepening well log

(HARN 53111) was deeper than the reported depth of the original well, which is, of course, impossible. This deepening was completed in July 2023. As a result of HB 2145 (2021), the Department was required to begin reviewing all well logs for compliance with well construction standards by July 1, 2022. So, HARN 53111 was supposedly reviewed under these new requirements. If so, how did the Department miss this glaring error? This also raises the question of how many other wells have been deepened without the driller submitting a well log for the deepening?

Our suspicions about commingling wells are also supported by the results of the USGS groundwater model reported in the Groundwater Model of the Harney Basin, Southeastern Oregon by Gingerich et al. (Scientific Investigations Report 2024-5017). The modeled groundwater contours for groundwater declines simulated in the various layers of the model during the winter (*i.e., when there is no discharge from irrigation*) show significant water level decline depressions centered around individual wells, one of which is mentioned above as a well that was deepened with no available deepening log, HARN 1990 (Attachment E) and another which is HARN 1095 (Attachment H). The main assumption for this model is the water-bearing hydrogeologic units within the basin all behave as one aquifer. If the basin is managed that way from a well construction aspect, then it becomes a self-fulfilling prophesy. Good examples of that are the Mosier, Mt. Angel, and Stayton-Sublimity areas.

All of this is to provide some evidence we have found that there is more to the problems in the Harney Basin than over-pumping. We didn't have to look very hard to get the impression that commingling wells could be making a significant, if not the major, contribution to the water level declines in the area. Thus far, the OWRD's proposed management strategies are based on the assumption that all of the declines are being caused by over-pumping of the aquifers. However, if a significant, if not the major, part of the problem is being caused by commingling wells, the currently proposed rules will be inappropriate to address all of the challenges, and, in fact, will do nothing to address the impacts from commingling wells.

Confining Units in the Basin

OWRD's Geology Report for the Harney Basin, Open-File Report 2021-01, describes two major, widespread geologic units identified as the Devine Canyon Ash-Flow Tuff and the Rattlesnake Ash-Flow Tuff. Despite the fact that ash flow tuffs characteristically have low-permeabilities, the report did not identify these two strata as potential confining units. These two geologic units generally consist of nonwelded to densely welded rhyolite tuffs, and they range in thickness from a few feet to over 200 feet. The cross-sections provided in the report show these two units can be mapped across the basin in an east-to-west direction and north-to-south direction across the basin. Thus, the available information suggests the presence of two confining units which are continuous across the basin. As such, we would expect that these confining units would act to hydraulically isolate the aquifers above and below them and, consequently, have significant effects on the hydrogeology in the basin.

The subsequent USGS groundwater report, Scientific Investigation Report 2021-5103, lumped the Devine Canyon Ash-flow Tuff and the Rattlesnake Ash-Flow Tuff together within the Older Basin fill hydrostratigraphic unit. Consequently, the USGS groundwater model used for developing the proposed management strategies in the basin does not incorporate these confining units in the model layering. The model was developed with the assumption that essentially all of the hydrogeologic units within the basin function as a single aquifer. This seems to be a glaring omission which suggests the groundwater model over-simplifies a

complex hydrogeologic system. These issues should raise serious concerns about the validity of the model and its results.

Summary

The technical issues discussed above, namely the apparent contribution to groundwater declines in the Harney Basin from improperly constructed, commingling wells, and apparent omission of potentially important confining units from the groundwater model, give us cause to question the OWRD's characterization of the basin's hydrogeology and the technical validity of the groundwater model.

Sincerely,



Expiration Date 8/1/26

Malia R. Kupillas, R.G.



Expiration Date 8/1/2026

Gregory E. Kupillas, R.G.

Attachments (working copies):

- A. USGS Fact Sheet, Page 4
- B. Cross Section
- C. Harney Basin Well Location Map
- D. Well Log HARN 51146 with Hydrograph and Water Level Data
- E. Well Log HARN 1990 with Hydrograph and Water Level Data
- F. Well Log HARN 1094 with Hydrograph and Water Level Data
- G. Well Log HARN 51448 with Hydrograph and Water Level Data
- H. Well Log HARN 1095 with Hydrograph and Water Level Data

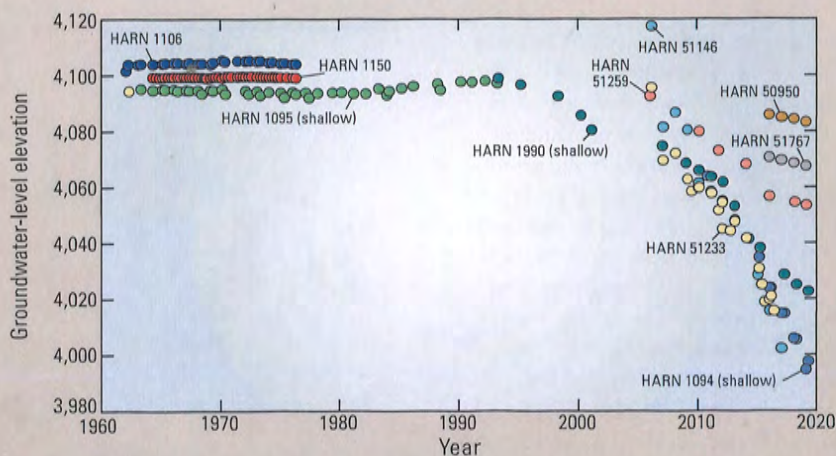
Weaver Spring/Dog Mountain—Focused, Rapid Groundwater-Level Decline

In the Weaver Spring/Dog Mountain area, pumping has lowered the water table more than 140 feet (ft) relative to pre-development levels and groundwater levels have declined as much as 8 feet per year (ft/yr) since 2016. In this area, much of the groundwater pumped for irrigation water is removed from highly permeable volcanic rocks and sediments. The volcanic rocks and sediments in this area are among the most productive in the Harney Basin lowlands. However, minimal recharge from precipitation or surface-water infiltration supplies this area. Furthermore, the highly permeable rocks and sediments being pumped have a limited spatial extent and are surrounded by much less permeable rocks and sediments. These low-permeability units cannot supply groundwater at a rate sufficient to balance the groundwater currently being extracted by irrigation wells tapping the more permeable units. The groundwater being pumped from this area was recharged thousands of years ago and the water removed from storage is only partially replenished by the inflow of equally ancient groundwater from the surrounding low-permeability rocks and sediments; as a result, groundwater levels decline.

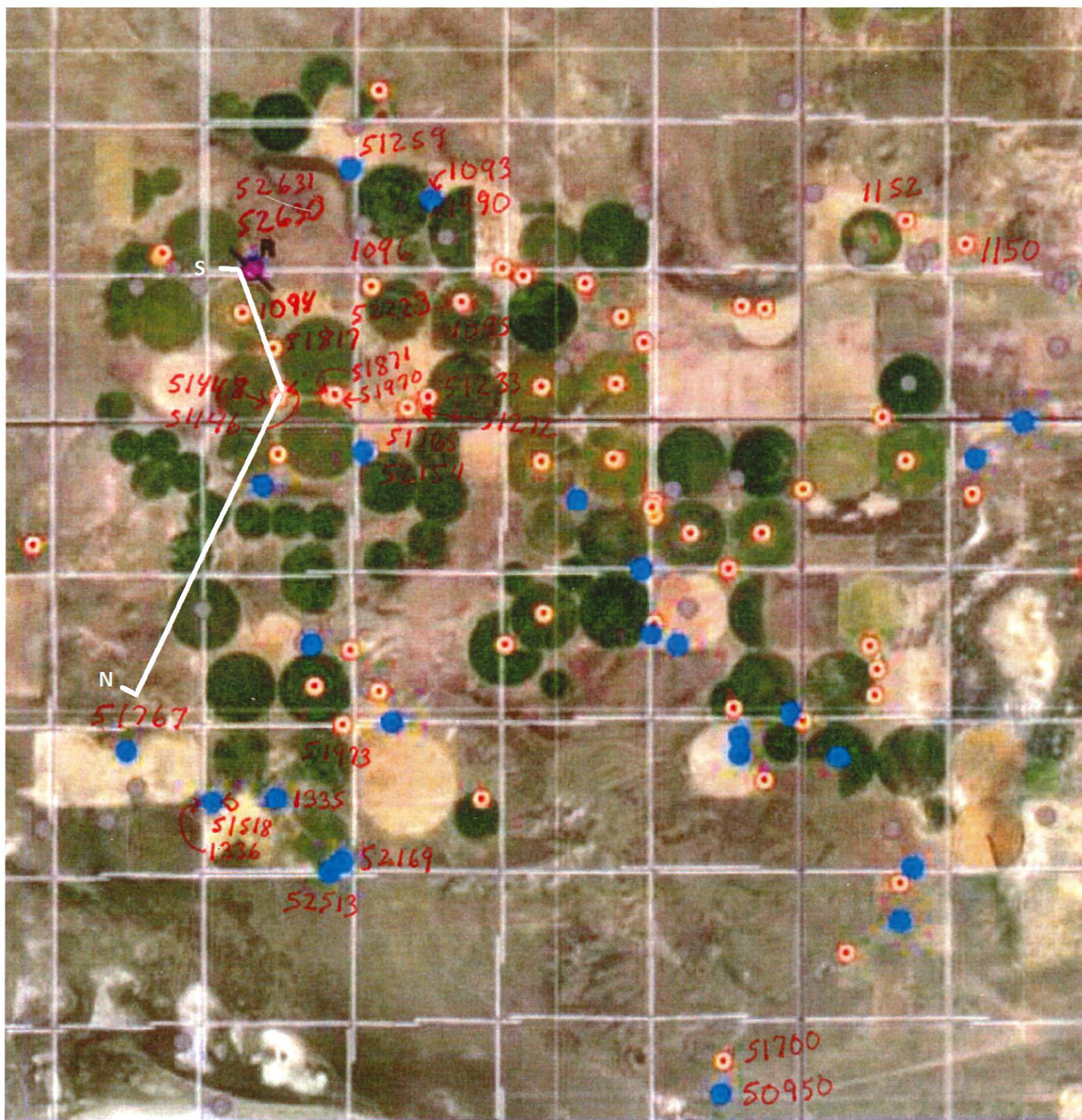
Prior to groundwater development in the west-central lowlands, groundwater flowed toward Harney Lake, where groundwater-level elevations were lowest. Groundwater levels in the Weaver Spring/Dog Mountain area are now nearly 90 ft lower than the bed of Harney Lake, which has caused local groundwater-flow paths to shift away from Harney Lake and toward the Weaver Spring/Dog Mountain pumping center.



Locations of selected groundwater-level sites and groundwater-level contours (in feet above North American Vertical Datum of 1988) in the Weaver Spring/Dog Mountain area, Harney Basin, southeastern Oregon. Contours from Gingerich and others, 2021. Background aerial image source: GoogleEarth™ 2019.



Groundwater levels (in feet above North American Vertical Datum of 1988) during 1960–2020. From Gingerich and others, 2022.



STATE OF OREGON
WATER SUPPLY WELL REPORT
(as required by ORS 537.765)

Instructions for completing this report are on the last page of this form.

WELL I.D. # L 266-15
START CARD # 155763

(1) LAND OWNER Name: Andy Root Well Number _____
Address: 10000 946
City: Burns State: OR Zip: 97720

(2) TYPE OF WORK
☒ New Well ☐ Deepening ☐ Alteration (repair/recondition) ☐ Abandonment

(3) DRILL METHOD:
☒ Rotary Air ☐ Rotary Mud ☐ Cable ☐ Auger
☐ Other _____

(4) PROPOSED USE:
☐ Domestic ☐ Community ☐ Industrial ☒ Irrigation
☐ Thermal ☐ Injection ☐ Livestock ☐ Other _____

(5) BORE HOLE CONSTRUCTION:
Special Construction approval ☐ Yes ☒ No Depth of Completed Well 125 ft.
Explosives used ☐ Yes ☒ No Type _____ Amount _____

HOLE SEAL
Diameter From To Material From To Sacks or pounds
20 0 38 8 ent 0 38 29 Sacks
16 38 105 Concrete 25 105 1 yrd
14 105 125 _____

How was seal placed: Method ☐ A ☐ B ☒ C ☐ D ☐ E
☐ Other _____

Backfill placed from _____ ft. to _____ ft. Material _____
Gravel placed from _____ ft. to _____ ft. Size of gravel _____

(6) CASING/LINER:
Diameter From To Gauge Steel Plastic Welded Threaded
Casing: 16 42 38 250 ☒ ☒ ☐
14 25 105 250 ☒ ☒ ☐
Liner: _____ ☐ ☐ ☐ ☐ ☐ ☐

Drive Shoe used ☐ Inside ☐ Outside ☐ None
Final location of shoe(s) _____

(7) PERFORATIONS/SCREENS:
☐ Perforations Method _____
☐ Screens Type _____ Material _____
From To Slot Number Diameter Tele/pipe Casing Liner
size size size size size
_____ ☐ ☐
_____ ☐ ☐
_____ ☐ ☐
_____ ☐ ☐

(8) WELL TESTS: Minimum testing time is 1 hour

☐ Pump ☐ Bailer ☒ Air ☐ Flowing
Yield gal/min Drawdown Drill stem at Time
1000+ 51 125 3 hr.

Temperature of water 63 Depth Artesian Flow Found _____
Was a water analysis done? ☒ Yes By whom _____
Did any strata contain water not suitable for intended use? ☐ Yes ☐ No
☐ Salty ☐ Muddy ☐ Odor ☐ Colored ☐ Other _____
Depth of strata: _____

(9) LOCATION OF WELL by legal description:
County Harney Latitude _____ Longitude _____
Township 25S N of Range 30E E of W. WM.
Section 33 SW 1/4 NE 1/4
Tax Lot 3609 Lot _____ Block _____ Subdivision _____
Street Address of Well (or nearest address) 1 Mi west of
End of Waver Springs Burns, OR

(10) STATIC WATER LEVEL:
74 ft. below land surface, Date 1-18-05
Artesian pressure _____ lb. per square inch Date _____

(11) WATER BEARING ZONES:

From	To	Estimated Flow Rate	SWL
<u>117</u>	<u>125</u>	<u>1000+</u>	<u>74</u>

(12) WELL LOG:

Ground Elevation 4150.6

Material	From	To	SWL
<u>Top Soil</u>	<u>0</u>	<u>8</u>	<u>-</u>
<u>Brown Sand</u>			
<u>Stone</u>	<u>8</u>	<u>21</u>	<u>-</u>
<u>Brown Clay</u>	<u>21</u>	<u>90</u>	<u>-</u>
<u>Stone</u>			
<u>Brown Fractured</u>			
<u>Basalt</u>	<u>90</u>	<u>100</u>	<u>-</u>
<u>Hard Gray</u>			
<u>Basalt</u>	<u>100</u>	<u>117</u>	<u>-</u>
<u>Red Brown</u>			
<u>Gray Cinders</u>			
<u>w/white</u>			
<u>Clay (w/)</u>	<u>117</u>	<u>125</u>	<u>74</u>
<u>Hard Brown</u>			
<u>Basalt</u>	<u>125</u>	<u>130</u>	<u>74</u>
<u>Water level now below bottom</u>			
<u>of well</u>			

Date started 1-12-05 Completed 1-18-05

(unbonded) Water Well Constructor Certification:

I certify that the work I performed on the construction, alteration, or abandonment of this well is in compliance with Oregon water supply well construction standards. Materials used and information reported above are true to the best of my knowledge and belief.

Signed _____ WWC Number _____ Date _____

(bonded) Water Well Constructor Certification:

I accept responsibility for the construction, alteration, or abandonment work performed on this well during the construction dates reported above. All work performed during this time is in compliance with Oregon water supply well construction standards. This report is true to the best of my knowledge and belief.

Signed Donald H. Root WWC Number 1521 Date 1-18-05

ORIGINAL - WATER RESOURCES DEPARTMENT FIRST COPY - CONSTRUCTOR SECOND COPY - CUSTOMER
WATER RESOURCES DEPT
SALEM, OREGON

Search Records

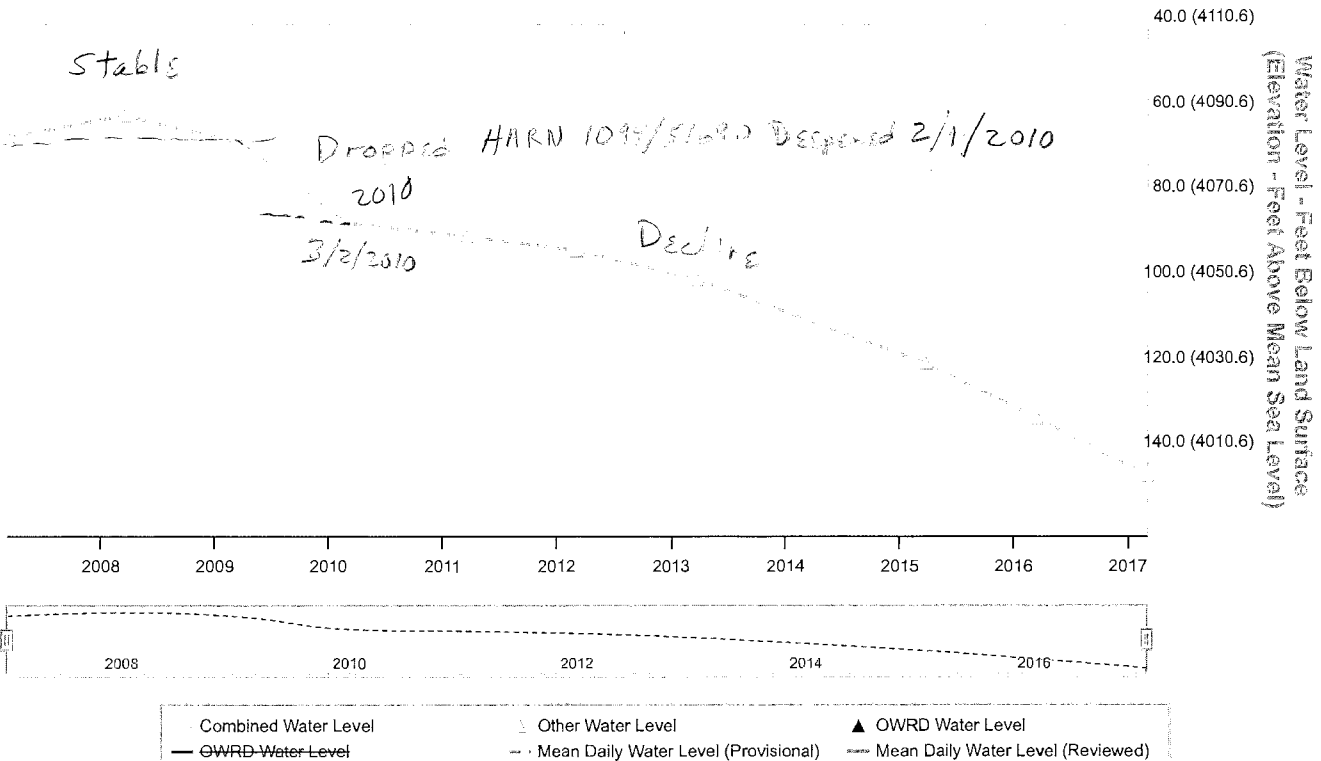
Well Log Id: or GW Logid: HARN0051146

Well Location: 25.00S/30.00E-33CDA Total Depth (bls): 125 ft Water Level Count: 10
Log ID: HARN 51146 [Well Log](#) Land Surface Elevation: 4150.6 ft Wtr Lvl Date Range: 3/07/2007 - 3/02/2017
Well Tag: 26615 Vertical Reference Datum: NAVD1988 Wtr Lvl Depth Min-Max: 61.4 - 145.87 ft
State Observation: Primary Use of Well: IRRIGATION Recorder Wtr Lvl Count: 0
USGS Site: Primary Aquifer System: Quaternary-Late Tertiary Vol & Volcaniclastic Aq Recorder Wtr Lvl Date Range: --
More information: [GWIS](#) [Groundwater Mapping Tool](#) Recorder Wtr Lvl Depth Min-Max: --

Groundwater Levels for HARN 51146

Zoom All

7 Mar 2007 → 2 Mar 2017



Source: Oregon Water Resources

Water Level Daily Water Level Lithology Construction

Measured Water Levels for HARN 51146

C III

All Fields

Search...

	Well	Date	Time	Water Level (BL...	Water Level Elev. (FT AMSL)	Organization	OWRD	Method	Status
1	HARN0051146	03/02/2017		145.87	4,004.73	CON	PCPR	ETAPE	STATIC
2	HARN0051146	03/16/2016		132.45	4,018.15	CON	PCPR	ETAPE	STATIC
3	HARN0051146	03/26/2015		119.55	4,031.05	CWRE	PCPR	ETAPE	STATIC
4	HARN0051146	03/24/2014				CON	PCPR	NOT MEASURED	UNKNOW
5	HARN0051146	03/26/2013		99.85	4,050.75	CON	PCPR	STEEL TAPE	UNKNOW
6	HARN0051146	03/06/2012		93	4,057.60	PMPI	PCPR	ETAPE	STATIC
7	HARN0051146	03/16/2011		89.75	4,060.85	PMPI	PCPR	ETAPE	STATIC
8	HARN0051146	03/02/2010		86.7	4,063.90	CON	PCPR	STEEL TAPE	STATIC
9	HARN0051146	03/19/2009		67.7	4,082.90	CON	PCPR	STEEL TAPE	STATIC
10	HARN0051146	03/13/2008		61.4	4,089.20	CON	PCPR	STEEL TAPE	STATIC
11	HARN0051146	03/07/2007		66.6	4,084.00	CON	PCPR	ETAPE	STATIC
12	HARN0051146	03/27/2006		30.6	4,120.00	CON	PCPR	STEEL TAPE	STATIC

13 HARN0051146

01/18/2005

74

4,076.60 DRLR

WLOG

REPORTED

UNKNOWN

Search took 0 sec

1-13 of 13

7 HARN
~~DOUG~~
1990

MAY 24 1993

25s/30e/27c

~~WATER RESOURCES DEPT.~~

(START CARD) # 49106

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Signed James H. K. K. K. Date 5-20-93

9809C 10/91

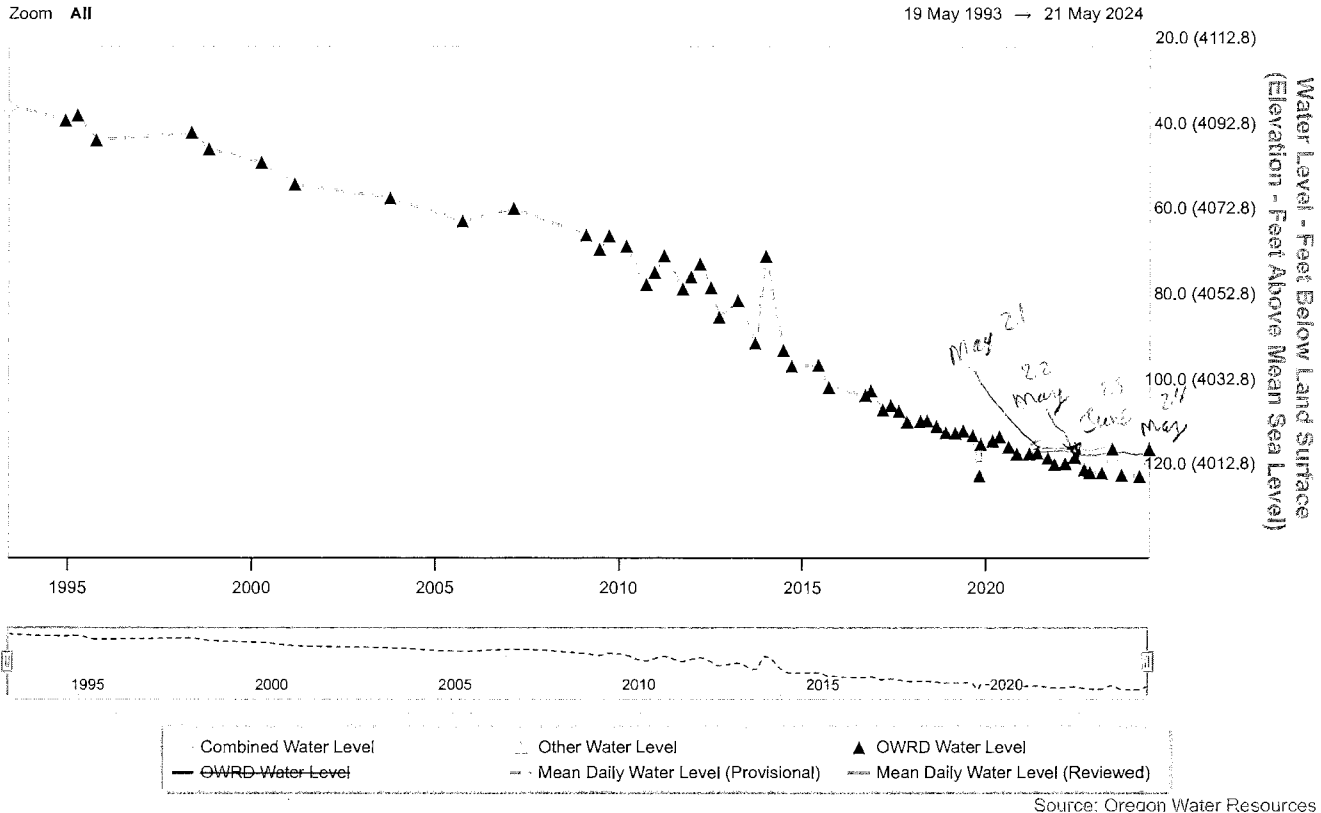
Page 196 of 628

Search Records

Well Log Id: or GW Logid:

Well Location:	25.00S/30.00E-27DBB	Total Depth (bls):	100 ft	Water Level Count:	62
Log ID:	HARN 1990 Well Log	Land Surface Elevation:	4132.83 ft	Wtr Lvl Date Range:	5/19/1993 - 5/21/2024
Well Tag:	---	Vertical Reference Datum:	NAVD1988	Wtr Lvl Depth Min-Max:	34 - 120.95 ft
State Observation:	1096	Primary Use of Well:	IRRIGATION	Recorder Wtr Lvl Count:	0
USGS Site:		Primary Aquifer System:		Recorder Wtr Lvl Date Range:	---
More information:	GWIS	Groundwater Mapping Tool		Recorder Wtr Lvl Depth Min-Max:	---

Groundwater Levels for HARN 1990



Water Level									
Daily Water Level									
Lithology									
Construction									
Measured Water Levels for HARN 1990									
All Fields Search...									
Well	Date	Time	Water Level (BL...	Water Level Elev. (FT AMSL)	Organization	OWRD	Method	Status	
1 HARN0001990	05/21/2024	09:16:00	114.6	4,018.23	OWRD	SOW	ETAPE	STATI	
2 HARN0001990	02/21/2024	08:48:00	120.95	4,011.88	OWRD	SOW	ETAPE	STATI	
3 HARN0001990	09/01/2023	06:47:00	120.55	4,012.28	OWRD	SOW	ETAPE	STATI	
4 HARN0001990	06/02/2023	13:24:00	114.45	4,018.38	OWRD	SOW	ETAPE	STATI	
5 HARN0001990	02/14/2023	08:58:00	120.15	4,012.68	OWRD	SOW	ETAPE	STATI	
6 HARN0001990	10/13/2022	13:07:00	120.05	4,012.78	OWRD	SOW	ETAPE	STATI	
7 HARN0001990	09/01/2022	06:54:00	119.35	4,013.48	OWRD	SOW	ETAPE	STATI	
8 HARN0001990	05/27/2022	07:00:00	116.45	4,016.38	OWRD	SOW	ETAPE	STATI	
9 HARN0001990	02/23/2022	14:10:00	117.85	4,014.98	OWRD	SOW	ETAPE	STATI	
10 HARN0001990	11/03/2021	07:33:00	118.05	4,014.78	OWRD	SOW	ETAPE	STATI	
11 HARN0001990	08/25/2021	07:03:00	116.6	4,016.23	OWRD	SOW	ETAPE	STATI	
12 HARN0001990	05/18/2021	07:44:00	115.35	4,017.48	OWRD	SOW	ETAPE	STATI	
13 HARN0001990	03/02/2021	09:21:00	115.6	4,017.23	OWRD	SOW	ETAPE	STATI	

18	HARN0001990	11/08/2019	08:37:00	113.35	4,019.48	OWRD	SOW	ETAPE	STATI
19	HARN0001990	10/19/2019	07:31:00	120.75	4,012.08	OWRD	SOW	ETAPE	STATI
20	HARN0001990	08/15/2019	09:42:00	111.35	4,021.48	OWRD	SOW	ETAPE	STATI
21	HARN0001990	05/07/2019	13:10:00	110.25	4,022.58	OWRD	SOW	ETAPE	STATI
22	HARN0001990	02/26/2019	09:36:00	110.75	4,022.08	OWRD	SOW	ETAPE	STATI

Search took 0.001 sec

1-23 of 80

Site Identification [\(Click to Expand...\)](#)

GW LogID: HARN 1094 [Well Log Database](#)
GW Well Tag Number: 102506
Tag Verified on Well: Yes
Site Type: WELL
Primary Use: UNUSED
Unused Status:
Site Source Organization:
Site Source OWRD:
Established By: KARL WOZNAK
Established Date: 02/08/2009
Bonded Company: WOODRUFF DRILLING
Stage: COMPLETE

Location [\(Click to Expand...\)](#)

Latitude/Longitude
Latitude: 43.36333744 **Horiz. Error:** 0.30
Longitude: -119.13357020 **Datum:** WGS1984
Lat/Long Source: GPS SURVEY GRADE
Location
TRSQQ: WM 25.00S30.00E33NENW
Tax Map:
Taxlot:
24 Quad: NORTHWEST HARNEY LAKE
Basin: 12 - Malheur Lake
County: Harney
WM District: 10
WM Region: E
LSD Elev: 4133.77 **Accy:** 0.31 **Datum:** NAVD1988
Elev Source: SURVEY GPS
[Groundwater Mapping Tool](#)

ft.



Maxar | Oregon Wa

Water Rights [\(Click to Expand...\)](#)Well Construction History [\(Click to Expand...\)](#)

Well Construction History

Well Log Id	Well Log	Work Type	Startcard	Well Tag	Owner Name	First Water	Max Case. Diam.	Max Case. Depth.	Max Seal Depth.	Max Der
HARN 1094	Log	NEW			CARL LEATHERS	33.00	14			
HARN 51690	Log	DEEPENING		102506	ANDY ROOT	70.00	14			

Well Log	Aquifer	Aq at Max Depth	System Aquifer	Regional USGS
HARN 1094	Quaternary-Late Tertiary Vol & Volcaniclastic Aq	Quaternary-Late Tertiary Vol & Volcaniclastic Aq	Quaternary-Late Tertiary Volcanic and Volcaniclastic Rock Aquifers	
HARN 51690	Quaternary-Late Tertiary Vol & Volcaniclastic Aq	Quaternary-Late Tertiary Vol & Volcaniclastic Aq	Quaternary-Late Tertiary Volcanic and Volcaniclastic Rock Aquifers	

Well Test

No data matches search criteria.

Lithology [\(Click to Expand...\)](#)Well Construction [\(Click to Expand...\)](#)Measured Water Level [\(Click to Expand...\)](#)Stratigraphy [\(Click to Expand...\)](#)Available Data [\(Click to Expand...\)](#)Other Documents/Images [\(Click to Expand...\)](#)[View Hydrograph](#)

Search Records

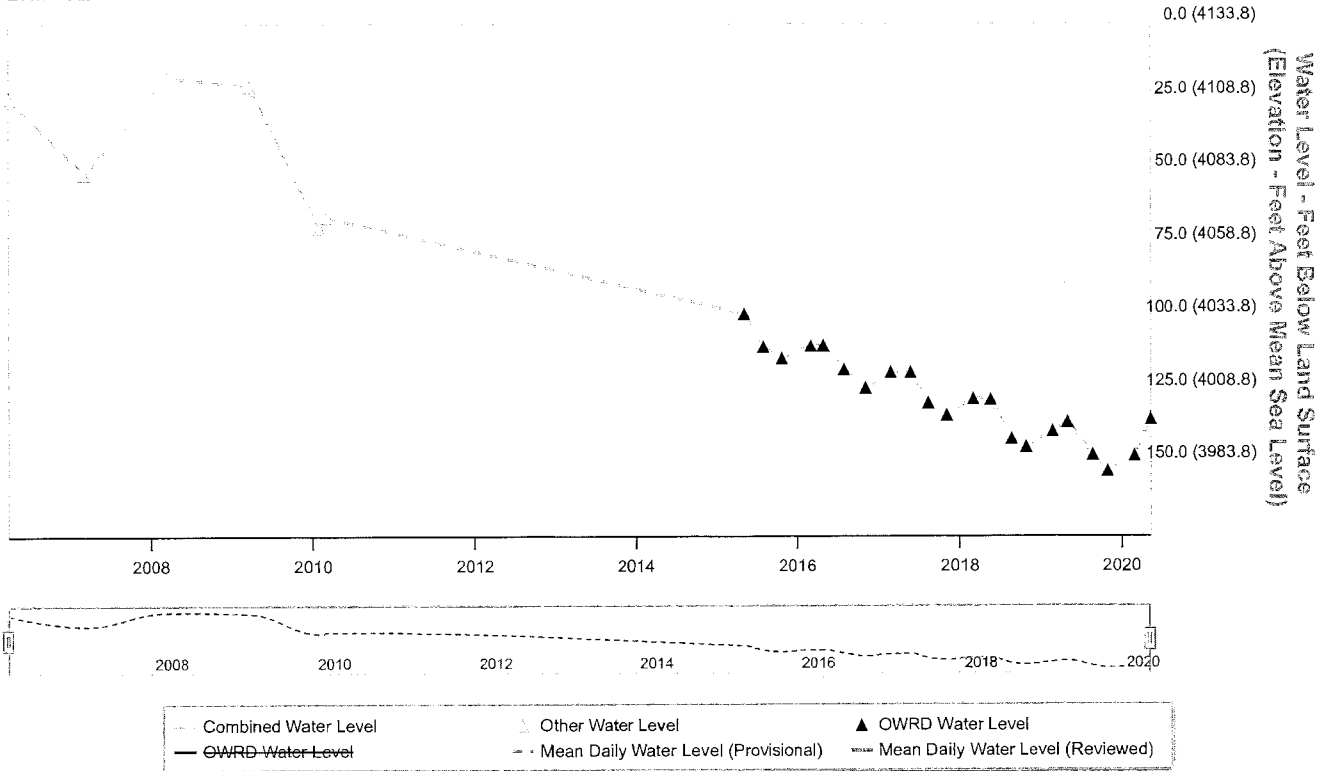
Well Log Id: or GW LogId: HARN0001094

Well Location: 25.00S/30.00E-33BA-	Total Depth (bls): 170 ft	Water Level Count: 27
Log ID: HARN 1094 Well Log	Land Surface Elevation: 4133.77 ft	Wtr Lvl Date Range: 3/27/2006 - 5/06/2020
Well Tag: 102506	Vertical Reference Datum: NAVD1988	Wtr Lvl Depth Min-Max: 18.2 - 152.83 ft
State Observation:	Primary Use of Well: UNUSED	Recorder Wtr Lvl Count: 0
USGS Site:	Primary Aquifer System: Quaternary-Late Tertiary Vol & Volcaniclastic Aq	Recorder Wtr Lvl Date Range: --
More information: GWIS	Groundwater Mapping Tool	Recorder Wtr Lvl Depth Min-Max: --

Groundwater Levels for HARN 1094

Zoom All

27 Mar 2006 → 6 May 2020



Source: Oregon Water Resources

Measured Water Levels for HARN 1094									
Well	Date	Time	Water Level (BL...)	Water Level Elev. (FT AMSL)	Organization	OWRD	Method	Status	
1 HARN0001094	08/17/2021	13:35:00			OWRD	GWTR	NOT MEASURED	DRY	
2 HARN0001094	05/18/2021	12:53:00			OWRD	GWTR	NOT MEASURED	DRY	
3 HARN0001094	02/23/2021	12:49:00			OWRD	GWTR	NOT MEASURED	DRY	
4 HARN0001094	10/27/2020	10:22:00			OWRD	GWTR	NOT MEASURED	DRY	
5 HARN0001094	08/11/2020	14:12:00			OWRD	GWTR	NOT MEASURED	DRY	
6 HARN0001094	05/06/2020	09:30:00	135.06	3,998.71	OWRD	BURN	ETAPE	STATI	
7 HARN0001094	02/26/2020	12:54:00	147.65	3,986.12	OWRD	GWTR	ETAPE	STATI	
8 HARN0001094	10/29/2019	13:28:00	152.83	3,980.94	OWRD	GWTR	ETAPE	STATI	
9 HARN0001094	08/19/2019	17:10:00	147.34	3,986.43	OWRD	GWTR	ETAPE	STATI	
10 HARN0001094	05/07/2019	13:43:00	136.26	3,997.51	OWRD	GWTR	ETAPE	STATI	
11 HARN0001094	02/26/2019	11:17:00	139.18	3,994.59	OWRD	GWTR	ETAPE	STATI	
12 HARN0001094	10/30/2018	13:35:00	144.63	3,989.14	OWRD	GWTR	ETAPE	STATI	

17	HARN0001094	08/14/2017	14:34:00	129.58	4,004.19	OWRD	GWTR	ETAPE	STATI
18	HARN0001094	05/23/2017	11:03:00	119.08	4,014.69	OWRD	GWTR	ETAPE	STATI
19	HARN0001094	02/25/2017	16:21:00	119.07	4,014.70	OWRD	GWTR	ETAPE	STATI
20	HARN0001094	10/31/2016	10:34:00	124.5	4,009.27	OWRD	GWTR	ETAPE	STATI
21	HARN0001094	07/26/2016	16:36:00	117.99	4,015.78	OWRD	GWTR	ETAPE	STATI
22	HARN0001094	04/27/2016	17:12:00	109.99	4,023.78	OWRD	GWTR	ETAPE	STATI

Search took 0 sec

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Well Report Query Results GPS points, where available are at the far right of the table. Click link to view on map

Township: 25 S, Range: 30 E, Sections: 29

Well Log	Details	T-R-S/ Q-Q-Q	Taxlot	Street of Well	Owner	Company	Special Standards	Well Type	First Water	Completed Depth	Static Water Level	Yield	Completed Date	Received Date	Bonded Constructor	Startcard	Well Id #	New	Abandon	Deepen	Alteration	Conversion	Domestic	Irrigation	Community	Livestock	Industrial	Injection	Thermal	Dewatering	Piezometer	Latitude Longitude		
HARN 1094 Groundwater Info	Details	25.00S-30.00E-29 SW-SE		W ON WEAVER SPRINGS RD APROX 7 MILES	LEATHERS, CARL 22300 SE STARK GRESHAM OR 97030			W		75.00	33.00	300.0	12/01/1986	12/19/1986	WOODRUFF, HAROLD WOODRUFF DRILLING			✓					✓										43.3633 -119.14	
HARN 51690 Groundwater Info	Details	25.00S-30.00E-29 SW-SE	2600	28700 WEAVER SPRINGS RD	ROOT, ANDY	ACW 524 N HWY 20 HINES OR 97738		W	70.00	170.00	70.00	1000.0	02/01/2010	02/04/2010	RILEY, TIMOTHY K WESTERN DRILLING CO	1009318	102505				✓		✓										43.3675 -119.14	
HARN 51969 Exempt Use Map	Details	25.00S-30.00E-29 SE-SE	2600	28062 WEAVER SPRINGS LN, BURNS,OR. 97720	ROOT, ANDY	ACW PO BOX 3 BURNS OR 97720		W	92.00	250.00	92.00	900.0	08/21/2013	09/02/2013	RILEY, TIMOTHY K WESTERN DRILLING CO	1020717	111172	✓							✓								43.3675 -119.14	
HARN 52591 Groundwater Info	Details	25.00S-30.00E-29 SE-SE	2600	29062 WEAVER SPRINGS LN. BURNS OR. 97720	ROOT, ANDY	ACW P.O BOX 326 BURNS OR 97720		W	155.00	330.00	116.00	1500.0	10/03/2016	10/04/2016	FRY, ARTHUR L FRY INDUSTRIES INC	1032027	122964	✓						✓									43.3697 -119.14	
HARN 52590 Groundwater Info	Details	25.00S-30.00E-29 SE-SE	2600	29062 WEAVER SPRINGS LN. BURNS OR. 97720	ROOT, ANDY	ACW P.O BOX 326 BURNS OR 97720		W	140.00	340.00	111.00	500.0	10/04/2016	10/04/2016	FRY, ARTHUR L FRY INDUSTRIES INC	1031827	122963	✓						✓									43.3675 -119.14	
HARN 52121 Groundwater Info	Details	25.00S-30.00E-29 NE-SE	2600	29062 WEAVER SPRINGS LN, BURNS,OR.97720	ROOT, ANDY	ACW P.O.BOX 326 BURNS OR 97720		W	105.00	385.00	92.00	2500.0	10/21/2014	10/27/2014	FRY, ARTHUR L FRY INDUSTRIES INC	1024513	116668	✓						✓									43.3690 -119.14	
HARN 51145	Details	25.00S-30.00E-29 NE-SW	2500	WEAVER SPRINGS RD	ROOT, ANDY PO BOX 946 BURNS OR 97720			W	398.00	420.00	320.00	10.0	02/02/2005	02/17/2005	READ, DONALD W DONALD W. READ	155962	26616	✓																
HARN 52141 Exempt Use Map	Details	25.00S-30.00E-29 SW-SE	2600	28700 WEAVER SPRINGS RD., BURNS, OR. 97720		RATTLESNAKE CREEK, LAND AND CATTLE CO. 524 N. HWY 20 HINES OR 97738		W	94.00	503.00	92.00	100.0	12/26/2014	01/12/2015	FRY, ARTHUR L FRY INDUSTRIES INC	1024841	116669	✓						✓										43.3632 -119.13
HARN 52170 Groundwater Info	Details	25.00S-30.00E-29 NE-SE	2600	29062 WEAVER SPRINGS LN. BURNS, OR.	ROOT, ANDY	ACW P.O.BOX 326 BURNS OR 97720		W	170.00	525.00	92.00	700.0	04/03/2015	04/14/2015	FRY, ARTHUR L FRY INDUSTRIES INC	1025710	117161	✓						✓									43.3690 -119.14	

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HARN	51871
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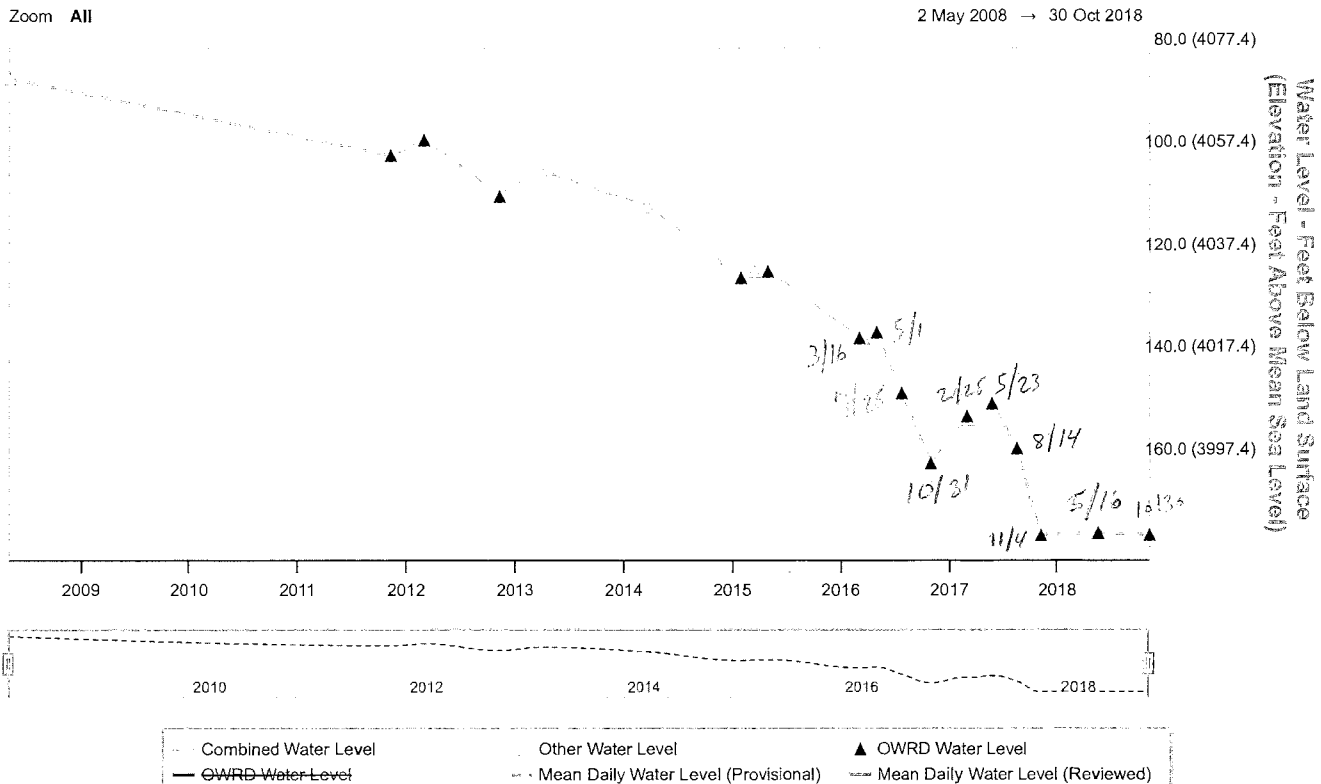
ORIGINAL LOG #

Search Records

Well Log Id: or GW Logid:

Well Location: 25.00S/30.00E-33CD-	Total Depth (bls): 200 ft	Water Level Count: 23
Log ID: HARN 51448 Well Log	Land Surface Elevation: 4157.43 ft	Wtr Lvl Date Range: 5/02/2008 - 10/30/2018
Well Tag: 93552	Vertical Reference Datum: NAVD1988	Wtr Lvl Depth Min-Max: 86 - 175.23 ft
State Observation:	Primary Use of Well: IRRIGATION	Recorder Wtr Lvl Count: 0
USGS Site:	Primary Aquifer System: Quaternary-Late Tertiary Vol & Volcaniclastic Aq	Recorder Wtr Lvl Date Range: ---
More Information: GWIS	Groundwater Mapping Tool	Recorder Wtr Lvl Depth Min-Max: ---

Groundwater Levels for HARN 51448



Source: Oregon Water Resources

Water Level									
Daily Water Level									
Lithology									
Construction									
Measured Water Levels for HARN 51448									
Well	Date	Time	Water Level (BL...	Water Level Elev. (FT AMSL)	Organization	OWRD	Method	Status	
1 HARN0051448	10/30/2018	14:06:00	175.17	3,982.26	OWRD	GWTR	ETAPE	STATI	▲
2 HARN0051448	08/21/2018	14:20:00			OWRD	GWTR	NOT MEASURED	PUMP	
3 HARN0051448	05/16/2018	09:34:00	174.74	3,982.69	OWRD	GWTR	ETAPE	STATI	
4 HARN0051448	02/27/2018	16:44:00			OWRD	GWTR	NOT MEASURED	PUMP	
5 HARN0051448	11/04/2017	11:00:00	175.23	3,982.20	OWRD	GWTR	ETAPE	STATI	
6 HARN0051448	08/14/2017	15:02:00	158.2	3,999.23	OWRD	GWTR	ETAPE	STATI	
7 HARN0051448	05/23/2017	11:51:00	149.41	4,008.02	OWRD	GWTR	ETAPE	STATI	
8 HARN0051448	03/02/2017		152.58	4,004.85	CWRE	PCPR	ETAPE	STATI	
9 HARN0051448	02/25/2017	15:33:00	151.85	4,005.58	OWRD	GWTR	ETAPE	STATI	
10 HARN0051448	02/25/2017	15:17:00	151.85	4,005.58	OWRD	GWTR	ETAPE	STATI	
11 HARN0051448	10/31/2016	11:17:00	161.12	3,996.31	OWRD	GWTR	ETAPE	STATI	
12 HARN0051448	07/25/2016	16:48:00	147.41	4,010.02	OWRD	GWTR	ETAPE	STATI	

17	HARN0051448	05/01/2015	12:00:00	123.54	4,033.89	OWRD	GWTR	ETAPE	STATI
18	HARN0051448	03/16/2015		123.65	4,033.78	CWRE	PCPR	STEEL TAPE	STATI
19	HARN0051448	01/29/2015	12:07:00	124.93	4,032.50	OWRD	GWTR	ETAPE	STATI
20	HARN0051448	03/24/2014		111.05	4,046.38	CON	PCPR	ETAPE	STATI
21	HARN0051448	03/26/2013		103.78	4,053.65	CON	PCPR	ETAPE	STATI
22	HARN0051448	11/07/2012	09:23:00	108.86	4,048.57	OWRD	GWTR	ETAPE	UNKN

Search took 0 sec

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Well Report Query Results *GPS points, where available are at the far right of the table. Click link to view on map*

Township: 25 S, Range: 30 E, Sections: 33

Well Log	Details	T-R-S/ Q-Q-Q	Taxlot	Street of Well	Owner	Company	Special Standards	Well Type	First Water	Completed Depth	Static Water Level	Yield	Completed Date	Received Date	Bonded Constructor	Startcard	Well Id #	New	Abandon	Deepen	Alteration	Conversion	Domestic	Irrigation	Community	Livestock	Industrial	Injection	Thermal	Dewatering	Piezometer	Latitude	
HARN 1094 Version 2 Groundwater Info	Details	25.00S-30.00E-33 SW-SE		W ON WEAVER SPRINGS RD APPROX 7 MILES	LEATHERS, CARL 22300 SE STARK GRESHAM OR 97030			W		75.00	33.00	300.0	12/01/1986	12/19/1986	WOODRUFF, HAROLD WOODRUFF DRILLING		102505	✓					✓									43.3555 -119.128	
HARN 51146 Groundwater Info	Details	25.00S-30.00E-33 SW-NE	3600	WEAVER SPRINGS RD	ROOT, ANDY PO BOX 946 BURNS OR 97720			W	117.00	125.00	74.00	1000.0	01/18/2005	02/17/2005	READ, DONALD W DONALD W. READ	155963	28615	✓					✓									43.3555 -119.128	
HARN 51817 Groundwater Info	Details	25.00S-30.00E-33 SE-NW	2600	29062 WEAVER SPRINGS ROAD, BURNS, OR, 97720		ACW PO BOX 3 BURNS OR 97720		W	88.00	170.00	88.00	1000.0	10/21/2011	11/02/2011	RILEY, TIMOTHY K WESTERN DRILLING CO	1015160	107659	✓					✓									43.3558 -119.128	
HARN 51853 Exempt Use Map	Details	25.00S-30.00E-33 SW-SW	2600	29062 WEAVER SPRINGS RD, BURNS, OR, 97720		ACW PO BOX 3 BURNS OR 97720		W	103.00	188.00	103.00	500.0	06/01/2012	06/18/2012	RILEY, TIMOTHY K WESTERN DRILLING CO	1016768	107672	✓					✓									43.3551 -119.128	
HARN 51448 Groundwater Info	Details	25.00S-30.00E-33 SW-SE	3600	WEAVER SPRINGS RD; END OF PAVEMENT		RATTLESNAKE LAND AND CATTLE CO. 524 HWY 20 N HINES OR 97738		W	107.00	200.00	86.00	4000.0	05/01/2008	05/07/2008	FRY, ARTHUR L FRY INDUSTRIES INC	197372	93552	✓					✓									43.3550 -119.128	
HARN 51871 Groundwater Info	Details	25.00S-30.00E-33 NE-SE	2600	29062 WEAVER SPRINGS ROAD, BURNS, OR,		ACW PO BOX 3 BURNS OR 97720		W	94.00	232.00	94.00	800.0	08/15/2012	08/27/2012	RILEY, TIMOTHY K WESTERN DRILLING CO	1017370	109033	✓					✓									43.3555 -119.128	
HARN 51446 Groundwater Info	Details	25.00S-30.00E-33 NE-NE	3700			RATTLESNAKE CREEK LAND AND CATTLE CO. 524 N HWY 20 HINES OR 97738		W	140.00	280.00	92.00	1000.0	02/10/2008	04/28/2008	SEARCH, TOM SEARCH DRILLING INC	189552	104470	✓					✓									43.3496 -119.128	
HARN 52153 Exempt Use Map	Details	25.00S-30.00E-33 SW-NE	3600	28700 WEAVER SPRINGS RD., BURNS, OR, 97720		RATTLESNAKE CREEK, LAND AND CATTLE CO. 524 N. HWY 20 HINES OR 97738		W	94.00	300.00	65.00	100.0	02/11/2015	03/01/2015	FRY, ARTHUR L FRY INDUSTRIES INC	1024842	116673	✓					✓									43.3557 -119.128	
HARN 51970 Groundwater Info	Details	25.00S-30.00E-33 NE-SE	2600	29062 WEAVER SPRINGS RD, BURNS, OR, 97720	ROOT, ANDY	ACW PO BOX 3 BURNS OR 97720		W	107.00	310.00	107.00	1000.0	08/24/2013	09/02/2013	RILEY, TIMOTHY K WESTERN DRILLING CO	1020822	111173	✓					✓									43.3555 -119.121	
HARN 52647 Groundwater Info	Details	25.00S-30.00E-33 SE-SE	2600	29062 WEAVER SPRINGS LN, BURNS OR, 97720	ROOT, ANDY	ACW P.O. BOX 3 HINES OR 97738		W	280.00	340.00	138.00	15.0	06/06/2017	06/06/2017	FRY, ARTHUR L FRY INDUSTRIES INC	1034510	124488	✓							✓								

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E. K. Williams
Oregon
Latitude
Longitude

12

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Well Report Query Results GPS points, where available are at the far right of the table. Click link to view on map

Township: 25 S, Range: 30 E, Sections: 33

Well Log	Details	T-R-S/ QQ-Q	Taxlot	Street of Well	Owner	Company	Special Standards	Well Type	First Water	Completed Depth	Static Water Level	Yield	Completed Date	Received Date	Bonded Constructor	StarCard	Well Id #	New	Abandon	Deepen	Alteration	Conversion	Domestic	Irrigation	Community	Livestock	Industrial	Injection	Thermal	Dewatering	Piezometer	Latitude Longitude
HARN 52674 Groundwater Info	Details	25.00S-30.00E-33 SW-NE	2600	29062 WEAVER SPRINGS LN. BURNS OR. 97720	ROOT, ANDY	ACW P.O. BOX 3 BURNS OR 97720		W	142.00	400.00	142.00	1000.0	08/30/2017	09/10/2017	FRY, ARTHUR L FRY INDUSTRIES INC	1035610	126386	✓					✓									43.3600, -119.1295
HARN 53111	Details	25.00S-30.00E-33 SE-SE	3600	WEAVER SPRINGS RD BURNS OR 97720		SILVER SAGE FARM 18555 SW TETON AVE TUALATIN OR 97062		W		770.00	243.00	496.0	07/10/2023	08/08/2023	NELSON, JAY SURETAP SPRINGS LLC	1060826	109033		✓				✓									43.3554, -119.1219
1 2																																

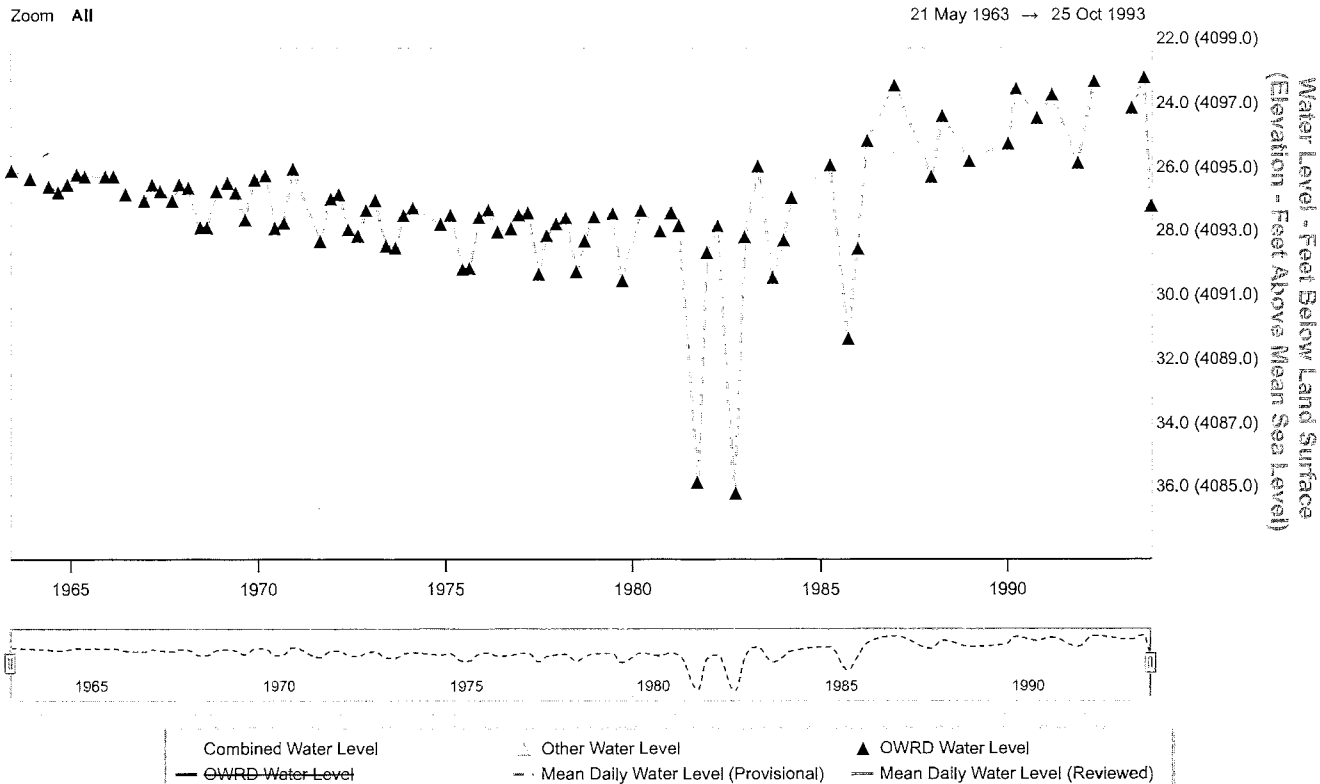
[Download Data](#)

Search Records

Well Log Id: or GW Logid:

Well Location: 25.00S/30.00E-34AB-	Total Depth (bls): 97 ft	Water Level Count: 88
Log ID: HARN 1095 Well Log	Land Surface Elevation: 4121 ft	Wtr Lvl Date Range: 5/21/1963 - 10/25/1993
Well Tag: ---	Vertical Reference Datum: NGVD1929	Wtr Lvl Depth Min-Max: 22.95 - 35.96 ft
State Observation: 177	Primary Use of Well: ABANDONED	Recorder Wtr Lvl Count: 0
USGS Site:	Primary Aquifer System:	Recorder Wtr Lvl Date Range: ---
More information: GWIS	Groundwater Mapping Tool	Recorder Wtr Lvl Depth Min-Max: ---

Groundwater Levels for HARN 1095



Source: Oregon Water Resources

Measured Water Levels for HARN 1095									
Water Level Daily Water Level Lithology Construction									
III All Fields Search...									
Well	Date	Time	Water Level (BL...	Water Level Elev. (FT AMSL)	Organization	OWRD	Method	Status	
1 HARN0001095	05/02/1994				OWRD	SOW	NOT MEASURED	OTHE	
2 HARN0001095	04/20/1994				OWRD	SOW	NOT MEASURED	UNKN	
3 HARN0001095	10/25/1993		26.97	4,094.03	OWRD	SOW	UNKNOWN	UNKN	
4 HARN0001095	10/20/1993	10:25:00	26.97	4,094.03	OWRD	SOW	STEEL TAPE	UNKN	
5 HARN0001095	08/12/1993	18:20:00	22.95	4,098.05	OWRD	SOW	UNKNOWN	UNKN	
6 HARN0001095	04/14/1993		23.9	4,097.10	OWRD	SOW	STEEL TAPE	UNKN	
7 HARN0001095	11/10/1992		24.97	4,096.03	OWRD	SOW	STEEL TAPE	RISIN	
8 HARN0001095	08/21/1992		28.9	4,092.10	OWRD	SOW	STEEL TAPE	PUMP	
9 HARN0001095	04/14/1992	14:00:00	23.07	4,097.93	OWRD	SOW	STEEL TAPE	UNKN	
10 HARN0001095	11/05/1991	09:35:00	25.61	4,095.39	OWRD	SOW	STEEL TAPE	UNKN	
11 HARN0001095	09/04/1991				OWRD	SOW	NOT MEASURED	PUMP	
12 HARN0001095	03/06/1991		23.48	4,097.52	OWRD	SOW	STEEL TAPE	UNKN	
13 HARN0001095	10/17/1990		24.2	4,096.80	OWRD	SOW	STEEL TAPE	UNKN	

18	HARN0001095	12/19/1988	25.55	4,095.45	OWRD	SOW	STEEL TAPE	UNKN
19	HARN0001095	09/16/1988	25.98	4,095.02	OWRD	SOW	STEEL TAPE	RISIN
20	HARN0001095	06/24/1988	26.3	4,094.70	OWRD	SOW	STEEL TAPE	RISIN
21	HARN0001095	03/29/1988	24.15	4,096.85	OWRD	SOW	STEEL TAPE	UNKN
22	HARN0001095	12/21/1987	26.05	4,094.95	OWRD	SOW	STEEL TAPE	UNKN

Search took 0.001 sec

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Well Logs Sorted By Depth

Well Report Query Results GPS points, where available are at the far right of the table. Click link to view on map

Township: 25 S, Range: 30 E, Sections: 34

Well Log	Details	T-R-S/ Q-Q-Q	Taxlot	Street of Well	Owner	Company	Special Standards	Well Type	First Water	Completed Depth	Static Water Level	Yield	Completed Date	Received Date	Bonded Constructor	Startcard	Well Id #	New	Abandon	Deepen	Alteration	Conversion	Domestic	Irrigation	Community	Livestock	Industrial	Injection	Thermal	Dewatering	Piezometer	Latitude Longitude
HARN 51334 Groundwater Info	Details	25.00S-30.00E-34		END OF WEAVER RD; W 0.5 MILES	ROOT, ANDY PO BOX 946 BURNS OR 97720			W						03/09/2007	READ, DONALD W DONALD W READ		90072				✓		✓									43.3551, -119.1091
HARN 1095 Groundwater Info	Details	25.00S-30.00E-34 -NW			REED, FORREST L BOX 342 PARMA ID			W		97.00	27.00	600.0	12/28/1959	01/22/1960	LAND OWNER			✓					✓									43.3645, -119.1043
HARN 1863 Groundwater Info	Details	25.00S-30.00E-34 NW-NE		WEAVER SPRINGS ROAD	STILLS, DOUG PO BOX 247 CULVER OR 97734			W	61.00	110.00	28.00	2003.0	11/14/1983	01/23/1991	DAVIDSON, N GORDON			✓					✓									43.3638, -119.1041
HARN 51233 Groundwater Info	Details	25.00S-30.00E-34 SE-SW			VOEGTLY, RAYMOND 240 N EGAN BURNS OR 97720			W		165.00	34.00	780.0	05/11/1962	01/13/2006	KOENEMAN, EDGAR L		90072						✓									43.3551, -119.1091
HARN 1096 Groundwater Info	Details	25.00S-30.00E-34 NW-NW		WELL 8	VOEGTLY, RAYMOND 240 N EGAN BURNS OR 97720			W		209.00		700.0	05/21/1962	05/29/1962	KOENEMAN, EDGAR L		114129	✓					✓									43.3658, -119.1166
HARN 52223 Exempt Use Map Groundwater Info	Details	25.00S-30.00E-34 NW-NW	800	29062 WEAVER SPRINGS LN., BURNS	ROOT, ANDY	ACW P.O.BOX 326 BURNS OR 97720		W	116.00	220.00	116.00	300.0	07/01/2015	07/01/2015	FRY, ARTHUR L FRY INDUSTRIES INC	1026925	118853	✓						✓								43.3657, -119.1167
HARN 51272 Groundwater Info	Details	25.00S-30.00E-34 SE-SW	2002	END OF WEAVER SPRINGS RD	ROOT, ANDY PO BOX 946 BURNS OR 97720			W	349.00	375.00	98.00	550.0	04/30/2006	05/24/2006	READ, DONALD W DONALD W. READ	169131	72702	✓						✓								43.3542, -119.1115

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August 13, 2025

Subject: Division 512 Comments

To the Water Resources Department and Water Resources Commissioners,

My name is Harmony Burright and I am writing these comments as a water planning professional in Oregon with over 20 years in water policy, public participation, and collaborative natural resources management, 10 of which are in Oregon. I am submitting these comments as myself and not on behalf of any organization. I worked for the Oregon Water Resources Department as a Planning Coordinator for 6 years. From the time I was hired in August 2015 to October 2021 I was in nearly every internal and external discussion that was held on larger questions regarding groundwater management in the Harney Basin. I designed and assisted extensive public outreach in the community around the Division 512 rules adopted in 2016. I designed and oversaw the public process for the Groundwater Study Advisory Committee from 2016 to 2019. I attended all meetings of the place-based water planning collaborative from 2016 to 2021. I traveled to the basin approximately one time per month and participated in numerous Department led and community led conversations around water management. I delivered regular updates to the Water Resources Commission and Harney County Court and regularly sat in meetings with the Director and Deputy Director on key issues regarding the Harney Basin. During my time with the Department I was consistently acknowledged for my ability to build trust with the community while representing the Department's stated goals and interests.

My experience with the Harney Basin has been both personally and professionally transformative. I recall sitting in a meeting with community members and publicly asserting that within the Department we were doing what we could to prevent overallocation of groundwater resources in other parts of the state. I felt that this was indisputably the role of the state. When I spoke this aloud in a public meeting, I believed what I said because it was what I had been told, but when I returned to the Department and began to inquire I found that my claims could not be corroborated with actions being undertaken by the Department at that time. I was in a meeting with agency leadership in which it was suggested that we essentially "bury the lead" on the groundwater concerns report delivered to the Water Resources Commission so as to not draw unwanted attention from the public and media. Thanks in large part to increased media scrutiny, attention from the legislature, public pressure, internal pressure, and leadership from the Commission the Department took a very important step forward in updating the groundwater allocation rules, which I believe will go a long way in reducing future water shortages and conflicts and will put Oregon in an advantageous position with regards to sustainable water management.

What I also discovered around that time was concerning decisions being made about extensions and transfers in the Harney Basin. The logic discussed in internal meetings was that the Department would be “solving” the problem in the Harney Basin by transferring water out of the known problem area (Weaver Springs) and into other parts of the basin “that weren’t experiencing problems.” Some groundwater rights had also been extended by the Department up to 30 years into the future even when Department leadership had cause for concern about groundwater declines in portions of the basin. I was also coming to learn that the role of public comments in the review of transfer decisions was very unclear and seemingly inconsistent. Individuals and organizations making comments on transfer applications, oftentimes from a place of concern that they would be harmed by the transfer, did not understand whether or how the Department was taking their comments into consideration and oftentimes did not even know if their comments had been received. As the Department’s “public advocate” (see ORS 182.545). I wrote a memo to the then Director and Water Rights Division Administrator asking for the Department to evaluate public processes related to certain water rights transactions to ensure greater transparency in decision-making and proactively discuss how individual water rights transactions would ultimately affect basin scale water management.

Finally, for nearly 6 years I believed with every fiber of my being that place-based integrated water resources planning was going to provide a means to forge meaningful partnerships between the state and places in developing and implementing integrated and coordinated policies and programs as envisioned by the legislature in 1955. It was a demanding but rewarding job. Despite years of promises to communities, the Commission and the Legislature and many internal conversations and memos intended to more clearly articulate the potential value of place-based plans, it became increasingly clear that Department leadership did not intend to support place-based planning efforts beyond public statements of support. My colleague and I generated numerous ideas to ensure these plans held value to the communities and Department but were directed to not share our recommendations with the Water Resources Commission or the public. I was no longer in a position where I could, with confidence, publicly state that state-recognized place-based integrated water resources plans held value and would be supported by the state because I no longer believed it to be the case.

I am passionate about integrated water resources management. I am passionate about data and science. I am passionate about public participation. I am passionate about governance. I believe that in order to build trust with communities, state agencies need to be trustworthy. Trustworthiness requires honesty, transparency, clear and straightforward communication, consistency, follow through on commitments made and ongoing accountability to past decisions. Good process is the scaffolding upon which trust is built.

At nearly every private and public meeting I was in pertaining to Harney basin groundwater management for 6 years Department leadership promised collaboration and partnership. In fact, Department leadership told the Harney Basin that this basin would be the flagship area for place-based planning before the grant program was even launched. Department leadership pledged that the Harney Basin could provide a model for a new way of working with communities to manage water, rooted in trust and cooperation.

I have been witness to and involved in the Division 512 rulemaking process as a member of the public and over the last year I have been on contract to support public involvement in the rulemaking process. Unfortunately it has become apparent to me that the Department has increasingly lost the trust and support from many members of the community. Over the last two months I have spoken with nearly 100 individuals from Harney County most of whom do not believe they have been heard and who do not believe that the state cares about them and their community. They believe that their voices don't matter. They are losing faith in government. After nearly a decade of promising partnership and collaboration, it is not what I had hoped or expected to hear.

I want to be clear that I am not commenting on the specifics of the proposed Division 512 rules and this is not an argument for or against regulation, it is simply commentary on how a state agency can build and lose trust with a community over time. It is worth mentioning however, that members of the RAC repeatedly asked for discussion and inclusion of certain things in the rules, including language regarding the role of the place-based plan and how it would be supported by the Department, what role voluntary agreements could play in overall groundwater management alongside regulatory approaches, and how the community would be meaningfully involved in monitoring and adaptive management. Notably none of these requests or recommendations found their way into the draft rules. At this point the Department's commitments to the community beyond regulation remain ambiguous. As written, these rules do not convey or carry the promise of partnership, integration, coordination, or voluntary joint action.

When I was with the Department we consistently spoke of the need and opportunity to marry voluntary and regulatory actions. We consistently saw and spoke of Harney basin as an ideal testing ground for a more inclusive and adaptive approach to water management that the Department could hold up for other basins. We congratulated ourselves for all the work we were doing with the community to build a shared understanding of the science and support the collaborative efforts. The community was lauded for their collaborative culture and promises were made that the Department's approach in the Harney Basin would be a promising alternative to the Klamath Basin, which was brimming with costly conflict.

Allow me now to highlight how much has been accomplished over the past decade, many of these actions occurred through cooperative efforts with the community or as a direct result of community leadership:

- Extensive outreach and support for a basin wide groundwater quality study.
- A published UGSG groundwater study report and model.
- A process within the Department to monitor for and address unauthorized groundwater use.
- A dedicated effort to issue claims of beneficial use, some of which have been outstanding for decades.
- Creation of Oregon's first federally recognized groundwater Conservation Reserve Enhancement Program, which includes compensation for voluntary cancellation of groundwater rights.
- Improved groundwater use estimates through placement of eddy covariance stations and Agrimet stations and use of satellite imagery to improve estimates of groundwater use.
- A legal analysis and exploration of the potential for voluntary agreements in the Harney Basin.
- An exploration of groundwater markets funded through the Department's Feasibility Study Grant program.
- Creation of the Harney Domestic Well Remediation fund to support rural residents that are affected by groundwater level declines.
- A survey of domestic well users to better understand changes in groundwater quality and quantity.
- Increased Department staffing to support collaborative work in the Harney Basin.
- Development of a state-recognized place-based integrated water resources plan.
- Improved understanding of groundwater dependent ecosystems.
- Identification of irrigation infrastructure upgrades as a key strategy in the NRCS long-range plan with funding to accompany it.
- Congressionally Directed Spending to support key efforts in the basin, including the groundwater study.
- Community support for the Oregon Water Resources Department at the state legislature.
- Grant applications to improve monitoring of ecologically significant springs.
- Initiation of the development of voluntary agreements.

These bullet points provide evidence of an integrated and coordinated approach coming together and ongoing community support and commitment to that approach. These are the

outcomes we should all be holding up and celebrating as progress. Water is a shared responsibility and many hands make light work.

Members of the community have sat through countless meetings hearing people like myself promise partnership and collaboration for nearly a decade. I understand now why they were so wary of me in the first place and why it took so long to establish trusting relationships. I believed so profoundly in the mission of the Department and was originally very proud of the work that I did to build trust between the state and the community. It's difficult and disheartening to now see how tenuous that trust and partnership has become over the past two years.

In August 2024, at RAC Meeting #7, the Department informed the RAC that it had been a "mistake" to tell them in every previous RAC meeting that the Department was there to support collaboration and consensus. It begs the question, if a state agency makes a commitment both publicly and privately for nearly a decade, isn't it in the Department and public's best interest to uphold that commitment? What is the significance of a verbal or written commitment from a state agency if it is not upheld? As an individual, what role did I play in setting expectations for a certain level of inclusion and involvement? What is my personal responsibility to uphold these commitments even as my role has changed? How does this shape my own beliefs in state government?

I'm ultimately an optimistic person and will continue to have hope for the future of water planning and management in Oregon. Please think of these comments a time capsule. I will slowly be compiling a timeline of key events so that we can retrace our steps and learn from both our successes and our mistakes in the Harney Basin. I can't know what the future will bring but I can shed light on the past 10 years of history in the Harney basin and the statements, promises, and decisions that were made as well as the actions that were taken or not taken by the Water Resources Department. Regardless of the outcome, groundwater management in the Harney Basin will forever be a critical part of Oregon's water history. Nothing is ever as simple as it seems.

With gratitude,

Harmony Burright

CURRENT GROUNDWATER CONDITIONS IN THE HARNEY BASIN

The basin is one interconnected groundwater system with several distinct areas

Silver Creek recharges groundwater in lowlands

Silver Creek Subarea

Minor declines distributed over a large area with some small pockets of localized declines

Amount of change (overall)
 median
 min 0.0 ft || -2.5 ft || -3.5 ft || -23.1 ft max
 Rate of Change (per year)
 median
 min +0.1 ft || -0.4 ft || -0.5 ft || -4.4 ft max

Discharge > Recharge
 Irrigation < Recharge

Silvies Subarea

more transmissive hydrogeology means less variability by well

Modest localized declines in some areas with minor declines across a larger area

Amount of change (overall)
 median
 min 0.0 ft || -2.6 ft || -29.3 ft max
 Rate of Change (per year)
 median
 min +0.6 ft || -0.3 ft || -1.1 ft max

The Silvies River recharges groundwater in lowlands

Discharge > Recharge
 Irrigation < Recharge

Recharge

Groundwater recharges from rivers and streams when they spill out over the valley floor (lowlands) and seep into the ground

Small creeks on the northeast side of the basin recharge groundwater

Northeast-Crane Subarea

highly variable hydrogeology means more variability by well with differences between shallow and deep wells

Modest to significant localized declines concentrated in areas of development with longer history of use, with gradual declines across a larger area in the shallow system

Amount of change (overall)
 median
 min 0.0 ft || -10.3 ft || -31.3 ft || -69.8 ft max
 Rate of Change (per year)
 median
 min +4.9 ft || -0.9 ft || -3.3 ft || -5.0 ft max

Weaver Springs Subarea

highly transmissive hydrogeology means less variability by well

Significant concentrated declines created a new "low point" in the basin that draws water towards it

Amount of change (overall)
 median
 min 0.0 ft || -48.6 ft || -116.9 ft max
 Rate of Change (per year)
 median
 min -0.5 ft || -4.3 ft || -10.5 ft max

Dog Mountain Subarea

Modest declines distributed over a small area

Amount of change (overall)
 median
 min 0.0 ft || -11.5 ft || -31.8 ft max
 Rate of Change (per year)
 median
 min -0.4 ft || -1.6 ft || -5.5 ft max

Lower Blitzen-Voltage Subarea

highly variable hydrogeology means more variability by well

Minor localized declines concentrated in areas of development with gradual declines across a larger area in the shallow groundwater

Amount of change (overall)
 median
 min 0.0 ft || -2.9 ft || -39.8 ft max
 Rate of Change (per year)
 median
 min +0.4 ft || -0.3 ft || -1.1 ft max

Upper Blitzen Subarea

Minimal declines

Discharge > Recharge
 Irrigation < Recharge

Donner and Blitzen recharges groundwater

Discharge
 The majority of groundwater is discharged through evapotranspiration (ET) of irrigated crops, ET from native vegetation and discharge to springs and streams that rely on groundwater. The majority of groundwater discharges to another basin.

Impacts

Groundwater declines vary across the basin. The following impacts can result from groundwater declines:

- Less groundwater for springs + streams and some springs may lose access to water + dry up
- Shallow domestic wells may need to drill deeper to access water
- Native vegetation that relies on groundwater may lose access and dry up

Disclaimer: these are simplified representations of complex concepts and are provided to prompt reflection and discussion. This does not make a claim of technical accuracy.

It's all about tradeoffs!

The proposed policy is seeking to balance tradeoffs. What is most important to you? How would you balance tradeoffs?

IMPACTS

Groundwater Management Goal =
No more declines (0 ft/yr of declines) by 2058

Economic Impacts

Agriculture accounts for roughly 24% of the economy across all sectors. After groundwater use is fully curtailed (or reduced) over 30 years the economy would have the following impacts:

- 320 jobs would be lost
- \$18M in labor income would be lost
- \$61M in annual economic output would be lost
- Impacts to public services and community amenities

Environmental Impacts

Groundwater plays an important role for the environment in the Harney Basin and contributes water to springs, streams, and native vegetation, which in turn can affect fish, wildlife, and critters. Outdoor recreation is an important part of the economy.

It's hard to put a price tag on environmental values, but as groundwater levels decline generally impacts to the environment increase.

Social Impacts

Groundwater is the main source of water for most homes. A sustainable supply for homes needs to be ensured for the future. The state estimates that 100 domestic wells would lose access to water under this proposal (down from 200 if no action is taken).

Community wellbeing is closely tied to economic and environmental impacts.

!!! How might you be impacted?
...either directly or indirectly?

Irrigators who rely on groundwater usually have the deepest wells but they can still be affected by declines. The proposed policies would limit how much groundwater is used for irrigation.

Domestic and stockwater wells may be shallower and could lose access to groundwater, requiring them to drill deeper.

ALL GROUNDWATER USERS (people & nature) are drawing from the same finite groundwater sources. When groundwater levels decline it means there is more groundwater being used than being replenished.

Some native vegetation relies on shallow groundwater and could lose access depending on root depth.

let's call this "native ET"

Groundwater discharges to streams, seeps, and springs - as groundwater levels drop this can reduce how much is discharged over time.

let's call this "spring discharge"

Projected Impacts by subarea (all estimated)

- Silver Creek -
28% LESS water for irrigation
Groundwater declines an additional 3-4 feet by 2058
4 domestic wells need to deepen
42% reduction in spring discharge
19% reduction in native ET

- Weaver Springs -
75% LESS water for irrigation
Groundwater recovers anywhere from 12-41 by 2058
9 domestic wells need to deepen
100% reduction in spring discharge
14% reduction in native ET

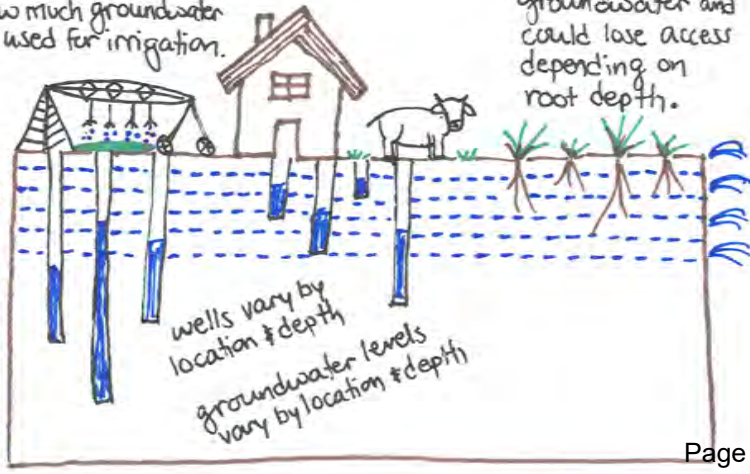
- Dog Mountain -
9% LESS water for irrigation
Groundwater declines an additional
7 domestic wells need to deepen
23% reduction in native ET

- Silvies -
15% LESS water for irrigation
Groundwater declines an additional 0.5 feet by 2058
24 domestic wells need to deepen
59% reduction in spring discharge
23% reduction in native ET

- Northeast-Crane -
34% LESS water for irrigation
Groundwater declines an additional 6 to 8 feet by 2058
47 domestic wells need to deepen
46% reduction in spring discharge
83% reduction in native ET

- Lower Blitzen-Voltage -
39% LESS water for irrigation
Groundwater declines an additional 3-4 feet by 2058
9 domestic wells need to deepen
51% reduction in spring discharge
19% reduction in native ET

As groundwater levels decline it affects different users/users differently



PROPOSED HARNEY BASIN GROUNDWATER POLICIES – AN OVERVIEW

The Oregon Water Resources Department is proposing policies to manage groundwater in the Harney Basin and is seeking public comment through August 7, 2025. Here is an overview of the key proposals:

Critical Groundwater Area Designation ([See 609-512-0041 in the proposed rules](#))

Designating a critical groundwater area gives the Department the ability to curtail or reduce groundwater use via regulation. The Department is proposing to designate the Harney Valley (the low-lying parts of the basin where most of the groundwater use occurs) as a critical groundwater area. The criteria for designating a Critical Groundwater Area is described in the [Division 10 report](#).

Groundwater Management Subareas ([See 609-512-0041 in the proposed rules](#))

The Department proposes seven subareas within the critical groundwater area. The subareas would each have the same overall goal but would be allowed a different amount of groundwater use (see map).

Groundwater Management Goal - Target Groundwater Level Trend ([See 609-512-0041 in the proposed rules](#))

The goal proposed by the Department is to achieve a median groundwater level decline rate of no more than 0 feet per year in each subarea within 30 years (by 2058) among a representative set of wells. Weaver Springs would require achievement of this goal on a quicker timeline.

Initial Allocation of Groundwater Irrigation Rights ([See 690-512-0060 in the proposed rules](#))

Each groundwater right would receive an “initial allocation” that is less than the full certificated amount. For groundwater irrigation rights the “initial allocation” would be 2.5-acre feet per using wetted acres from 2020-2024. Further reductions would occur from this amount.

Groundwater Use/Reductions - Permissible Total Withdrawal ([See 690-512-0050 in the proposed rules](#))

A permissible total withdrawal sets the amount of water (in acre feet) that the Department can curtail currently authorized water use down to. It represents the “basement” for allowed groundwater use. Allowed groundwater use could exceed the permissible total withdrawal so long as the target groundwater level trend is achieved. A permissible total withdrawal is set for each of the seven subareas.

Adaptive Management - Schedule for Curtailments/Reductions ([See 690-512-0070/0080 in the proposed rules](#))

The total potential reductions proposed for each subarea would be phased in over 24 years in 6-year increments. In 2028 40% of the reductions would be implemented (75% in Weaver Springs), followed by smaller proportions every 6 years until the goal is achieved. With the exception of Weaver Springs, every 6 years the Department would assess the groundwater level trends to determine if the groundwater levels are “on track” to achieve the goal within the set timeframe. The amount of reductions could be adjusted up or down to make sure that the basin stays “on track.” The reductions cannot be more than the permissible total withdrawal. All reductions would occur from wet acres (acres that were irrigated between 2020-2024) and be implemented using prior appropriation, meaning that junior water rights would be curtailed before senior water rights until the desired reduction levels and goal were achieved.

Measurement and Reporting of Groundwater Use ([See 690-512-0110 in the proposed rules](#))

By March 1, 2028 every permitted groundwater right in the Harney Basin must install a totalizing flow meter on each well (point of appropriation), measure water use monthly, and report annually.

Future Groundwater Uses (Classification) ([See 690-512-0030 in the proposed rules](#))

No new groundwater right applications would be accepted and no new groundwater rights would be issued. Only exempt groundwater uses (e.g., domestic and stock water) would be allowed in the future.

Table 1. Proposed implementation schedule with adaptive management checkpoints and reductions (from 2025-2058)

2025	 Projected adoption of rules by the Water Resources Commission (Commission).  Contested case proceedings begin.
2028	 Projected completion of contested case process (curtailment cannot occur prior to finalization of contested case process).  Department implements first curtailment unless groundwater levels show no decline from 2020-2024 (40% of proposed curtailment for 6 subareas, 75% in Weaver Springs).  OWRD reviews groundwater policies and reports to public and Commission.
2031	 OWRD reviews groundwater policies and reports to public and Commission.
2033	 1 st adaptive management checkpoint to review groundwater level trends and adjust proposed curtailment to ensure that groundwater level trends remain “on track.”
2034	 Department implements second curtailment consistent with determination made at the 1 st adaptive management checkpoint (+/- 30% of proposed curtailment for 6 subareas, 25% in Weaver Springs).  OWRD reviews groundwater policies and reports to public and Commission.
2035	 OWRD reviews groundwater policies and reports to public and Commission.
2037	 OWRD reviews groundwater policies and reports to public and Commission.
2039	 2 nd adaptive management checkpoint to review groundwater level trends and adjust proposed curtailment to ensure that groundwater level trends remain “on track.”
2040	 Department implements third curtailment consistent with determination made at the 2 nd adaptive management checkpoint (+/- 15% of proposed curtailment in 6 subareas).  OWRD reviews groundwater management policies and reports to Commission.
2043	 OWRD reviews groundwater management policies and reports to Commission.
2045	 3 rd adaptive management checkpoint to review groundwater level trends and adjust proposed curtailment to ensure that groundwater level trends remain “on track.”  OWRD reviews groundwater management policies and reports to Commission.
2046	 Department implements fourth curtailment consistent with determination made at the 3 rd adaptive management checkpoint (+/- 10% of proposed curtailment in 6 subareas).  OWRD reviews groundwater management policies and reports to Commission.
2049	 OWRD reviews groundwater management policies and reports to Commission.
2051	 4 th adaptive management checkpoint to review groundwater level trends and adjust proposed curtailment to ensure that groundwater level trends remain “on track.”
2052	 Department implements fifth curtailment consistent with determination made at the 4 th adaptive management checkpoint (+/- 5% of proposed curtailment in 6 subareas).  OWRD reviews groundwater management policies and reports to Commission.
2055	 OWRD reviews groundwater management policies and reports to Commission.
2057	 5 th adaptive management checkpoint to review groundwater level trends to ensure that groundwater level trends remain “on track.”
2058	 OWRD reviews groundwater management policies and reports to Commission.  Groundwater level trend of 0 ft/yr of decline achieved.

Proposed Harney Basin Groundwater Policies for Public Comment – Last Updated 06.19.25 (subject to revision upon further review)

Table 2. Estimated water use and proposed reductions over time by subarea, organized by highest to lowest proposed reductions (see [RAC 14 materials](#))

Subarea	Max GW Use Authorized Acres (authorized primary + supplemental POU's x 3 afy)	Modeled 2018 GW Use Acres (based on 2.1 afy per wet acre estimate) *REDUCE FROM HERE*	Permissible Total Withdrawal (PTW) Acres (based on 2.5 afy per acre estimate)	Proposed Reduction from 2018 Use (amount and % reduced from 2028-2058)	2028 (amount reduced from 2018 % reduced from 2018 allowed use)	2034 (amount reduced from 2018 % reduced from 2018 allowed use)	2040 (amount reduced from 2018 % reduced from 2018 allowed use)	2046 (amount reduced from 2018 % reduced from 2018 allowed use)	2052 (amount reduced from 2018 % reduced from 2018 allowed use)	2058 Total allowed use while achieving 0 ft/yr rate of decline
Weaver Springs	34,371 afy 11,457 acres	19,200 afy 9,142 acres	4,800 afy 1,920 acres	-14,400 afy -75%	-10,800 afy -56% 8,400 afy	-3,600 afy -19% 4,800 afy	na	Na	na	4,800 afy
			Groundwater level trends will be evaluated at “adaptive management checkpoints” and amount of reductions may be adjusted up or down depending on whether trends are “on track” to achieve goal of 0 ft/yr or decline by 2058							
Allocation of reductions over time					40% reduced	30% reduced	15% reduced	10% reduced	5% reduced	
Lower Blitzen-Voltage	28,032 afy 9,344 acres	13,700 afy 6,523 acres	8,300 afy 3,320 acres	-5,400 afy -39-40%	-2,160 afy -16% 11,540 afy	-1,620 afy -12% 9,920 afy	-810 afy -6% 9,110 afy	-540 afy -4% 8,570 afy	-270 afy -2% 8,300 afy	≥ PTW = 0 ft/yr of decline
Northeast -Crane	115,125 afy 38,375 acres	53,000 afy 25,238 acres	35,000 afy 14,000 acres	-18,000 afy -34%	-7,200 afy -14% 45,800 afy	-5,400 afy -10% 40,400 afy	-2,700 afy -5% 37,700 afy	-1,800 afy -3% 35,900 afy	-900 afy -2% 35,000 afy	≥ PTW = 0 ft/yr of decline
Silver Creek	42,075 afy 14,025 acres	21,000 afy 10,000 acres	15,200 afy 6,080 acres	-5,800 afy -27-28%	-2,320 afy -11% 18,680 afy	-1,740 afy -8% 16,940 afy	-870 afy -4% 16,070 afy	-580 afy -3% 15,490 afy	-290 afy -1% 15,200 afy	≥ PTW = 0 ft/yr of decline
Silvies	63,024 afy 21,008 acres	24,900 afy 11,857 acres	21,200 afy 8,480 acres	-3,700 afy -15-16%	-1,480 afy -6% 23,420 afy	-1,110 afy -5% 22,310 afy	-555 afy -2% 21,755 afy	-370 afy -2% 21,385 afy	-185 afy -1% 21,200 afy	≥ PTW = 0 ft/yr of decline
Dog Mountain	19,170 afy 6,390 acres	4,600 afy 3,042 acres	4,200 afy 1,608 acres	-400 afy -9-10%	-160 afy -4% 4,440 afy	-120 afy -3% 4,320 afy	-60 afy -1% 4,260 afy	-40 afy -1% 4,220 afy	-20 afy -0.5% 4,200 afy	≥ PTW = 0 ft/yr of decline
Upper Blitzen	519 afy 173 acres	100 afy 47 acres	76 afy 40 acres	24 afy 0%	na	na	na	Na	na	na
Total	302,316 afy 100,772 acres	136,500 afy 65,000 acres	88,800 afy 35,520 acres	-47,700 -35%	-24,120 afy -18% 112,380 afy	-13,590 afy -10% 98,790 afy	-4,995 afy -4% 93,795 afy	-3,330 afy -2% 90,465 afy	-1,665 afy -1% 88,800 afy	≥ PTW = 0 ft/yr of decline

Figure 1. Proposed seven subareas (for more detail, see the [interactive map](#))

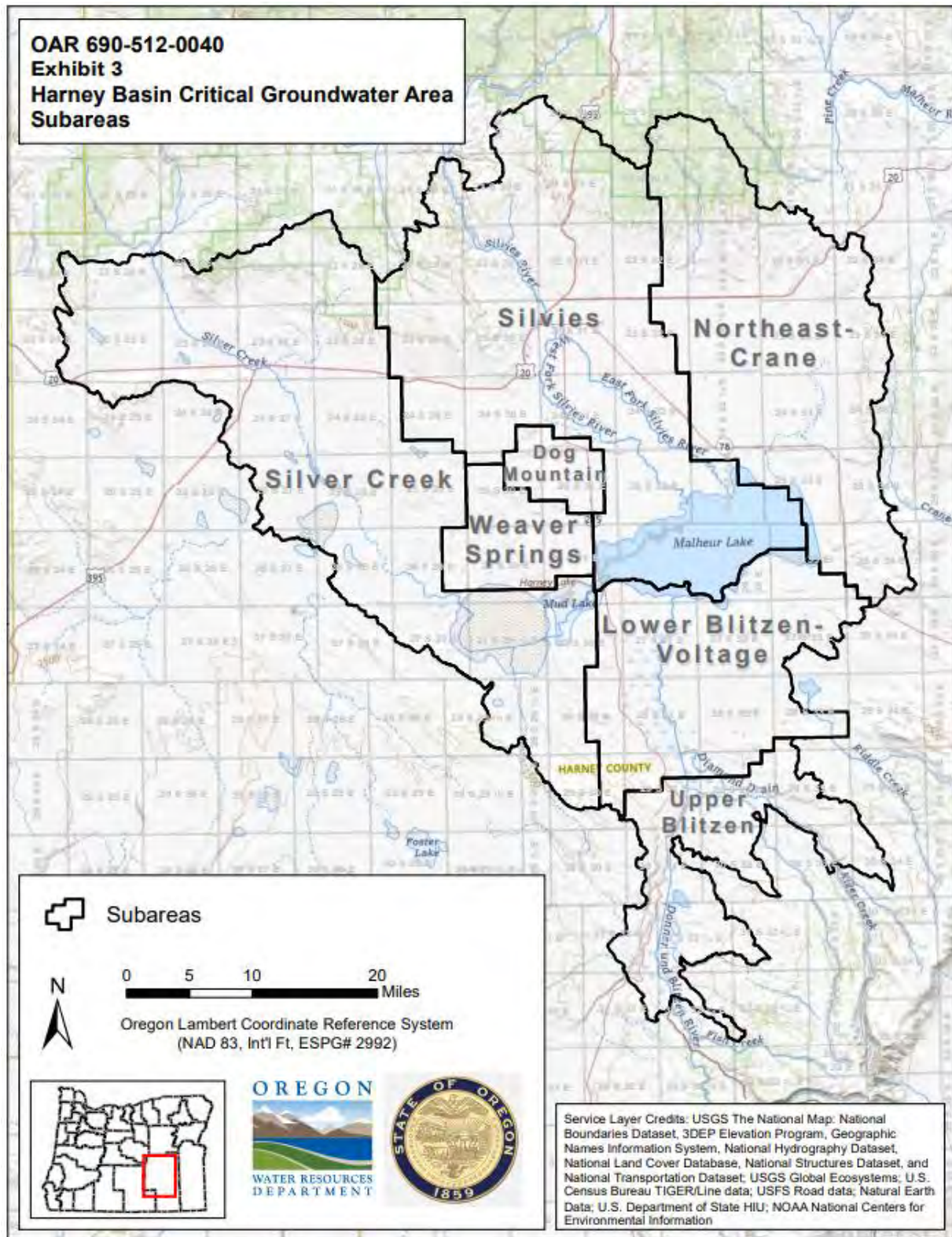


Table 3. Summary of current conditions and projected impacts by subarea (adapted from publicly available materials – see footnotes)

	Number of Wells Included	Rate of Change in ft/yr in 2024 (Min Median Max) ¹	Magnitude of Change Overall in ft ¹ (Min Median Max) (From 2018-2024) ²	Median Changes in Water Levels from 2018 to 2058 under Proposal ^{2 3} (From 2024-2058) ⁴	Total # of Domestic Wells % Estimated to Lose Access to Water ²	Native Vegetation Reductions in Water Use (2018 2058) in kaf and % reduced ²	Discharge to Springs and Streams (from 1980 to 2058) ²
Weaver Springs	Magnitude n= 68 Rate n= 34	-0.5 -4.3 -10.5	0.0 -48.6 -116.9 (-5.0 ft)	+7.0 to +8.7 ft (+12.0 to +13.7 ft)	37 24% -9	0.7 0.6 -0.1 -14% reduction in native ET	-100% reduction in discharge
Lower Blitzen-Voltage	Magnitude n= 54 Rate n= 27	-0.4 -1.6 -5.5	0.0 -2.9 -39.8 (-2.5 ft)	-5.3 to -6.4 ft (addtl -2.8 to -3.9 ft)	51 18% -9	4.8 4.1 -0.7 -19% reduction in native ET	-59% reduction in discharge
Northeast-Crane⁵	Magnitude n=212 Rate n=121	+4.9 -5.0 -7.0	0.0 -10.3 to -31.3 -69.8 (-10 ft)	-16.0 to -17.6 ft (addtl -6.0 to -7.6 ft)	337 14% -47	2.0 0.38 -1.62 -83% reduction in native ET	-46% reduction in discharge
Silver Creek	Magnitude n=50 Rate n=34	-0.1 -0.4 -4.4	0.0 -2.5 to -3.5 -23.1 (-1.7 ft)	-5.5 to -6.1 ft (addtl -3.8 to -4.4 ft)	44 9% -4	17.9 14.7 -3.2 -19% reduction in native ET	-42% reduction in discharge
Silvies	Magnitude n=39 Rate n=27	+0.6 -0.3 -1.1	0.0 -2.6 -29.3 (0.0 ft)	-0.2 ft to -0.6 ft (addtl -0.2 to -0.6 ft)	394 6% -24	21.8 17.5 -4.3 -23% reduction in native ET	-59% reduction in discharge
Dog Mountain	Magnitude n= 21 Rate n= 19	-0.4 -1.6 -5.5	0.0 -11.5 -31.8 (-12 ft)	-4.6 ft to -5.1 ft (?)	45 16% -7	0.3 0.2 -0.1 -23% reduction in native ET	na
Upper Blitzen	Magnitude n= 10 Rate n= 4	+0.1 -0.2 +0.1	0.0 -0.7 -10.4	+0.2	25 2% -1	1.5 1.5 0 +2% increase in native ET	na

¹ Data provided in the [2024 Groundwater Trends Report](#) available on the Water Resources Department Website.

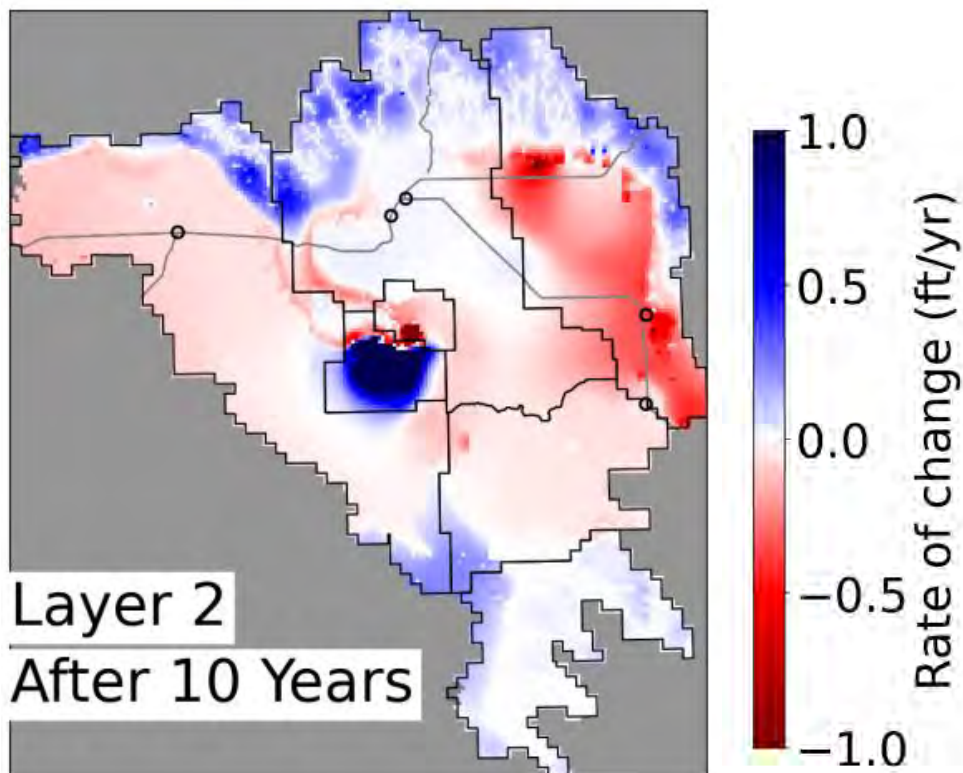
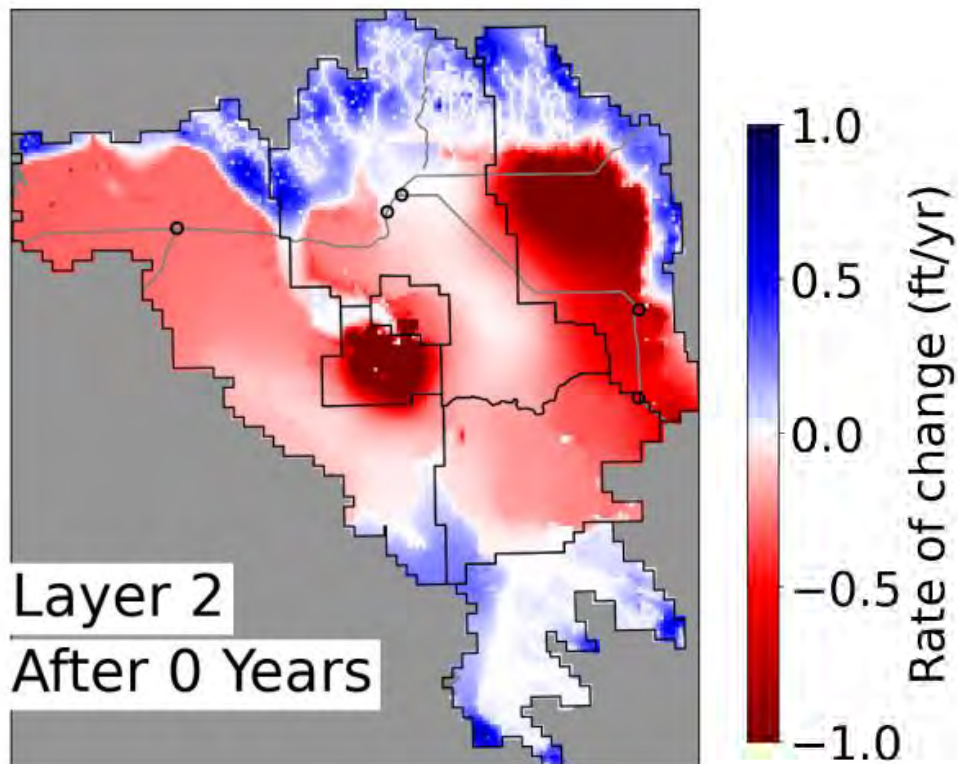
² [April 16, 2025 Presentation to the RAC](#) (RAC Meeting #14). Some numbers estimated from graphic representations.

³ June 12, 2025 Presentation to the Water Resources Commission (link forthcoming).

⁴ Calculated using publicly available estimates.

⁵ Available data does not correspond with latest boundaries by the Department and may not accurately reflect data available for this subarea.

Figure 2. Current modeled decline rates by subarea (for additional information, see the [interactive map](#))





HARNEY COUNTY COURT

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Websites: www.co.harney.or.us ♦ www.harneycounty.org

May 7, 2024

Acting Director Doug Woodcock
725 Summer St NE Ste A
Salem, OR 97301

RE: Request to Follow the Division 10 Process in the Harney Basin

Dear Action Director Woodcock,

As the governing body of Harney County, we are writing to express concerns with the Oregon Water Resources Department's Division 512 rulemaking process. Specifically, we are alarmed by the lack of formal engagement of affected local governments.

We urge the Department to initiate consultation with affected local governments and federally recognized tribes in the Harney Basin consistent with the Division 10 rules adopted at the Water Resources Commission meeting in September 2023. This includes developing a draft report for public comment that is based on best available science and information that:

1. Identifies the criteria met under ORS 537.730(1)(a)-(g);
2. Identify and characterize the groundwater reservoirs subject to the proposed critical groundwater area designation; and,
3. Identify corrective control measures likely to resolve the problems that resulted in the recommendation to designate a critical groundwater area.

This draft report should be posted on the Department's webpage for public comment. Any information and comments received during the public comment period should be reviewed by the Department in the preparation of a final report to the Commission. The Division 10 rules indicate that this should happen prior to the rules advisory committee (RAC) being convened. We understand that the Division 512 rulemaking process began prior to the Division 10 rules being adopted by the Commission, but we request that the Department meet report and consultation requirements before any additional RAC meetings are held.

To-date the Department has not consulted or coordinated with the Harney County Court in an official capacity regarding the rulemaking process and the critical groundwater area designation. We are troubled by the fact that the Department exempted itself from the Division 10 requirement to initiate consultation and coordination with affected local governments and tribes and develop a draft report to support that outreach as early as possible in the rulemaking process. The Department exempted itself without an opportunity for public comment or consultation with the Harney County Court. At multiple presentations made to the community, beginning at the first RAC meeting in April 2023, the Harney County Court was under the impression that the Department would follow the Division 10 process. As stated at the April 2023 meeting and captured in the meeting notes developed by the Department: "The Division 10 requirements that **must be met** before the August RAC include: draft a report for the WRC, begin consultation with Federally Recognized Tribes and begin

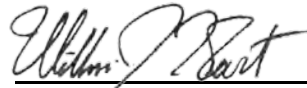
coordinating with Affected Local Governments.” We would be happy to provide additional information that resulted in this being an expectation of the County Court and local stakeholders.

The Harney Basin will be the first basin in the state to have a critical groundwater area designation using the updated critical groundwater area statutes and Division 10 rules. This will be a defining moment for the state and for our basin. This process presents an opportunity for the Department to actually use the Division 10 process established in rule and set the course for the future of water management across the state. We question the Department’s decision to circumvent the Division 10 process and urge you to follow the process that was developed through rule.

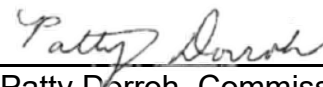
At the earliest possible date, we ask you to initiate consultation and coordination with affected local governments and federally recognized tribes in the Harney Basin consistent with the Division 10 rules, including provision of a draft report to support that outreach. We invite you to present to and meet with the Harney County Court at our upcoming meeting on June 20, 2024 to describe your proposed approach for meeting this request.

Signed and dated this day, the 15th of May 2024.

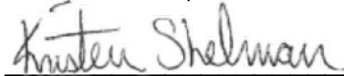
HARNEY COUNTY COURT



William Hart, Judge



Patty Dorroh, Commissioner



Kristen Shelman, Commissioner



August 6, 2025

Via Email and US Mail

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Salem, Oregon 97301
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Re: Comments of Harney County Court on Division 512 Rulemaking.

I. BACKGROUND

My firm serves as County Counsel for Harney County. On behalf of the Harney County Court (“Harney County”), the County offers the following comments on the Oregon Water Resources Commission and Department’s (collectively, “OWRD”) proposed Division 512 groundwater management rules, and proposed Harney Basin Critical Groundwater Area.

The designation of critical groundwater areas (“CGWA”) is a very sensitive issue given its significant impact on a multitude of different interests. In Harney County, the withdrawal of ground water is vital for economic development and community health. Therefore, Harney County has paid close attention to the proposed Division 512 rules, participating in Rule Advisory Committee (“RAC”) meetings and carefully reviewing OWRD’s studies and analysis. Unfortunately, the proposed rules would have an immense negative effect on Harney County residents and businesses. Harney County has significant concerns with regards to the technical and legal basis OWRD is using to declare the entire Harney Basin a Critical Groundwater Area as outlined in OWRD’s “Groundwater Report for the Harney Basin Critical Groundwater Area Rulemaking” (“Groundwater Report”). Therefore, Harney County recommends the following:

- 1) Develop a different definition and delineation of “groundwater reservoir” that takes into account more scientific information and criteria as well as local knowledge and input.
- 2) Adjust the boundary of the Lower Blitzen Voltage subarea to include the properties south of Windy Point.
- 3) Examine the proposed boundaries for the Silvies subarea and include local knowledge in the delineation.
- 4) Set the permissible total withdrawal of the Silver Creek subarea, portions of the Silvies subarea, and Lower Blitzen Voltage subareas as the current authorized amount or the current amount of estimated pumpage (with an updated estimate), or exclude these subareas from the Critical Groundwater Area designation altogether.

- 5) Remove the Upper Blitzen subarea from the Critical Groundwater Area.
- 6) Proceed with regulatory action in the Weaver Springs subarea given that it has clearly met the criteria for a Critical Groundwater Area.
- 7) For remaining areas (Northeast-Crane and Dog Mountain) set thresholds at which regulatory action will occur and encourage voluntary agreements until thresholds are met or exceeded.
- 8) Pursue voluntary joint action with groundwater users as required by law and minimize economic impacts to the greatest extent possible.

Given the importance of OWRD's Division 512 rules, Harney County implores OWRD to carefully consider all options that would reduce the effect of a critical groundwater area designation, while achieving the desired results. Therefore, Harney County respectfully requests that OWRD consider these comments, and amend its proposed rules in conformance with this letter.

II. HARNEY COUNTY'S INTERESTS

Harney County is Oregon's largest county at 10,226 square miles, located in the high desert of eastern Oregon. With a total population of approximately 7,500, this computes to an average of less than one person per square mile in the County, compared to an average of almost 40 people per square mile in Oregon as a whole. Approximately 75% of the County's land base (an area almost the size of New Jersey) is publicly owned. Therefore, the County Court faces unique challenges in its ongoing effort and duty to protect and enhance the economy, welfare, and quality of life of its citizens. These challenges are exacerbated by the high desert ecosystem of Harney County, which receives only 10.13" of precipitation annually on average. Because precipitation is so sparse and surface water is minimally available, groundwater is of great importance to Harney County.

Harney County's local economy depends heavily on the natural resource and agricultural sectors. A smaller portion of the economy is also supported by tourism, which consists of people visiting the County to engage in a diverse array of activities such as hunting, fishing, motorized vehicle travel, horseback riding, hiking, and wildlife viewing. Because the County's economy and welfare is so closely linked with natural resources, and in particular scarce water resources, regulations affecting natural resources are of great interest to the County.

The proposed Division 512 rules, and the designation of critical groundwater areas, strike at the heart of Harney County's natural resource interests. Therefore, Harney County has a keen interest in seeing that the designation of CGWAs is equitable for all affected parties, and based on the best available evidence possible while further considering County needs for the present and future. Harney County therefore submits the following comments on the proposed Division 512 rules.

III. COMMENTS

A. LEGAL BACKGROUND.

In Oregon’s water code, ORS 537.535—.746 regulates the use and appropriation of groundwater. First, ORS 537.535—.630 provide a process for obtaining groundwater rights. Next, ORS 537.665—.720 provide a process for adjudicating groundwater rights. Finally, ORS 537.730—.742 provide a process for OWRD’s designation of critical groundwater areas and imposition of “corrective controls” consistent with a CGWA determination.

ORS 537.730 et seq. establishes two very distinct regulatory mechanisms for designating CGWA’s and regulating groundwater appropriations: (1) a quasi-legislative mechanism for designating a CGWA and limiting new appropriations of groundwater (ORS 537.730-537.735); and (2) a quasi-judicial mechanism for limiting groundwater use by existing water right holders within a designated CGWA (ORS 537.742).

In the case of CGWA designations, ORS 537.730 authorizes the Commission to designate by rule a CGWA based on findings by the Department that certain circumstances are present, such as different forms of substantial interference. *See, e.g.*, ORS 537.730(1)(b) (“The Water Resources Commission by rule may designate an area of the state a critical ground water area if: [...] [t]he Water Resources Department *finds* a pattern of substantial interference”) (emphasis added). The text and context of ORS 537.730 authorizes the Commission to quasi-legislate, through rulemaking, the designation of a CGWA based merely on factual findings by the Department, though the Commission must also take into account information presented at the public hearing required by ORS 537.730(2). This rulemaking serves as a property encumbrance within the area deemed a CGWA. ORS 537.740. In a rule designating a CGWA, ORS 537.735(3) authorizes the Commission to adopt corrective control provisions that primarily restrict or regulate the issuance of new water rights, but not the use of existing water rights. *See* ORS 537.735(3)(a)-(c). Although this statutory scheme may present some of its own constitutional concerns, it is clear that the statutory authorities in ORS 537.730-537.735 are directed at providing the Commission quasi-legislative authority to designate CGWAs, and regulate future new appropriations of ground water, based largely on information provided by the Department to the Commission.

While the designation process, and regulation of prospective new uses of groundwater, is quintessentially a quasi-legislative process, i.e., policymaking in nature, the Commission’s authority to impose limitations on groundwater use by existing water right holders is very different. The statutory scheme requires that the Commission’s authority to regulate in this realm be exercised strictly through quasi-judicial procedures. Indeed, ORS 537.742 is focused on the limitation of groundwater use by existing water right holders, *see* ORS 537.742(2)(a)-(f), and the statute explicitly requires that such corrective control measures affecting existing water right holders may only be imposed through a “final order” issued after a “contested case proceeding.”

The fact that the Legislature delegated *legislative* authority to the Commission to impose “corrective control provisions” applicable to new appropriations and water rights under ORS 537.735(3), but conspicuously required that parallel “corrective control measures” applicable to

existing water rights under ORS 537.742(2) only be imposed through *adjudicatory* procedures, makes it plain and obvious that the Legislature made a very deliberate and conscious choice to ensure that the due process rights of existing water right holders be honored and respected.

Harney County previously submitted comments on OWRD's Division 10 rulemaking, which evaluated the law discussed above, as well as due process concerns. Harney County herein incorporates those prior comments, and provides additional comments on the Division 512 rules below.

B. APPLICATION OF THE DIVISION 10 RULES IN THE DIVISION 512 RULEMAKING HAS RESULTED IN LITTLE COORDINATION BETWEEN OWRD AND HARNEY COUNTY, AND HAS CURTAILED MEANINGFUL DISCUSSION AND ENGAGEMENT.

OWRD adopted its revised Division 10 rules in September of 2023. Those rules set forth the process for designating critical groundwater areas. The Harney Basin is the first basin where these updated rules are being applied, setting an important precedent for the rest of the state. OAR 690-010 outlines some of the process considerations set forth in Division 10:

(4) In addition to the requirements under section (1), prior to Commission adoption of a rule designating a critical groundwater area, the Department shall:

(a) Coordinate with affected local governments using the process described in OAR 690-010-0140; and

(b) Engage, as described in OAR 690-010-0150, with any federally recognized Indian tribes in Oregon;

(c) Prior to convening a rules advisory committee pursuant to ORS 183.333, the Department shall prepare a draft report based on the best available science and information, identifying the criteria met under ORS 537.730(1)(a) –

(g), identifying and characterizing the groundwater reservoirs subject to the proposed critical groundwater area designation and identifying corrective control measures likely to resolve the problems that resulted in the recommendation to designate a critical groundwater area. The draft report shall be posted on the Department's webpage until the end of the public comment period:

(A) Until the close of the public comment period, and consistent with ORS 183.335, the Department shall solicit and accept information and comments from the public regarding the draft report;

(B) The Department shall review the information and comments received and present a final report to the Commission that includes the Department's findings and conclusions and includes an assessment of the information and comments received;

(C) The report's findings and conclusions with respect to designation of a critical groundwater area shall be supported by substantial evidence that justifies the designation.

OAR 690-010-0130.

Under the directive of OAR 690-010-0130, OWRD prepared the “Groundwater Report for the Harney Basin Critical Groundwater Area Rulemaking” to support its designation of the Harney Basin Critical Groundwater Area. Given that the Division 10 rules were adopted after the Division 512 RAC was convened, the Division 512 RAC did not begin with the review and discussion of the Groundwater Report. In August of 2023, OWRD made a verbal commitment during a Division 512 RAC meeting to provide a copy of the Groundwater Report to the RAC, and initiate coordination with local and tribal governments prior to the next RAC meeting in October. The Groundwater Report was not provided until June of 2024, after it had been requested again by members of the RAC. As of the writing of this letter, no formal presentations to the Harney County Court have been made, and the Harney County Court is still unclear about what coordination was or is supposed to occur under OWRD’s critical groundwater area designation process. Furthermore, city officials within Harney County have contacted the County expressing concern with the lack of effective outreach to, and coordination with, the cities on the proposed rules as required by Division 10.

Given that the Division 10 rules provide the technical basis for a critical groundwater designation, it is paramount that the science and study concerning CGWA designations be reviewed and discussed publicly before or early in the rulemaking process. Prior to the issuance of the Groundwater Report, OWRD had been communicating in public meetings and in the RAC itself that there were multiple areas of the Harney Basin where additional regulation of groundwater uses would not be necessary. OWRD also previously communicated a willingness to discuss the delineation of groundwater reservoirs in the Harney Basin. Now, OWRD is recommending significant curtailments to groundwater uses in the Harney Basin through the Division 512 rules, despite there being a lack of evidence that groundwater levels have excessively declined, are declining excessively, are overdrawn, or about to be overdrawn across multiple subareas within the basin. The Groundwater Report appears to be written in such a way to reinforce OWRD’s position, rather than to invite discussion and engagement from interested and affected parties.

OWRD’s approach to designating the CGWA in its Division 512 rules is contrary to the intent of the statutory scheme, Harney County’s understanding of the Division 10 rules, and ignores the importance of public engagement and consultation in the process for designating CGWA boundaries. When OWRD adopted the Division 10 rules, the agency parroted the importance of public engagement, and the language requiring groundwater reports was intended to provide insight into the agency’s thinking, and an enhanced opportunity for meaningful comment and review. Unfortunately, OWRD’s implementation of its own rules has left much to be desired. Harney County feels unheard, and the Groundwater Report has been used as a tool by OWRD to ignore criticisms of the Harney County Critical Groundwater Area. Therefore, Harney County urges OWRD to return to the drawing board, and engage in a collaborative analysis regarding the size, scope, and science of a proposed CGWA in the Harney Basin.

C. THE PROPOSED GROUNDWATER RESERVOIR DELINEATION IN THE DIVISION 512 RULES IGNORES LOCAL KNOWLEDGE.

ORS 537.515(6) defines a groundwater reservoir as a “designated body of standing or moving groundwater having exterior boundaries which may be ascertained or reasonably inferred.” While there may be discretion built into this definition, local knowledge is critical to understanding the boundaries of this state’s groundwater reservoirs.

OWRD’s Groundwater Report for the Division 512 rules states:

- Groundwater in the Harney Basin occurs within a single groundwater-flow system that includes several *distinct*, yet hydraulically connected areas *distinguished by local geology, location in the basin-wide groundwater flow system, and local rate and magnitude of recharge and discharge*.
- Groundwater within the Harney Basin is hydraulically connected both laterally and vertically throughout the area, however, groundwater occurs in *multiple hydraulically connected geologic units*, often follows *divergent or convergent flow paths*, and *varies spatially* in terms of horizontal and vertical hydraulic gradient and local rates and magnitudes of recharge and discharge.
- Groundwater occurs within a *complex groundwater flow system* that can produce substantial amounts of water to wells in some areas but little water in other areas *depending on the underlying rocks and sediments*, and the *local rate and magnitude of groundwater recharge and discharge*.

The U.S. Geological Survey report titled “Groundwater Resources of the Harney Basin, Southeastern Oregon” acknowledges the variability of the Harney Basin. This USGS study does not define the “groundwater reservoir,” but does discuss the complexity of the groundwater system, including a description of differing geology, differing groundwater quality and quantity, differing hydraulic gradients, and different areas of recharge and discharge, among many other things. The term “groundwater reservoir” does not appear in the USGS study report. Nevertheless, OWRD has consistently misled the public by stating that its identification of the “groundwater reservoir” subject to the Division 512 rules was a scientific determination rather than a policy one and that, as a scientific determination, it cannot be questioned or challenged. RAC members have repeatedly questioned this delineation and have offered up local knowledge that has not been incorporated into the rulemaking process.

OWRD has not provided a clear scientific basis for delineating the entire Harney Basin groundwater study area as one groundwater reservoir, other than to say that the entire basin is hydraulically connected. OWRD’s stated definition of hydraulic connection is that there are no known physical barriers to groundwater flow. While known physical barriers may not exist, there are many characteristics that distinguish one area from another. The proposed delineation does not benefit from the USGS groundwater study other than to reinforce a simplified understanding of the groundwater system as one “big bowl.” Since 1955, OWRD has had a responsibility to “identify and define tentatively the location, extent, depth and other characteristics of each ground water reservoir in this state, and shall assign to each a distinctive name or number or both as a means of identification.” ORS 537.665. This statute suggests there will be greater scientific

rigor associated with the identification and definition of groundwater reservoirs. Unfortunately, that is not being achieved.

OWRD's own Groundwater Report states, with support from the USGS groundwater study, that there are distinct areas in the Harney Basin with distinguishing factors. Yet, OWRD not account for these distinct areas in the delineation of the proposed groundwater reservoir. Instead, OWRD includes these multiple, distinct areas in one groundwater reservoir for the purpose of including them in a critical groundwater area without having to provide substantial site-specific evidence. Furthermore, under ORS 537.735 OWRD has the authority to include only portions of the groundwater reservoir in a critical groundwater area, but here, OWRD is insisting on lumping the entire Harney Basin together despite localized differences in groundwater conditions and aquifer characteristics.

OWRD has not made an effort to incorporate local knowledge into the definition or delineation of groundwater reservoirs in the Harney Basin. The groundwater study collected significant scientific information that characterized the groundwater flow system and could be used to develop a more refined understanding and delineation of groundwater reservoirs that also accounts for local knowledge. Instead of using this defensible approach, OWRD has adopted a politically convenient definition and actively resisted discussion. This has resulted in an oversimplified CGWA designation that will have significant policy ramifications when applied in other basins. Additional criteria should be considered when defining and delineating groundwater reservoirs in addition to hydraulic connectivity. OWRD needs to provide a more comprehensive technical and legal basis for delineating the entire Harney Basin as a single groundwater reservoir and invite public discussion.

D. THE FINDINGS IN OWRD'S GROUNDWATER REPORT DO NOT JUSTIFY DELINEATING THE ENTIRE HARNEY BASIN AS A CGWA.

OWRD's Groundwater Report states that, in the Harney Basin, the following requirements from ORS 537.730(1)(a)-(g) have been met:

- 537.730(1)(a): Groundwater levels are declining or have declined excessively.
- 537.730(1)(e): The available groundwater supply is being or is about to be overdrawn.

Harney County does not support these determinations for portions of the basin as described in greater detail below.

1. Certain Subareas do not contain wells that have declines excessively.

"Declined excessively" is defined in OAR 690-008-0001 as follows:

(4) "Declined Excessively" means any cumulative lowering of the water levels in a ground water reservoir or a part thereof which: ... (d) Constitutes a lowering of the

annual high-water level within a ground water reservoir, or part thereof, greater than 50 feet below the highest known water level[.]

The Groundwater Report shows that only wells in the Weaver Springs subarea and the Northeast-Crane subarea (and one singular well in the Dog Mountain subarea) have met this definition. **No wells** have met this threshold of having “declined excessively” in the Silvies subarea, Lower Blitzen-Voltage subarea, Upper Blitzen subarea, or Silver Creek subarea and groundwater levels in these areas have not approached this definition.

2. Certain Subareas do not contain excessively declining water levels.

“Excessively declining water levels” is defined in OAR 690-008-0001 as follows:

- (6) “Excessively Declining Water Levels” (Note: “Excessively” as used in ORS 537.730(1)(a) is taken to modify both “are declining” and “have declined”) means any ongoing lowering of the water level in a ground water reservoir or part thereof which: ...
(b) Represents an average downward trend of three or more feet per year for at least 10 years[.]

The Groundwater Report shows that wells in the Weaver Springs subarea and the Northeast-Crane subarea have met this definition, while two wells in the Dog Mountain subarea and one well in the Silvies subarea also met this definition. **No wells** have met this threshold of “excessively declining water levels” in the Lower Blitzen-Voltage subarea, Upper Blitzen subarea, or Silver Creek subarea and groundwater levels in these areas have not approached this definition.

Table 1. Wells in each subarea that have declined excessively or excessively declined.

Subarea	Presence of Wells that have Declined Excessively	Presence of Wells that are Excessively Declining
Total	48 wells	25 wells
Weaver Springs	30 wells	14 wells
Northeast Crane	10 wells	8 wells
Dog Mountain	2 wells	2 wells
Silvies	0 wells	1 well
Silver Creek	0 wells	0 wells

3. Certain subareas are not overdrawn, or are not contributing to any overdraw.

Overdraw is defined in OAR 690-008-0001 as follows:

(7) “Overdraw” means to artificially produce water, in any one-year period, from a ground water reservoir, or part thereof, at an annual rate that: (a) Exceeds the average annual recharge to that ground water supply over the period of record[.]

According to the Groundwater Report, OWRD’s definition of “overdraw” from OAR 690-008-0001 does not consider the natural discharge component of the water budget – i.e., groundwater discharging to streams, springs, and native vegetation. Consequently, if a groundwater reservoir is found to be in an “overdraw” condition, then eventually the groundwater discharging naturally to streams, springs, and native vegetation will be captured by groundwater pumping. It is noteworthy that the definition presumably looks at actual water use (“artificially produce water”) rather than water rights. Under this definition, the actual pumpage is allowed by law to equal recharge, regardless of the impacts to other nonpermitted uses.

The Groundwater Report shows that one area is overdrawn (the Northern area which includes Northeast Crane, Silvies and Dog Mountain subareas), one area is about to be overdrawn (the Western area which includes Silver Creek and Weaver Springs subarea), and one area is not overdrawn (the Southern area which includes Lower Blitzen-Voltage and Upper Blitzen subareas). If Weaver Springs is excluded from the Western area, this area is not overdrawn or about to be overdrawn by OWRD’s definition. Notably, if the Harney Basin is “one groundwater reservoir” as OWRD purports, then if groundwater use is limited to current pumpage levels, the basin as a whole is NOT overdrawn. Accordingly, the overdraw analysis does not support designating the entire Harney Basin as a critical groundwater area, and the Division 512 rules should not be adopted in their current form.

Table 2. Determination of overdrawn groundwater resources.

Subarea	Groundwater Budget Area	Recharge	Estimated Use / Exceeds Recharge / Difference	Authorized Use / Exceeds Recharge / Difference
Total	Basin	173,000	144,800 / No / 28,200	277,101 / Yes / -104,101
Northeast Crane	Northern	78,000 acre feet	80,700 / Yes / -2,700	174,454 / Yes / -96,454
Silvies				
Dog Mountain				
Silver Creek	Western	47,000 acre feet	42,500 / No / +4,500	65,204 / Yes / -18,204
Weaver Springs				
Lower Blitzen-Voltage	Southern	48,000 acre feet	21,600 / No / +26,400	37,443 / No / 10,557
Upper Blitzen				

The Groundwater Report concludes with the following statement:

OWRD has substantial evidence of groundwater levels that have Declined Excessively or are Excessively Declining (537.730(1)(a)).¹ In two out of the three water budget regions the available groundwater supply is being or is about to be overdrawn (537.730(1)(e)).²

Only two parts of the Harney Basin (the Weaver Springs subarea and Northeast-Crane subarea) have substantial evidence supporting the claim that the basin meets the criteria for designating a critical groundwater area. The rest of the Harney Basin is only included in the critical groundwater area because of their purported hydraulic connection to areas of decline and OWRD's over simplified definition of a groundwater reservoir and hydraulic connectivity. A much more sensible approach would be to only designate a CGWA in the areas where substantial evidence supports the conclusion that the CGWA criteria are met, while excluding those areas which are not meaningfully contributing to—or being affected by—groundwater declines or overdraw. This is the approach that should be adopted here, and the Division 512 rules should be revised to comport with these comments, thereby achieving the rule's substantive goals while reducing negative economic impact of the rule on businesses.

E. MANY SUBAREAS OF THE HARNEY BASIN HAVE REASONABLY STABLE WATER LEVELS, AND THEREFORE WATER WITHDRAWALS SHOULD NOT BE AFFECTED.

In September of 2024, OWRD adopted updated groundwater allocation policies, including an updated definition of “reasonably stable groundwater levels.” This definition in OAR 690-008-0001 is as follows:

(9) “Reasonably Stable Groundwater Levels” means that Annual High Water Levels, based on observed trends over time, remain within a range consistent with sustaining the function and character of a groundwater reservoir indefinitely, and:

(a) The Annual High Water Levels as measured at one or more representative wells in a groundwater reservoir or part thereof:

(A) indicate no decline or an average rate of decline of less than 0.6 feet per year over any immediately preceding averaging period with duration between 5 and 20 years. Four Annual High Water Levels are required to calculate the rate of change; one must have been measured in the year to which the evaluation of reasonably stable applies, and at least one must have been measured between 5 and 20 years prior; and

(B) have not declined by more than 25 feet from a reference level to the level in the year to which the evaluation of reasonably stable applies. The reference level shall be the highest known water level unless Annual High Water Levels have

¹ **Note:** There are three proposed subareas in the basin with NO wells that have declined excessively or are excessively declined.

² **Note:** The southern area is not overdrawn or about to be overdrawn and has no data showing wells that are declined excessively or excessively declining. The Western area is overdrawn only when including the most problematic part of the basin (Weaver Springs). If groundwater use was capped at estimated use and the groundwater use in Weaver Springs was reduced, the Western part of the basin would not be overdrawn or about to be overdrawn.

been measurably increased by human activity, in which case the Department may set a different reference level using best available information.

A review of available data shows that OWRD may still be issuing groundwater rights for some subareas of the Harney Basin if they were located in nearly any other basin in Oregon. Many subareas do not, on their own, meet the criteria necessary for a CGWA designation, and are therefore only proposed for designation because of some purported “hydraulic connection” to areas of significant groundwater decline. The Division 08 rules define a target groundwater level of 0 feet of decline and allow much less than 25 feet of overall decline, which is more restrictive than the standard used to make CGWA designations.

By law, when OWRD issued statutory groundwater rights in the Harney Basin, it made a determination that water was available, that the water right was in the public interest, and that it ensured public welfare, safety, and health. OWRD cannot retroactively make a different determination without substantial evidence and contrary to existing laws. OWRD has a legal obligation under ORS 537.525 and ORS 536.310 to protect existing water rights. OWRD has already made commitments to water rights holders and has a responsibility to honor its commitments and not act in an arbitrary manner without substantial evidence showing that thresholds for action in statute and rules have actually been met or exceeded. In this instance, OWRD has not made that showing for large parts of the Harney Basin, where groundwater levels are stable, and not subject to overdraw.

F. THE PROCESS FOR DEVELOPING THE DIVISION 512 RULES LACKED COLLABORATION AND MEANINGFUL PUBLIC ENGAGEMENT, RESULTING IN A PROPOSED CGWA DESIGNATION UNTETHERED TO THE BEST AVAILABLE SCIENCE.

The Harney County Court appreciates being involved as a member of the rule advisory committee for the Division 512 rules, but had an expectation of more formal consultation and coordination throughout the rulemaking process. At the beginning of this process, former county commissioners were ensured a certain level of involvement by OWRD, including a spirit of partnership and a desire for collaboration. OWRD has since significantly changed its approach and message with respect to partnership and collaboration. From April 2023 to May 2025, OWRD used language indicating its intent to foster collaboration and seek consensus. At RAC Meeting #7, OWRD unceremoniously rescinded its commitment to collaboration and consensus by informing the RAC members that it had been a “mistake” to set that expectation. From that point forward, the RAC was put in the role of reacting to OWRD’s proposals. This was a deeply troubling development in the RAC process and was contrary to many previous commitments OWRD had made. This is one of many commitments OWRD made, but failed to follow through.

OWRD’s attempts to form discussion groups in the fall of 2024 to increase dialogue around key concepts was mostly perfunctory and performative. Many RAC members, and members of the public, do not feel that their interests and concerns were seriously considered by OWRD, and grew increasingly disillusioned and mistrustful throughout the process. Following the public hearings in June, there were renewed concerns that OWRD was merely defending its

position on the Division 512 rules, had little interest in public input, and was relying exclusively on the agency's technical model.

It is worth noting that OWRD was not originally proposing regulatory reductions in most of the Harney Basin due a lack of corroborating data. It was only when OWRD began to use its technical model, and "optimized" the model without any real peer review or public input, that OWRD started to propose more drastic regulatory reductions for portions of the Harney Basin. Now, areas of the Harney Basin that could be considered "reasonably stable" are facing significant proposed reductions in groundwater use. This has been decided and defended by OWRD even with significant concern and confusion repeatedly raised by RAC members. Harney County is concerned that OWRD increasingly relied on the preferences of interest groups that reside outside of the basin, while largely dismissing the concerns and preferences of Harney County residents.

According to ORS 537.525, there is a statutory preference for "voluntary joint action by the Water Resources Commission and the ground water users concerned whenever possible" and that the "police power of the state" only be used "when such voluntary joint action is not taken or is ineffective." Harney County has been respectfully requesting voluntary joint action with OWRD for a decade. Harney County has proactively produced a place-based integrated water resources plan, cooperated in data collection and the USGS groundwater study, and has championed and secured resources at the state and federal levels to proactively address known issues. Harney County has repeatedly expressed interest in the creation of voluntary agreements and has requested support from OWRD to develop those agreements. The Harney Basin has a strong history of collaborative problem solving. The proposed Division 512 rules demonstrate clearly that OWRD is neglecting its responsibility to pursue voluntary joint action and is instead pursuing police action without making meaningful efforts to take voluntary joint action. Therefore, the proposed rules should be rescinded and reconsidered at this time. The Harney County Court has an expectation for ongoing communication, consultation, and coordination as the Division 512 rules are revised or implemented.

G. THE PROPOSED DIVISION 512 RULES ARE INCONSISTENT WITH OWRD'S REGULATORY AND STATUTORY AUTHORITY.

The proposed Division 512 rules violate many existing policies governing groundwater rights and use in Oregon, and are overly restrictive and punitive. OWRD does not have a defensible scientific and legal basis to declare most of the Harney Basin a critical groundwater area. If areas that do **not** meet the criteria for inclusion in a critical groundwater area are included, then the permissible total withdrawal for those areas should be set at the current authorized use or current estimated pumpage. Regulatory reductions should only occur when a median of monitored wells meet an agreed upon threshold, otherwise OWRD should prioritize voluntary agreements and voluntary action in those areas. The recommendations provided in the comments below contain an approach that Harney County believes is more consistent with Oregon law.

H. THE PROPOSED DIVISION 512 RULES WERE DEVELOPED WITHOUT MEANINGFUL PUBLIC INPUT.

Under the Administrative Procedures Act (“APA”) (ORS 183.332), OWRD is required to “seek to retain and promote the unique identity of Oregon by considering local conditions when an agency adopts policies and rules.” Harney County does not believe that OWRD is acting in accordance with this requirement. The proposed actions of OWRD will fundamentally change the nature of Harney County’s communities and decimate the local economy and associated public services and amenities. While the Notice of Rulemaking requests comments on the proposed rules’ negative economic impacts, now is not really the time for OWRD to explore those impacts. OWRD should have given full consideration to local conditions at the time it was developing the Division 512 rules, and its failure to do so is contrary to the purpose of the APA.

The APA (ORS 183.333) also requires that OWRD “seek public input to the maximum extent possible before giving notice of intent to adopt a rule.” The metric for this policy should not be how many meetings have been held, but rather whether the participants feel that their input has been solicited and meaningfully incorporated into the rulemaking process. In this process, much of the input provided by RAC members and the public has not been considered or meaningfully incorporated by OWRD. OWRD instead spent the majority of the meeting time presenting and defending their position rather than actively engaging with the public. This approach is inconsistent with the legislative intent of the APA, and is unfortunate given Harney County’s willingness and eagerness to play a meaningful role in the development of the Division 512 rules.

The APA (ORS 183.502) also gives authority to agencies to use alternative means of dispute resolution. This was requested at various times by RAC members during the development of the Division 512 rules. OWRD did not seriously consider or meaningfully respond to this request.

Ultimately, OWRD’s refusal to comply with the intent and spirit of the APA extinguished the trust and meaning of the RAC process, while also leaving the proposed Division 512 rules prone to legal challenge. It’s also worth reminding OWRD that this process sets a “precedent” for future CGWA designations. If OWRD continues to take a similar approach in future CGWA designations, then it should be expected that local governments, businesses, and community groups will become even more distrustful as the agency imposes its own will, rather than listen to the knowledge of local people. Rather than proceed with adopting the current ill-advised rules, Harney County implores OWRD to return to the RAC process, give the members a meaningful opportunity for input and collaboration, and amend the rules based on the input received.

I. THE FISCAL IMPACT STATEMENT UNDERSCORES WHY IT IS IMPORTANT TO REVISE THE PROPOSED RULES TO REDUCE ECONOMIC IMPACTS, ESPECIALLY WHERE REVISIONS ARE CALLED FOR BY THE FACTS AND DATA AVAILABLE.

The APA (ORS 183.333) requires that OWRD to work with the advisory committee to determine “whether the rule will have a fiscal impact, what the extent of that impact will be and

whether the rule will have a significant adverse impact on small businesses. If the committee indicates that the rule will have a significant adverse impact on small businesses, the agency shall seek the committee's recommendations on compliance with ORS 183.540 (Reduction of economic impact on small business)." We appreciate that OWRD listened to requests from the RAC to produce a more comprehensive fiscal impact analysis of the proposed rules. This Fiscal Impact Statement shows that the proposed rules will have significant economic impacts to Harney County. Over the duration of the rules Harney County stands to lose 320 jobs, \$18M in labor income, and \$61M in annual economic output. This is a seismic economic impact to our County with a real gross domestic product of \$352M in 2023, according to the U.S. Bureau of Economic Analysis; that is a 17% reduction in economic output. RAC members have provided numerous comments regarding how OWRD could reduce the economic impact on small businesses as is required, but these comments continue to fall on deaf ears. This level of impact, especially when there are alternatives, is completely unacceptable to Harney County. OWRD has taken an approach of decide, announce, defend, and has repeatedly demonstrated that it is not open to feedback from the Harney County Court, the RAC or the public. As a result, the people of Harney County will be those who suffer the most. Thankfully, there is a way to reduce economic impacts while still achieving the goals of the CGWA designation. If OWRD is willing to listen to Harney County, it should adopt the recommendations described below.

J. RECOMMENDED CHANGES TO THE PROPOSED DIVISION 512 RULES.

- **Groundwater reservoirs should be redrawn to account for significant hydrogeologic variability in the Harney Basin, and should meaningfully incorporate local input and knowledge.** A simplified definition of hydraulic connection was used as the sole criteria for determining the bounds of the Harney Basin groundwater reservoir. OWRD's approach does not account for different aquifer properties, geology, groundwater chemistry, recharge areas, discharge areas, or other factors when determining groundwater reservoirs. Defining the entire Harney Basin as a single groundwater reservoir is the only reason that OWRD can designate the entire basin as a critical groundwater area; otherwise, large subareas would be excludable because they do not meet the criteria for being designated as a CGWA. OWRD's oversimplified approach does not account for the variability found through the groundwater study and penalizes some parts of the Harney Basin just because of their hydraulic connection with areas with deep drawdowns. OWRD should not rely on its simplified definition of hydraulic connection, and instead should look at localized reservoir conditions to take a more-targeted approach at halting drawdown problem areas, without penalizing sustainable groundwater uses in other areas.
- **Each of the subareas should be considered their own "groundwater reservoir," and CGWAs designated accordingly.** As described above, each subarea has distinct properties (i.e., geology, recharge areas, discharge areas, chemistry, etc.) and should be considered their own groundwater reservoirs for management purposes. By allowing each subarea to be its own reservoir, the parts of the Harney Basin without problematic data can achieve stability and avoid a CGWA designation, or have a designation lifted. A

process and specific criteria for lifting the Critical Groundwater Area designation should be included in any rules which are adopted.

- **The Lower Blitzen-Voltage and Upper Blitzen subareas have not met the criteria to be designated Critical Groundwater Areas and should be excluded from the Critical Groundwater Area designation, or the permissible total withdrawal should be set at authorized amounts or current estimated pumpage.** No supporting evidence exists to include these areas in the critical groundwater area boundary. These subareas currently meet the definition of “reasonably stable.” These subareas are not overdrawn or about to be overdrawn and do not have any wells that have declined excessively or are excessively declining. Under existing statute and rules, hydraulic connection to an area of decline is not a criteria that can be used to designate a critical groundwater area. These subareas should be excluded from the critical groundwater area boundary and managed via voluntary agreements. If this area is included, the permissible total withdrawal should be set at the current authorized use or the current estimated pumpage.
- **The Silver Creek subarea has not met the criteria to be designated a critical groundwater area and should be excluded from the critical groundwater area or the permissible total withdrawal should be set at authorized amounts or current estimated pumpage.** No supporting evidence exists to include this area in the critical groundwater area boundary. This subarea currently meets the definition of “reasonably stable.” If groundwater use is controlled in Weaver Springs, as proposed, the Silver Creek area is not overdrawn or about to be overdrawn and does not have any wells that have declined excessively or are excessively declining. Under existing statute and rules, hydraulic connection to an area of decline is not a criteria that can be used to designate a critical groundwater area. This subarea should be excluded from the critical groundwater area boundary and managed via voluntary agreements. If this area is included, the permissible total withdrawal should be set at the current authorized use or the current estimated pumpage.
- **Portions of the Silvies subarea (those areas with the highest recharge from the Silvies River) have not met the criteria to be designated a critical groundwater area and should be excluded from the critical groundwater area or permissible total withdrawal should be set at authorized amounts or current estimated pumpage.** No supporting evidence exists to include these areas in the critical groundwater area boundary. This subarea currently meets the definition of “reasonably stable.” This subarea is in a region that is overdrawn or about to be overdrawn, but does not have any wells that have declined excessively or are excessively declining. These subareas should be excluded from the critical groundwater area boundary and managed via voluntary agreements. If this area is included, the permissible total withdrawal should be set at the current authorized use or the current estimated pumpage.
- **Weaver Springs has clearly met the criteria for a critical groundwater area.** It makes sense that OWRD focus regulatory reductions on the portion of the Harney Basin where criteria for a critical groundwater area designation have definitively been reached. This

area has been overdeveloped and has been allowed to decline to an unreasonable degree and is not “reasonably stable.” The declines in Weaver Springs are having negative impacts on domestic wells and on other Subareas. Therefore, it makes sense to designate Weaver Springs as a CGWA, while excluding those other areas where the CGWA criteria are not met.

- **Thresholds for regulatory action should be set in the Northeast-Crane and Dog Mountain subareas.** The Northeast-Crane subarea is overdrawn or about to be overdrawn and while there are some wells that have declined excessively or are excessively declining, there are large portions of the Northeast-Crane subarea that currently meet OWRD’s definition of “reasonably stable.” OWRD should set a threshold to take regulatory action in the Northeast-Crane and Dog Mountain subareas once a median of the monitored wells meet or exceed the threshold of 25 feet of decline or exceed the 0.6 ft/year of decline threshold (the standards set in OAR 690-008). The permissible total withdrawal should be set at the amount that would stabilize groundwater levels at or near this amount. No regulatory reductions should occur in this area prior to these thresholds being met.
- **OWRD should review existing policies to ensure equitable application across the state.** It is fundamentally unfair for OWRD to be curtailing groundwater use in places where conditions are “reasonably stable,” and where, if these areas were located nearly anywhere else in Oregon, OWRD might still be issuing groundwater rights. For wells in the Silver Creek, Lower Blitzen-Voltage and Silvies subareas, declines are minor and groundwater levels in some wells have risen above reference levels set forth in the permit conditions. Furthermore, representatives from OWRD were telling groundwater users in these parts of the Harney Basin as recently as a year ago that they were not seeing problems in these areas. Groundwater users had been led to believe over most of the past decade that these areas were not in jeopardy and in fact, additional development may be possible. OWRD has even approved new water rights in these areas and approved transfers into these areas. Suddenly curbing groundwater use in these areas would be inequitable, and sets a concerning precedent for the rest of the state.
- **There is sufficient information to close the Harney Basin to new appropriations, limit groundwater pumpage to historic beneficial use, and curtail groundwater in areas that have met the criteria for a critical groundwater area designation.** Although not all parts of the Harney Basin meet the criteria to be included in a critical groundwater area, there is sufficient information to support proactive groundwater management. The entire Harney Basin should be closed to additional appropriations to protect existing uses and users, groundwater use should be limited to historic beneficial use, OWRD should proceed with cancellation of unused water rights, unauthorized groundwater use should be stopped, and groundwater use should be reduced in areas with significant declines. The proposed reductions in some subareas are not supported with substantial site-specific evidence.

- **Consult with cities to determine the appropriate amount of water allocated for each 6-year check-in period.** City officials have contacted Harney County Court expressing concern with the lack of effective outreach to--and coordination with--the cities on the proposed rules. OWRD should make a concerted effort to coordinate with city officials and administrators while revising the draft rules to ensure that the rules account for the needs and interests of cities.
- **Provide a pathway for offset water for new development and municipal/quasi-municipal use.** The RAC has repeatedly requested that OWRD develop a pathway in the rules to allow for new development of municipal/quasi-municipal purposes if offset water can be secured. Despite these repeated requests, OWRD has still not proposed language to this effect. This is of critical importance to the Harney County community as it continues to look for opportunities to maintain and grow our economy.
- **Exempt recreational and commercial geothermal use.** The Crystal Crane Hotsprings is an important feature of the Harney Basin. These hot springs have grown considerably in recent years and have planned significant expansions with financial support from the state. As it stands, the current rules could negatively affect their ability to expand. Geothermal use for recreational and commercial purposes should be exempted from the rules. This is an area where Harney County supports additional economic development and believes that it can occur without significantly altering the groundwater budget in the basin.

IV. CONCLUSION

The proposed Division 10 report and Division 512 rules do not properly utilize best available science and sets OWRD up for unnecessary and potentially protracted legal battles which might hinder the agency's ability to effectively address known areas of concern in a timely manner. OWRD should consider the significant policy implications of the underlying logic and assumptions being proposed through this rule making, and take measures to develop a clearer and more robust process for defining groundwater reservoirs and determining when particular thresholds for inclusion in a critical groundwater area have been met. The current approach is oversimplified, irresponsible, and ultimately unfair to the people of Harney County. Harney County supports the goal of sustainable groundwater management, but do not support the technical basis for regulatory action proposed by OWRD.

In conclusion, the recommendations of the Harney County Court adhere to existing Oregon laws and policies and would actually reduce the economic impact as required by law. Harney County stands ready to work towards sustainable groundwater management alongside OWRD and groundwater users as required by law so that OWRD can focus its regulatory and legal resources on the highest and most pressing needs in the state. Harney County urges OWRD not to adopt the proposed Division 512 rules at this time, and return to the RAC process to engage in meaningful collaboration on the needs of the state, local communities, and businesses.

DATED this 6th day of August, 2025.

Sincerely,

A handwritten signature in black ink, appearing to read "DMC", with a horizontal line extending to the right.

Dominic M. Carollo
Nolan G. Smith

County Counsel for Harney County

NGS/klh
Cc: client

HARTT Laura A * WRD

From: Nolan Smith <nsmith@carollolegal.com>
Sent: Monday, August 11, 2025 2:37 PM
To: WRD_DL_rule-coordinator
Subject: Comments of Harney County Court on Division 512 Rulemaking
Attachments: 8. d. Division 10 Process.pdf

Some people who received this message don't often get email from nsmith@carollolegal.com. [Learn why this is important](#)

Good afternoon,

Attached are comments the Harney County Court submitted to OWRD Director Doug Woodcock in May of 2024 regarding the Division 512 rulemaking process. Per our email this morning, please include this letter as part of the public comment record for this rulemaking.

Thank you.

NOLAN G. SMITH



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August 6, 2025

Via Email and US Mail

Kelly Meinz
Oregon Water Resources Department
725 Summer St. NE
Suite A
Salem, Oregon 97301
WRD_DL_rule-coordinator@water.oregon.gov

Re: Comments of Harney County Court on Division 512 Rulemaking.

I. BACKGROUND

My firm serves as County Counsel for Harney County. On behalf of the Harney County Court ("Harney County"), the County offers the following comments on the Oregon Water Resources Commission and Department's (collectively, "OWRD") proposed Division 512 groundwater management rules, and proposed Harney Basin Critical Groundwater Area.

The designation of critical groundwater areas ("CGWA") is a very sensitive issue given its significant impact on a multitude of different interests. In Harney County, the withdrawal of ground water is vital for economic development and community health. Therefore, Harney County has paid close attention to the proposed Division 512 rules, participating in Rule Advisory Committee ("RAC") meetings and carefully reviewing OWRD's studies and analysis. Unfortunately, the proposed rules would have an immense negative effect on Harney County residents and businesses. Harney County has significant concerns with regards to the technical and legal basis OWRD is using to declare the entire Harney Basin a Critical Groundwater Area as outlined in OWRD's "Groundwater Report for the Harney Basin Critical Groundwater Area Rulemaking" ("Groundwater Report"). Therefore, Harney County recommends the following:

- 1) Develop a different definition and delineation of "groundwater reservoir" that takes into account more scientific information and criteria as well as local knowledge and input.
- 2) Adjust the boundary of the Lower Blitzen Voltage subarea to include the properties south of Windy Point.
- 3) Examine the proposed boundaries for the Silvies subarea and include local knowledge in the delineation.
- 4) Set the permissible total withdrawal of the Silver Creek subarea, portions of the Silvies subarea, and Lower Blitzen Voltage subareas as the current authorized amount or the current amount of estimated pumpage (with an updated estimate), or exclude these subareas from the Critical Groundwater Area designation altogether.

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- 5) Remove the Upper Blitzen subarea from the Critical Groundwater Area.
- 6) Proceed with regulatory action in the Weaver Springs subarea given that it has clearly met the criteria for a Critical Groundwater Area.
- 7) For remaining areas (Northeast-Crane and Dog Mountain) set thresholds at which regulatory action will occur and encourage voluntary agreements until thresholds are met or exceeded.
- 8) Pursue voluntary joint action with groundwater users as required by law and minimize economic impacts to the greatest extent possible.

Given the importance of OWRD's Division 512 rules, Harney County implores OWRD to carefully consider all options that would reduce the effect of a critical groundwater area designation, while achieving the desired results. Therefore, Harney County respectfully requests that OWRD consider these comments, and amend its proposed rules in conformance with this letter.

II. HARNEY COUNTY'S INTERESTS

Harney County is Oregon's largest county at 10,226 square miles, located in the high desert of eastern Oregon. With a total population of approximately 7,500, this computes to an average of less than one person per square mile in the County, compared to an average of almost 40 people per square mile in Oregon as a whole. Approximately 75% of the County's land base (an area almost the size of New Jersey) is publicly owned. Therefore, the County Court faces unique challenges in its ongoing effort and duty to protect and enhance the economy, welfare, and quality of life of its citizens. These challenges are exacerbated by the high desert ecosystem of Harney County, which receives only 10.13" of precipitation annually on average. Because precipitation is so sparse and surface water is minimally available, groundwater is of great importance to Harney County.

Harney County's local economy depends heavily on the natural resource and agricultural sectors. A smaller portion of the economy is also supported by tourism, which consists of people visiting the County to engage in a diverse array of activities such as hunting, fishing, motorized vehicle travel, horseback riding, hiking, and wildlife viewing. Because the County's economy and welfare is so closely linked with natural resources, and in particular scarce water resources, regulations affecting natural resources are of great interest to the County.

The proposed Division 512 rules, and the designation of critical groundwater areas, strike at the heart of Harney County's natural resource interests. Therefore, Harney County has a keen interest in seeing that the designation of CGWAs is equitable for all affected parties, and based on the best available evidence possible while further considering County needs for the present and future. Harney County therefore submits the following comments on the proposed Division 512 rules.

III. COMMENTS

A. LEGAL BACKGROUND.

In Oregon's water code, ORS 537.535—.746 regulates the use and appropriation of groundwater. First, ORS 537.535—.630 provide a process for obtaining groundwater rights. Next, ORS 537.665—.720 provide a process for adjudicating groundwater rights. Finally, ORS 537.730—.742 provide a process for OWRD's designation of critical groundwater areas and imposition of "corrective controls" consistent with a CGWA determination.

ORS 537.730 et seq. establishes two very distinct regulatory mechanisms for designating CGWA's and regulating groundwater appropriations: (1) a quasi-legislative mechanism for designating a CGWA and limiting new appropriations of groundwater (ORS 537.730-537.735); and (2) a quasi-judicial mechanism for limiting groundwater use by existing water right holders within a designated CGWA (ORS 537.742).

In the case of CGWA designations, ORS 537.730 authorizes the Commission to designate by rule a CGWA based on findings by the Department that certain circumstances are present, such as different forms of substantial interference. *See, e.g.*, ORS 537.730(1)(b) ("The Water Resources Commission by rule may designate an area of the state a critical ground water area if: [...] [t]he Water Resources Department *finds* a pattern of substantial interference") (emphasis added). The text and context of ORS 537.730 authorizes the Commission to quasi-legislate, through rulemaking, the designation of a CGWA based merely on factual findings by the Department, though the Commission must also take into account information presented at the public hearing required by ORS 537.730(2). This rulemaking serves as a property encumbrance within the area deemed a CGWA. ORS 537.740. In a rule designating a CGWA, ORS 537.735(3) authorizes the Commission to adopt corrective control provisions that primarily restrict or regulate the issuance of new water rights, but not the use of existing water rights. *See* ORS 537.735(3)(a)-(c). Although this statutory scheme may present some of its own constitutional concerns, it is clear that the statutory authorities in ORS 537.730-537.735 are directed at providing the Commission quasi-legislative authority to designate CGWAs, and regulate future new appropriations of ground water, based largely on information provided by the Department to the Commission.

While the designation process, and regulation of prospective new uses of groundwater, is quintessentially a quasi-legislative process, i.e., policymaking in nature, the Commission's authority to impose limitations on groundwater use by existing water right holders is very different. The statutory scheme requires that the Commission's authority to regulate in this realm be exercised strictly through quasi-judicial procedures. Indeed, ORS 537.742 is focused on the limitation of groundwater use by existing water right holders, *see* ORS 537.742(2)(a)-(f), and the statute explicitly requires that such corrective control measures affecting existing water right holders may only be imposed through a "final order" issued after a "contested case proceeding."

The fact that the Legislature delegated *legislative* authority to the Commission to impose "corrective control provisions" applicable to new appropriations and water rights under ORS 537.735(3), but conspicuously required that parallel "corrective control measures" applicable to

existing water rights under ORS 537.742(2) only be imposed through *adjudicatory* procedures, makes it plain and obvious that the Legislature made a very deliberate and conscious choice to ensure that the due process rights of existing water right holders be honored and respected.

Harney County previously submitted comments on OWRD's Division 10 rulemaking, which evaluated the law discussed above, as well as due process concerns. Harney County herein incorporates those prior comments, and provides additional comments on the Division 512 rules below.

B. APPLICATION OF THE DIVISION 10 RULES IN THE DIVISION 512 RULEMAKING HAS RESULTED IN LITTLE COORDINATION BETWEEN OWRD AND HARNEY COUNTY, AND HAS CURTAILED MEANINGFUL DISCUSSION AND ENGAGEMENT.

OWRD adopted its revised Division 10 rules in September of 2023. Those rules set forth the process for designating critical groundwater areas. The Harney Basin is the first basin where these updated rules are being applied, setting an important precedent for the rest of the state. OAR 690-010 outlines some of the process considerations set forth in Division 10:

(4) In addition to the requirements under section (1), prior to Commission adoption of a rule designating a critical groundwater area, the Department shall:

(a) Coordinate with affected local governments using the process described in OAR 690-010-0140; and

(b) Engage, as described in OAR 690-010-0150, with any federally recognized Indian tribes in Oregon;

(c) Prior to convening a rules advisory committee pursuant to ORS 183.333, the Department shall prepare a draft report based on the best available science and information, identifying the criteria met under ORS 537.730(1)(a) –

(g), identifying and characterizing the groundwater reservoirs subject to the proposed critical groundwater area designation and identifying corrective control measures likely to resolve the problems that resulted in the recommendation to designate a critical groundwater area. The draft report shall be posted on the Department's webpage until the end of the public comment period:

(A) Until the close of the public comment period, and consistent with ORS 183.335, the Department shall solicit and accept information and comments from the public regarding the draft report;

(B) The Department shall review the information and comments received and present a final report to the Commission that includes the Department's findings and conclusions and includes an assessment of the information and comments received;

(C) The report's findings and conclusions with respect to designation of a critical groundwater area shall be supported by substantial evidence that justifies the designation.

OAR 690-010-0130.

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Under the directive of OAR 690-010-0130, OWRD prepared the “Groundwater Report for the Harney Basin Critical Groundwater Area Rulemaking” to support its designation of the Harney Basin Critical Groundwater Area. Given that the Division 10 rules were adopted after the Division 512 RAC was convened, the Division 512 RAC did not begin with the review and discussion of the Groundwater Report. In August of 2023, OWRD made a verbal commitment during a Division 512 RAC meeting to provide a copy of the Groundwater Report to the RAC, and initiate coordination with local and tribal governments prior to the next RAC meeting in October. The Groundwater Report was not provided until June of 2024, after it had been requested again by members of the RAC. As of the writing of this letter, no formal presentations to the Harney County Court have been made, and the Harney County Court is still unclear about what coordination was or is supposed to occur under OWRD’s critical groundwater area designation process. Furthermore, city officials within Harney County have contacted the County expressing concern with the lack of effective outreach to, and coordination with, the cities on the proposed rules as required by Division 10.

Given that the Division 10 rules provide the technical basis for a critical groundwater designation, it is paramount that the science and study concerning CGWA designations be reviewed and discussed publicly before or early in the rulemaking process. Prior to the issuance of the Groundwater Report, OWRD had been communicating in public meetings and in the RAC itself that there were multiple areas of the Harney Basin where additional regulation of groundwater uses would not be necessary. OWRD also previously communicated a willingness to discuss the delineation of groundwater reservoirs in the Harney Basin. Now, OWRD is recommending significant curtailments to groundwater uses in the Harney Basin through the Division 512 rules, despite there being a lack of evidence that groundwater levels have excessively declined, are declining excessively, are overdrawn, or about to be overdrawn across multiple subareas within the basin. The Groundwater Report appears to be written in such a way to reinforce OWRD’s position, rather than to invite discussion and engagement from interested and affected parties.

OWRD’s approach to designating the CGWA in its Division 512 rules is contrary to the intent of the statutory scheme, Harney County’s understanding of the Division 10 rules, and ignores the importance of public engagement and consultation in the process for designating CGWA boundaries. When OWRD adopted the Division 10 rules, the agency parroted the importance of public engagement, and the language requiring groundwater reports was intended to provide insight into the agency’s thinking, and an enhanced opportunity for meaningful comment and review. Unfortunately, OWRD’s implementation of its own rules has left much to be desired. Harney County feels unheard, and the Groundwater Report has been used as a tool by OWRD to ignore criticisms of the Harney County Critical Groundwater Area. Therefore, Harney County urges OWRD to return to the drawing board, and engage in a collaborative analysis regarding the size, scope, and science of a proposed CGWA in the Harney Basin.

C. THE PROPOSED GROUNDWATER RESERVOIR DELINEATION IN THE DIVISION 512 RULES IGNORES LOCAL KNOWLEDGE.

ORS 537.515(6) defines a groundwater reservoir as a “designated body of standing or moving groundwater having exterior boundaries which may be ascertained or reasonably inferred.” While there may be discretion built into this definition, local knowledge is critical to understanding the boundaries of this state’s groundwater reservoirs.

OWRD’s Groundwater Report for the Division 512 rules states:

- Groundwater in the Harney Basin occurs within a single groundwater-flow system that includes several *distinct*, yet hydraulically connected areas *distinguished by local geology, location in the basin-wide groundwater flow system, and local rate and magnitude of recharge and discharge*.
- Groundwater within the Harney Basin is hydraulically connected both laterally and vertically throughout the area, however, groundwater occurs in *multiple hydraulically connected geologic units*, often follows *divergent or convergent flow paths*, and *varies spatially* in terms of horizontal and vertical hydraulic gradient and local rates and magnitudes of recharge and discharge.
- Groundwater occurs within a *complex groundwater flow system* that can produce substantial amounts of water to wells in some areas but little water in other areas *depending on the underlying rocks and sediments*, and the *local rate and magnitude of groundwater recharge and discharge*.

The U.S. Geological Survey report titled “Groundwater Resources of the Harney Basin, Southeastern Oregon” acknowledges the variability of the Harney Basin. This USGS study does not define the “groundwater reservoir,” but does discuss the complexity of the groundwater system, including a description of differing geology, differing groundwater quality and quantity, differing hydraulic gradients, and different areas of recharge and discharge, among many other things. The term “groundwater reservoir” does not appear in the USGS study report. Nevertheless, OWRD has consistently misled the public by stating that its identification of the “groundwater reservoir” subject to the Division 512 rules was a scientific determination rather than a policy one and that, as a scientific determination, it cannot be questioned or challenged. RAC members have repeatedly questioned this delineation and have offered up local knowledge that has not been incorporated into the rulemaking process.

OWRD has not provided a clear scientific basis for delineating the entire Harney Basin groundwater study area as one groundwater reservoir, other than to say that the entire basin is hydraulically connected. OWRD’s stated definition of hydraulic connection is that there are no known physical barriers to groundwater flow. While known physical barriers may not exist, there are many characteristics that distinguish one area from another. The proposed delineation does not benefit from the USGS groundwater study other than to reinforce a simplified understanding of the groundwater system as one “big bowl.” Since 1955, OWRD has had a responsibility to “identify and define tentatively the location, extent, depth and other characteristics of each ground water reservoir in this state, and shall assign to each a distinctive name or number or both as a means of identification.” ORS 537.665. This statute suggests there will be greater scientific

rigor associated with the identification and definition of groundwater reservoirs. Unfortunately, that is not being achieved.

OWRD's own Groundwater Report states, with support from the USGS groundwater study, that there are distinct areas in the Harney Basin with distinguishing factors. Yet, OWRD not account for these distinct areas in the delineation of the proposed groundwater reservoir. Instead, OWRD includes these multiple, distinct areas in one groundwater reservoir for the purpose of including them in a critical groundwater area without having to provide substantial site-specific evidence. Furthermore, under ORS 537.735 OWRD has the authority to include only portions of the groundwater reservoir in a critical groundwater area, but here, OWRD is insisting on lumping the entire Harney Basin together despite localized differences in groundwater conditions and aquifer characteristics.

OWRD has not made an effort to incorporate local knowledge into the definition or delineation of groundwater reservoirs in the Harney Basin. The groundwater study collected significant scientific information that characterized the groundwater flow system and could be used to develop a more refined understanding and delineation of groundwater reservoirs that also accounts for local knowledge. Instead of using this defensible approach, OWRD has adopted a politically convenient definition and actively resisted discussion. This has resulted in an oversimplified CGWA designation that will have significant policy ramifications when applied in other basins. Additional criteria should be considered when defining and delineating groundwater reservoirs in addition to hydraulic connectivity. OWRD needs to provide a more comprehensive technical and legal basis for delineating the entire Harney Basin as a single groundwater reservoir and invite public discussion.

D. THE FINDINGS IN OWRD'S GROUNDWATER REPORT DO NOT JUSTIFY DELINEATING THE ENTIRE HARNEY BASIN AS A CGWA.

OWRD's Groundwater Report states that, in the Harney Basin, the following requirements from ORS 537.730(1)(a)-(g) have been met:

- 537.730(1)(a): Groundwater levels are declining or have declined excessively.
- 537.730(1)(e): The available groundwater supply is being or is about to be overdrawn.

Harney County does not support these determinations for portions of the basin as described in greater detail below.

1. Certain Subareas do not contain wells that have declines excessively.

"Declined excessively" is defined in OAR 690-008-0001 as follows:

(4) "Declined Excessively" means any cumulative lowering of the water levels in a ground water reservoir or a part thereof which: ... (d) Constitutes a lowering of the

annual high-water level within a ground water reservoir, or part thereof, greater than 50 feet below the highest known water level[.]

The Groundwater Report shows that only wells in the Weaver Springs subarea and the Northeast-Crane subarea (and one singular well in the Dog Mountain subarea) have met this definition. No wells have met this threshold of having “declined excessively” in the Silvies subarea, Lower Blitzen-Voltage subarea, Upper Blitzen subarea, or Silver Creek subarea and groundwater levels in these areas have not approached this definition.

2. Certain Subareas do not contain excessively declining water levels.

“Excessively declining water levels” is defined in OAR 690-008-0001 as follows:

- (6) “Excessively Declining Water Levels” (Note: “Excessively” as used in ORS 537.730(1)(a) is taken to modify both “are declining” and “have declined”) means any ongoing lowering of the water level in a ground water reservoir or part thereof which: ...
(b) Represents an average downward trend of three or more feet per year for at least 10 years[.]

The Groundwater Report shows that wells in the Weaver Springs subarea and the Northeast-Crane subarea have met this definition, while two wells in the Dog Mountain subarea and one well in the Silvies subarea also met this definition. No wells have met this threshold of “excessively declining water levels” in the Lower Blitzen-Voltage subarea, Upper Blitzen subarea, or Silver Creek subarea and groundwater levels in these areas have not approached this definition.

Table 1. Wells in each subarea that have declined excessively or excessively declined.

Subarea	Presence of Wells that have Declined Excessively	Presence of Wells that are Excessively Declining
Total	48 wells	25 wells
Weaver Springs	30 wells	14 wells
Northeast Crane	10 wells	8 wells
Dog Mountain	2 wells	2 wells
Silvies	0 wells	1 well
Silver Creek	0 wells	0 wells

3. Certain subareas are not overdrawn, or are not contributing to any overdraw.

Overdraw is defined in OAR 690-008-0001 as follows:

(7) “Overdraw” means to artificially produce water, in any one-year period, from a ground water reservoir, or part thereof, at an annual rate that: (a) Exceeds the average annual recharge to that ground water supply over the period of record[.]

According to the Groundwater Report, OWRD’s definition of “overdraw” from OAR 690-008-0001 does not consider the natural discharge component of the water budget – i.e., groundwater discharging to streams, springs, and native vegetation. Consequently, if a groundwater reservoir is found to be in an “overdraw” condition, then eventually the groundwater discharging naturally to streams, springs, and native vegetation will be captured by groundwater pumping. It is noteworthy that the definition presumably looks at actual water use (“artificially produce water”) rather than water rights. Under this definition, the actual pumpage is allowed by law to equal recharge, regardless of the impacts to other nonpermitted uses.

The Groundwater Report shows that one area is overdrawn (the Northern area which includes Northeast Crane, Silvies and Dog Mountain subareas), one area is about to be overdrawn (the Western area which includes Silver Creek and Weaver Springs subarea), and one area is not overdrawn (the Southern area which includes Lower Blitzen-Voltage and Upper Blitzen subareas). If Weaver Springs is excluded from the Western area, this area is not overdrawn or about to be overdrawn by OWRD’s definition. Notably, if the Harney Basin is “one groundwater reservoir” as OWRD purports, then if groundwater use is limited to current pumpage levels, the basin as a whole is NOT overdrawn. Accordingly, the overdraw analysis does not support designating the entire Harney Basin as a critical groundwater area, and the Division 512 rules should not be adopted in their current form.

Table 2. Determination of overdrawn groundwater resources.

Subarea	Groundwater Budget Area	Recharge	Estimated Use / Exceeds Recharge / Difference	Authorized Use / Exceeds Recharge / Difference
Total	Basin	173,000	144,800 / No / 28,200	277,101 / Yes / -104,101
Northeast Crane	Northern	78,000 acre feet	80,700 / Yes / -2,700	174,454 / Yes / -96,454
Silvies				
Dog Mountain				
Silver Creek	Western	47,000 acre feet	42,500 / No / +4,500	65,204 / Yes / -18,204
Weaver Springs				
Lower Blitzen-Voltage	Southern	48,000 acre feet	21,600 / No / +26,400	37,443 / No / 10,557
Upper Blitzen				

The Groundwater Report concludes with the following statement:

OWRD has substantial evidence of groundwater levels that have Declined Excessively or are Excessively Declining (537.730(1)(a)).¹ In two out of the three water budget regions the available groundwater supply is being or is about to be overdrawn (537.730(1)(e)).²

Only two parts of the Harney Basin (the Weaver Springs subarea and Northeast-Crane subarea) have substantial evidence supporting the claim that the basin meets the criteria for designating a critical groundwater area. The rest of the Harney Basin is only included in the critical groundwater area because of their purported hydraulic connection to areas of decline and OWRD's over simplified definition of a groundwater reservoir and hydraulic connectivity. A much more sensible approach would be to only designate a CGWA in the areas where substantial evidence supports the conclusion that the CGWA criteria are met, while excluding those areas which are not meaningfully contributing to—or being affected by—groundwater declines or overdraw. This is the approach that should be adopted here, and the Division 512 rules should be revised to comport with these comments, thereby achieving the rule's substantive goals while reducing negative economic impact of the rule on businesses.

E. MANY SUBAREAS OF THE HARNEY BASIN HAVE REASONABLY STABLE WATER LEVELS, AND THEREFORE WATER WITHDRAWALS SHOULD NOT BE AFFECTED.

In September of 2024, OWRD adopted updated groundwater allocation policies, including an updated definition of “reasonably stable groundwater levels.” This definition in OAR 690-008-0001 is as follows:

(9) “Reasonably Stable Groundwater Levels” means that Annual High Water Levels, based on observed trends over time, remain within a range consistent with sustaining the function and character of a groundwater reservoir indefinitely, and:

(a) The Annual High Water Levels as measured at one or more representative wells in a groundwater reservoir or part thereof:

(A) indicate no decline or an average rate of decline of less than 0.6 feet per year over any immediately preceding averaging period with duration between 5 and 20 years. Four Annual High Water Levels are required to calculate the rate of change; one must have been measured in the year to which the evaluation of reasonably stable applies, and at least one must have been measured between 5 and 20 years prior; and

(B) have not declined by more than 25 feet from a reference level to the level in the year to which the evaluation of reasonably stable applies. The reference level shall be the highest known water level unless Annual High Water Levels have

¹ **Note:** There are three proposed subareas in the basin with NO wells that have declined excessively or are excessively declined.

² **Note:** The southern area is not overdrawn or about to be overdrawn and has no data showing wells that are declined excessively or excessively declining. The Western area is overdrawn only when including the most problematic part of the basin (Weaver Springs). If groundwater use was capped at estimated use and the groundwater use in Weaver Springs was reduced, the Western part of the basin would not be overdrawn or about to be overdrawn.

been measurably increased by human activity, in which case the Department may set a different reference level using best available information.

A review of available data shows that OWRD may still be issuing groundwater rights for some subareas of the Harney Basin if they were located in nearly any other basin in Oregon. Many subareas do not, on their own, meet the criteria necessary for a CGWA designation, and are therefore only proposed for designation because of some purported “hydraulic connection” to areas of significant groundwater decline. The Division 08 rules define a target groundwater level of 0 feet of decline and allow much less than 25 feet of overall decline, which is more restrictive than the standard used to make CGWA designations.

By law, when OWRD issued statutory groundwater rights in the Harney Basin, it made a determination that water was available, that the water right was in the public interest, and that it ensured public welfare, safety, and health. OWRD cannot retroactively make a different determination without substantial evidence and contrary to existing laws. OWRD has a legal obligation under ORS 537.525 and ORS 536.310 to protect existing water rights. OWRD has already made commitments to water rights holders and has a responsibility to honor its commitments and not act in an arbitrary manner without substantial evidence showing that thresholds for action in statute and rules have actually been met or exceeded. In this instance, OWRD has not made that showing for large parts of the Harney Basin, where groundwater levels are stable, and not subject to overdraw.

F. THE PROCESS FOR DEVELOPING THE DIVISION 512 RULES LACKED COLLABORATION AND MEANINGFUL PUBLIC ENGAGEMENT, RESULTING IN A PROPOSED CGWA DESIGNATION UNTETHERED TO THE BEST AVAILABLE SCIENCE.

The Harney County Court appreciates being involved as a member of the rule advisory committee for the Division 512 rules, but had an expectation of more formal consultation and coordination throughout the rulemaking process. At the beginning of this process, former county commissioners were ensured a certain level of involvement by OWRD, including a spirit of partnership and a desire for collaboration. OWRD has since significantly changed its approach and message with respect to partnership and collaboration. From April 2023 to May 2025, OWRD used language indicating its intent to foster collaboration and seek consensus. At RAC Meeting #7, OWRD unceremoniously rescinded its commitment to collaboration and consensus by informing the RAC members that it had been a “mistake” to set that expectation. From that point forward, the RAC was put in the role of reacting to OWRD’s proposals. This was a deeply troubling development in the RAC process and was contrary to many previous commitments OWRD had made. This is one of many commitments OWRD made, but failed to follow through.

OWRD’s attempts to form discussion groups in the fall of 2024 to increase dialogue around key concepts was mostly perfunctory and performative. Many RAC members, and members of the public, do not feel that their interests and concerns were seriously considered by OWRD, and grew increasingly disillusioned and mistrustful throughout the process. Following the public hearings in June, there were renewed concerns that OWRD was merely defending its

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Harney County Comments on Division 512 Rulemaking

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position on the Division 512 rules, had little interest in public input, and was relying exclusively on the agency's technical model.

It is worth noting that OWRD was not originally proposing regulatory reductions in most of the Harney Basin due a lack of corroborating data. It was only when OWRD began to use its technical model, and "optimized" the model without any real peer review or public input, that OWRD started to propose more drastic regulatory reductions for portions of the Harney Basin. Now, areas of the Harney Basin that could be considered "reasonably stable" are facing significant proposed reductions in groundwater use. This has been decided and defended by OWRD even with significant concern and confusion repeatedly raised by RAC members. Harney County is concerned that OWRD increasingly relied on the preferences of interest groups that reside outside of the basin, while largely dismissing the concerns and preferences of Harney County residents.

According to ORS 537.525, there is a statutory preference for "voluntary joint action by the Water Resources Commission and the ground water users concerned whenever possible" and that the "police power of the state" only be used "when such voluntary joint action is not taken or is ineffective." Harney County has been respectfully requesting voluntary joint action with OWRD for a decade. Harney County has proactively produced a place-based integrated water resources plan, cooperated in data collection and the USGS groundwater study, and has championed and secured resources at the state and federal levels to proactively address known issues. Harney County has repeatedly expressed interest in the creation of voluntary agreements and has requested support from OWRD to develop those agreements. The Harney Basin has a strong history of collaborative problem solving. The proposed Division 512 rules demonstrate clearly that OWRD is neglecting its responsibility to pursue voluntary joint action and is instead pursuing police action without making meaningful efforts to take voluntary joint action. Therefore, the proposed rules should be rescinded and reconsidered at this time. The Harney County Court has an expectation for ongoing communication, consultation, and coordination as the Division 512 rules are revised or implemented.

G. THE PROPOSED DIVISION 512 RULES ARE INCONSISTENT WITH OWRD'S REGULATORY AND STATUTORY AUTHORITY.

The proposed Division 512 rules violate many existing policies governing groundwater rights and use in Oregon, and are overly restrictive and punitive. OWRD does not have a defensible scientific and legal basis to declare most of the Harney Basin a critical groundwater area. If areas that do not meet the criteria for inclusion in a critical groundwater area are included, then the permissible total withdrawal for those areas should be set at the current authorized use or current estimated pumpage. Regulatory reductions should only occur when a median of monitored wells meet an agreed upon threshold, otherwise OWRD should prioritize voluntary agreements and voluntary action in those areas. The recommendations provided in the comments below contain an approach that Harney County believes is more consistent with Oregon law.

H. THE PROPOSED DIVISION 512 RULES WERE DEVELOPED WITHOUT MEANINGFUL PUBLIC INPUT.

Under the Administrative Procedures Act (“APA”) (ORS 183.332), OWRD is required to “seek to retain and promote the unique identity of Oregon by considering local conditions when an agency adopts policies and rules.” Harney County does not believe that OWRD is acting in accordance with this requirement. The proposed actions of OWRD will fundamentally change the nature of Harney County’s communities and decimate the local economy and associated public services and amenities. While the Notice of Rulemaking requests comments on the proposed rules’ negative economic impacts, now is not really the time for OWRD to explore those impacts. OWRD should have given full consideration to local conditions at the time it was developing the Division 512 rules, and its failure to do so is contrary to the purpose of the APA.

The APA (ORS 183.333) also requires that OWRD “seek public input to the maximum extent possible before giving notice of intent to adopt a rule.” The metric for this policy should not be how many meetings have been held, but rather whether the participants feel that their input has been solicited and meaningfully incorporated into the rulemaking process. In this process, much of the input provided by RAC members and the public has not been considered or meaningfully incorporated by OWRD. OWRD instead spent the majority of the meeting time presenting and defending their position rather than actively engaging with the public. This approach is inconsistent with the legislative intent of the APA, and is unfortunate given Harney County’s willingness and eagerness to play a meaningful role in the development of the Division 512 rules.

The APA (ORS 183.502) also gives authority to agencies to use alternative means of dispute resolution. This was requested at various times by RAC members during the development of the Division 512 rules. OWRD did not seriously consider or meaningfully respond to this request.

Ultimately, OWRD’s refusal to comply with the intent and spirit of the APA extinguished the trust and meaning of the RAC process, while also leaving the proposed Division 512 rules prone to legal challenge. It’s also worth reminding OWRD that this process sets a “precedent” for future CGWA designations. If OWRD continues to take a similar approach in future CGWA designations, then it should be expected that local governments, businesses, and community groups will become even more distrustful as the agency imposes its own will, rather than listen to the knowledge of local people. Rather than proceed with adopting the current ill-advised rules, Harney County implores OWRD to return to the RAC process, give the members a meaningful opportunity for input and collaboration, and amend the rules based on the input received.

I. THE FISCAL IMPACT STATEMENT UNDERSCORES WHY IT IS IMPORTANT TO REVISE THE PROPOSED RULES TO REDUCE ECONOMIC IMPACTS, ESPECIALLY WHERE REVISIONS ARE CALLED FOR BY THE FACTS AND DATA AVAILABLE.

The APA (ORS 183.333) requires that OWRD to work with the advisory committee to determine “whether the rule will have a fiscal impact, what the extent of that impact will be and

whether the rule will have a significant adverse impact on small businesses. If the committee indicates that the rule will have a significant adverse impact on small businesses, the agency shall seek the committee's recommendations on compliance with ORS 183.540 (Reduction of economic impact on small business)." We appreciate that OWRD listened to requests from the RAC to produce a more comprehensive fiscal impact analysis of the proposed rules. This Fiscal Impact Statement shows that the proposed rules will have significant economic impacts to Harney County. Over the duration of the rules Harney County stands to lose 320 jobs, \$18M in labor income, and \$61M in annual economic output. This is a seismic economic impact to our County with a real gross domestic product of \$352M in 2023, according to the U.S. Bureau of Economic Analysis; that is a 17% reduction in economic output. RAC members have provided numerous comments regarding how OWRD could reduce the economic impact on small businesses as is required, but these comments continue to fall on deaf ears. This level of impact, especially when there are alternatives, is completely unacceptable to Harney County. OWRD has taken an approach of decide, announce, defend, and has repeatedly demonstrated that it is not open to feedback from the Harney County Court, the RAC or the public. As a result, the people of Harney County will be those who suffer the most. Thankfully, there is a way to reduce economic impacts while still achieving the goals of the CGWA designation. If OWRD is willing to listen to Harney County, it should adopt the recommendations described below.

J. RECOMMENDED CHANGES TO THE PROPOSED DIVISION 512 RULES.

- **Groundwater reservoirs should be redrawn to account for significant hydrogeologic variability in the Harney Basin, and should meaningfully incorporate local input and knowledge.** A simplified definition of hydraulic connection was used as the sole criteria for determining the bounds of the Harney Basin groundwater reservoir. OWRD's approach does not account for different aquifer properties, geology, groundwater chemistry, recharge areas, discharge areas, or other factors when determining groundwater reservoirs. Defining the entire Harney Basin as a single groundwater reservoir is the only reason that OWRD can designate the entire basin as a critical groundwater area; otherwise, large subareas would be excludable because they do not meet the criteria for being designated as a CGWA. OWRD's oversimplified approach does not account for the variability found through the groundwater study and penalizes some parts of the Harney Basin just because of their hydraulic connection with areas with deep drawdowns. OWRD should not rely on its simplified definition of hydraulic connection, and instead should look at localized reservoir conditions to take a more-targeted approach at halting drawdown problem areas, without penalizing sustainable groundwater uses in other areas.
- **Each of the subareas should be considered their own "groundwater reservoir," and CGWAs designated accordingly.** As described above, each subarea has distinct properties (i.e., geology, recharge areas, discharge areas, chemistry, etc.) and should be considered their own groundwater reservoirs for management purposes. By allowing each subarea to be its own reservoir, the parts of the Harney Basin without problematic data can achieve stability and avoid a CGWA designation, or have a designation lifted. A

process and specific criteria for lifting the Critical Groundwater Area designation should be included in any rules which are adopted.

- **The Lower Blitzen-Voltage and Upper Blitzen subareas have not met the criteria to be designated Critical Groundwater Areas and should be excluded from the Critical Groundwater Area designation, or the permissible total withdrawal should be set at authorized amounts or current estimated pumpage.** No supporting evidence exists to include these areas in the critical groundwater area boundary. These subareas currently meet the definition of “reasonably stable.” These subareas are not overdrawn or about to be overdrawn and do not have any wells that have declined excessively or are excessively declining. Under existing statute and rules, hydraulic connection to an area of decline is not a criteria that can be used to designate a critical groundwater area. These subareas should be excluded from the critical groundwater area boundary and managed via voluntary agreements. If this area is included, the permissible total withdrawal should be set at the current authorized use or the current estimated pumpage.
- **The Silver Creek subarea has not met the criteria to be designated a critical groundwater area and should be excluded from the critical groundwater area or the permissible total withdrawal should be set at authorized amounts or current estimated pumpage.** No supporting evidence exists to include this area in the critical groundwater area boundary. This subarea currently meets the definition of “reasonably stable.” If groundwater use is controlled in Weaver Springs, as proposed, the Silver Creek area is not overdrawn or about to be overdrawn and does not have any wells that have declined excessively or are excessively declining. Under existing statute and rules, hydraulic connection to an area of decline is not a criteria that can be used to designate a critical groundwater area. This subarea should be excluded from the critical groundwater area boundary and managed via voluntary agreements. If this area is included, the permissible total withdrawal should be set at the current authorized use or the current estimated pumpage.
- **Portions of the Silvies subarea (those areas with the highest recharge from the Silvies River) have not met the criteria to be designated a critical groundwater area and should be excluded from the critical groundwater area or permissible total withdrawal should be set at authorized amounts or current estimated pumpage.** No supporting evidence exists to include these areas in the critical groundwater area boundary. This subarea currently meets the definition of “reasonably stable.” This subarea is in a region that is overdrawn or about to be overdrawn, but does not have any wells that have declined excessively or are excessively declining. These subareas should be excluded from the critical groundwater area boundary and managed via voluntary agreements. If this area is included, the permissible total withdrawal should be set at the current authorized use or the current estimated pumpage.
- **Weaver Springs has clearly met the criteria for a critical groundwater area.** It makes sense that OWRD focus regulatory reductions on the portion of the Harney Basin where criteria for a critical groundwater area designation have definitively been reached. This

area has been overdeveloped and has been allowed to decline to an unreasonable degree and is not “reasonably stable.” The declines in Weaver Springs are having negative impacts on domestic wells and on other Subareas. Therefore, it makes sense to designate Weaver Springs as a CGWA, while excluding those other areas where the CGWA criteria are not met.

- **Thresholds for regulatory action should be set in the Northeast-Crane and Dog Mountain subareas.** The Northeast-Crane subarea is overdrawn or about to be overdrawn and while there are some wells that have declined excessively or are excessively declining, there are large portions of the Northeast-Crane subarea that currently meet OWRD’s definition of “reasonably stable.” OWRD should set a threshold to take regulatory action in the Northeast-Crane and Dog Mountain subareas once a median of the monitored wells meet or exceed the threshold of 25 feet of decline or exceed the 0.6 ft/year of decline threshold (the standards set in OAR 690-008). The permissible total withdrawal should be set at the amount that would stabilize groundwater levels at or near this amount. No regulatory reductions should occur in this area prior to these thresholds being met.
- **OWRD should review existing policies to ensure equitable application across the state.** It is fundamentally unfair for OWRD to be curtailing groundwater use in places where conditions are “reasonably stable,” and where, if these areas were located nearly anywhere else in Oregon, OWRD might still be issuing groundwater rights. For wells in the Silver Creek, Lower Blitzen-Voltage and Silvies subareas, declines are minor and groundwater levels in some wells have risen above reference levels set forth in the permit conditions. Furthermore, representatives from OWRD were telling groundwater users in these parts of the Harney Basin as recently as a year ago that they were not seeing problems in these areas. Groundwater users had been led to believe over most of the past decade that these areas were not in jeopardy and in fact, additional development may be possible. OWRD has even approved new water rights in these areas and approved transfers into these areas. Suddenly curbing groundwater use in these areas would be inequitable, and sets a concerning precedent for the rest of the state.
- **There is sufficient information to close the Harney Basin to new appropriations, limit groundwater pumpage to historic beneficial use, and curtail groundwater in areas that have met the criteria for a critical groundwater area designation.** Although not all parts of the Harney Basin meet the criteria to be included in a critical groundwater area, there is sufficient information to support proactive groundwater management. The entire Harney Basin should be closed to additional appropriations to protect existing uses and users, groundwater use should be limited to historic beneficial use, OWRD should proceed with cancellation of unused water rights, unauthorized groundwater use should be stopped, and groundwater use should be reduced in areas with significant declines. The proposed reductions in some subareas are not supported with substantial site-specific evidence.

- **Consult with cities to determine the appropriate amount of water allocated for each 6-year check-in period.** City officials have contacted Harney County Court expressing concern with the lack of effective outreach to--and coordination with--the cities on the proposed rules. OWRD should make a concerted effort to coordinate with city officials and administrators while revising the draft rules to ensure that the rules account for the needs and interests of cities.
- **Provide a pathway for offset water for new development and municipal/quasi-municipal use.** The RAC has repeatedly requested that OWRD develop a pathway in the rules to allow for new development of municipal/quasi-municipal purposes if offset water can be secured. Despite these repeated requests, OWRD has still not proposed language to this effect. This is of critical importance to the Harney County community as it continues to look for opportunities to maintain and grow our economy.
- **Exempt recreational and commercial geothermal use.** The Crystal Crane Hotsprings is an important feature of the Harney Basin. These hot springs have grown considerably in recent years and have planned significant expansions with financial support from the state. As it stands, the current rules could negatively affect their ability to expand. Geothermal use for recreational and commercial purposes should be exempted from the rules. This is an area where Harney County supports additional economic development and believes that it can occur without significantly altering the groundwater budget in the basin.

IV. CONCLUSION

The proposed Division 10 report and Division 512 rules do not properly utilize best available science and sets OWRD up for unnecessary and potentially protracted legal battles which might hinder the agency's ability to effectively address known areas of concern in a timely manner. OWRD should consider the significant policy implications of the underlying logic and assumptions being proposed through this rule making, and take measures to develop a clearer and more robust process for defining groundwater reservoirs and determining when particular thresholds for inclusion in a critical groundwater area have been met. The current approach is oversimplified, irresponsible, and ultimately unfair to the people of Harney County. Harney County supports the goal of sustainable groundwater management, but do not support the technical basis for regulatory action proposed by OWRD.

In conclusion, the recommendations of the Harney County Court adhere to existing Oregon laws and policies and would actually reduce the economic impact as required by law. Harney County stands ready to work towards sustainable groundwater management alongside OWRD and groundwater users as required by law so that OWRD can focus its regulatory and legal resources on the highest and most pressing needs in the state. Harney County urges OWRD not to adopt the proposed Division 512 rules at this time, and return to the RAC process to engage in meaningful collaboration on the needs of the state, local communities, and businesses.

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DATED this 6th day of August, 2025.

Sincerely,

A handwritten signature in black ink, appearing to read "DMC", with a horizontal line extending to the right.

Dominic M. Carollo
Nolan G. Smith

County Counsel for Harney County

NGS/klh
Cc: client

Public Comment: Proposed Harney Basin Groundwater Plan

Submitted 8/13/25

Rob Sharp (rsharp80@icloud.com)

Subarea Boundaries:

My wells are located on the western boundary of the NE Crane subarea (T23S, 32E, Sec 3). The delineation of this boundary appears to be arbitrarily set based upon the presence of ground water irrigation on the western edge of the NE Crane subarea (arbitrary line to “group” our portion with the broader subarea). In reality, we should be included in the Silvies subarea as all of our surface runoff comes from drainages within the Silvies subarea (primarily Soldier Creek and Coffee Pot). The western boundary of NE Crane should end at South Harney and Rattlesnake Creek roads and not extend west beyond this.

Curtailments should be identified in this plan:

The department should conduct analysis and identify which water rights will be curtailed under the first phase of this plan. This data already exists. If specific rights can’t be identified, the department should associate what priority dates will be curtailed first. This would allow irrigators to make hard business decision planning now and not wait until 2028.

Ability for limited irrigation:

When curtailments end irrigation, the previously farmed acres will transition to noxious weeds and undesirable vegetation. Instead of complete shut-off of water, the department should identify limited periodic irrigation periods where operators could irrigate to establish or maintain beneficial vegetation. For example, if an operator was able to irrigate to establish a forage species such as crested wheat, these previously farmed acres could still be of value for livestock/wildlife grazing. I’m thinking like very brief 2-to-4-week periods in the springtime once every 3 or 4 years. Utilizing this very limited irrigation water, could have significant benefits compared to fallow ground. Additionally, maintaining desired vegetation would drastically reduce the wildfire threat that comes with mustard, cheatgrass, and tumble weeds.

Irrigation on Dept of State Lands:

Water rights should never have been allowed to be obtained on Oregon Dept of State lands. If curtailments are necessary, they should begin on rights located on state lands, regardless of priority dates. I can not comprehend the situation where the private

landowner across the fence is required to stop irrigation, when it continues on state owned parcels.



7/22/2025

Kelly Mainz – Rulemaking Coordinator
Oregon Water Resources Department
725 Summer St. N.E. Suite A
Salem, OR 97301-1271

**Subject: Harney County Farm Bureau and Harney County Stockgrowers Comments on
Proposed Division 512 Rules – Sign-on Letter**

Dear Mr. Mainz,

Please accept these comments on behalf of the below signed individuals. These individuals represent many different interests and geographies but share the primary goal of maintaining the agricultural way of life in Harney County while sustainably managing groundwater for all uses.

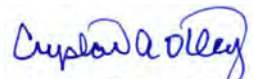
- **The Harney Basin is not one groundwater reservoir.** The USGS groundwater study states that the Harney Basin is one interconnected groundwater flow system, but it does not support the Department's claim that the Harney Basin is a single groundwater reservoir. The term groundwater reservoir is a policy term not a scientific term and the Department has discretion when delineating groundwater reservoirs. As stated by the Department at the information sessions and public hearings in June, the Harney Basin is made up of distinct hydrostratigraphic units distinguished by underlying geology, different areas of recharge, different responses to groundwater use, groundwater quality and chemistry, among other factors. The Department should recognize these as different groundwater reservoirs and account for variable groundwater conditions in the rules.
- **The Water Resources Department overallocated groundwater resources, but groundwater resources are not overdrawn.** At the information sessions and public hearings for the Division 512 rules the Department stated that, by its own definition, the Harney Basin does not meet the definition of "overdrawn" if groundwater use is limited to existing estimated pumpage. In fact, if pumping was limited to existing amounts, there is still +28,200 acre feet before the Harney basin is technically overdrawn. The Northern Region, if treated separately, is the most overallocated, but is only overdeveloped by -2,700 afy. The Western Region is overallocated, but is not overdeveloped (recharge exceeds pumpage by +4,500 afy). The Southern Region is neither overallocated nor overdeveloped (recharge exceeds pumpage by +26,400).

- **Conditions throughout most of the basin are reasonably stable.** The Department has an existing definition for reasonably stable (OAR 690-008-0001) that should be adhered to. The majority of the Harney basin currently meets the definition for reasonably stable conditions. Areas where there are reasonably stable groundwater levels should be excluded from a critical groundwater area designation, including the Silver Creek subarea, Lower Blitzen-Voltage Subarea, Upper Blitzen Subarea, and Silvies Subarea. Hydraulic connectivity to problem areas should not be the sole criteria for designation of a critical groundwater area.
- **Only areas that meet the definition of a critical groundwater area should be designated and regulated.** Only the Weaver Springs subarea, Dog Mountain subarea, and portions of the Northeast-Crane subarea have wells that meet the criteria for a critical groundwater area (wells that are declining excessively or have excessively declined). No other subareas have met the criteria and are “reasonably stable” by the Department’s own definition in OAR 690-008-0001.
- **Permissible total withdrawals should not be less than the estimated recharge.** Within the Umatilla basin, another other critical groundwater area in the state, it is the Commission’s objective to “achieve a balance between groundwater pumpage and natural recharge in designated critical groundwater areas.” The Commission should adopt this same objective for the Harney Basin and set the permissible total withdrawal as the amount of recharge for the basin, consistent with existing statutes and rules. Permissible total withdrawals should not be set at an amount less than the estimated recharge until the Commission adopts different statewide policies.
- **Voluntary joint action and conservation should be prioritized.** Under state law, the Commission is supposed to first control the use of groundwater under voluntary joint action with groundwater users and only employ the “the police power of the state” if voluntary joint action is not taken or is ineffective. For parts of the basin that are reasonably stable and have not reached critical conditions, the Commission should prioritize activities that voluntarily decrease water use and increase conservation and efficient use of water and should partner with groundwater users to sustainably manage the resource rather than resorting to regulation. This could be accomplished through a basin-wide conservation plan and voluntary agreements.
- **Economic impacts could be greatly reduced through more targeted action.** The Department was not originally proposing to regulate groundwater use in portions of the basin where groundwater levels are reasonably stable and for nearly a decade had publicly communicated that there were not problems in parts of the basin. The draft rules now propose regulations for the entire Harney Basin totaling a reduction in use of 35%, with reductions of up to 39% in the Lower Blitzen-Voltage subarea and 28% in the Silver Creek Subarea where groundwater levels are not declining. The Department should not be regulating groundwater use in areas where groundwater is reasonably stable. By focusing regulatory action only on those areas that meet or exceed the standards for a critical groundwater area, the Department would limit the economic impact to small, family owned and operated businesses that are so critical to the social and economic fabric of Harney County.

The Department is proposing a more restrictive standard in the Harney Basin than anywhere else in the State of Oregon. These will have a devastating impact on families and farms and the entire Harney County economy and community. All other basins in Oregon are held to the existing definition of reasonably stable and are not expected to achieve a rate of groundwater level change

of 0 feet per year. If the Department effectively applied its current policies, the majority of the Harney basin would be considered reasonably stable and only portions of the basin would be managed as critical areas. The Department lacks the technical and legal basis for such sweeping and devastating regulatory reductions in the Harney Basin. The Department has not done enough to ensure consistent and equitable application of existing policies and to take actions that minimize economic impacts. The current rules are excessive and unsupported by data and policy. The Harney Basin should not be held to a drastically different standard than the rest of the state. We urge the State to reconsider its approach to the Division 512 rules and focus on effective application of its existing policies.

Thank you for your time!


Harney County Farm Bureau


Harney County Stockgrowers Association

Signed by:

First and Last Name	Representing/Affiliation
Barbara P. P. P. P.	—
ANN MARIE BECKER	
Hesley Richman	HC Irrigator
Patty Doroh	
Matthew Briggs	HC Irrigator
Larry Otley	HC Irrigator
Luan H. P. P.	HC Irrigator/Rancher
Martha Corrigan	Harney County Irrigator/Rancher
Chris Gregg	HC Irrigator/Rancher
Shane L. Otley	HC Irrigator/Rancher/OFB/HCFB
Will B. P.	Harney County Stockgrowers
Donna D. Songhose	HC Irrigator/Rancher
R. C. Bah	HC Irrigator/Purinton
Jerry Raymond	HC Irrigator

Signed by:

First and Last Name	Representing/Affiliation
_____	Self
Farmstead Blith	Self
Scott Conner	Self
_____	Self
Mike Wright	Self
James de Penas	Self -
My Simpson	Self
Jeffrey Perez	Self
Brandie Wright	Self
Hunter Britt	Self
_____	SELF
Sam Hargis	WhiteHartford Ranch Inc
_____	Self
Mike Davis	Self
Melinda Davis	Davis Ranches & Farms

Signed by:

First and Last Name	Representing/Affiliation
Beau Carlton	self
Jeff Ballins	Robbins Equipment - Beers Inc.

Signed by:

First and Last Name	Representing/Affiliation
R. Anthinson	myself / TKL
Th. J. J. J.	My Self / Local Citizen
Heather J. J.	myself / Jackalope Livestock
John M. J.	myself / Jackalope Livestock
G. J. J.	cattle Producer
Lee Thumberg	Beef Producer
David Meissner	My self
Cecilia G. J.	Farm / Ranch
Wendell C. Mooney	Self / Ranch Goats
Kathryn Joyce	Self
Sluggs	Self / Local Business Owner
Amanda Stevens	Self - Ranch
Susan Ohlund	Self - Ranch
MATT STEVENS	RANCH OWNER
Annita Mumford	
Polly Zander	self

MEINZ Kelly A * WRD

From: Stephanie Bowen <sbowen@hec.coop>
Sent: Wednesday, August 13, 2025 2:32 PM
To: WRD_DL_rule-coordinator
Cc: Fred Flippence
Subject: HEC Division 512 Rules Public Comments Submitted
Attachments: Harney Electric Cooperative Public Comments_FINAL_08.13.25.pdf

Some people who received this message don't often get email from sbowen@hec.coop. [Learn why this is important](#)

Please consider these public comments as submitted from Harney Electric Cooperative.

Respectfully,



Stephanie Bowen

Office Manager

Harney Electric Cooperative, Inc.

PO Box 587 – 277 Lottery Lane

Hines, OR 97738

email: sbowen@hec.coop

phone: 541-573-2061

web: www.hec.coop

August 5, 2025

**Kelly Mainz – Rulemaking Coordinator
Oregon Water Resources Department
725 Summer St. N.E. Suite A
Salem, OR 97301-1271**

Subject: Harney Electric Cooperative Comments on Proposed Division 512 Rules

Dear Mr. Mainz,

Please accept these comments on behalf of Harney Electric Cooperative, Inc. (HEC). HEC currently has approximately 700 members in southeastern Oregon (~1230 in Oregon and Nevada total) and is an electrical distribution member-owned cooperative providing electricity to a large geographical portion of Harney County. As is recognized in the Integrated Water Resources Strategy, water and energy are closely connected.

Harney Electric's Dependence on Irrigation

Kilowatt hour (kwh) sales to irrigation services make up the bulk of the co-op's electricity revenue, constituting between 70-80% of total annual sales. HEC revenue from power sales in 2024 was \$14.6 million and \$10 million was attributed to irrigation. The fact that HEC's territory has no franchised townships (the town of Burns is served by Oregon Trail Electrical Cooperative) translates to HEC as one of the top two most irrigation dependent electrical cooperatives in the nation. It should also be noted that much of the co-op's residential and small commercial sales are irrigation-adjacent; i.e. the irrigator's house and shop that is part of the farmland that is being irrigated. There is no industrial rate class. Our largest "commercial" customer is the Crane Schools. Suffice it to say that the cooperative is completely dependent upon irrigation pumpage; the co-op cannot fulfill its mission to provide safe, reliable and affordable power to its members without irrigation.

The cooperative runs in the red from October to April and is only able to break even during seasonal irrigation load which supplies enough revenue to make up for Oct-April losses. Seasonal irrigation load subsidizes the price of power for all members by distributing the fixed costs of the cooperative over the increase in seasonal kilowatt hour sales. Harney Electric doesn't even bother with cost of service studies because the co-op would never be able to charge a residential user the basic delivery charge that is associated with maintaining a residential service in a 20,000 square mile territory. Each service (4022 total at seasonal peak) requires an average of $\frac{3}{4}$ mile of line, and each member (1230 total in Oregon and Nevada) an average of 2.5 miles of line. The proposed regulatory reductions will have a direct effect on our operations through the reduction of kilowatt hour sales from irrigation and will result in a dramatic increase in rates to all the co-op's rate classes.

Harney Electric's Restraints and Cost Trends

HEC benefits from low-cost "Tier 1" power from Bonneville, which is one of the benefits of being a public power provider in the Pacific Northwest with an incredible resource like the Columbia River Power System. Harney Electric also has "Tier 2" in its power supply mix which means the co-op is much more exposed to power purchases at market price. In the last decade Tier 2 power has

increased dramatically. Bonneville power contracts are not variable from year to year and HEC will sign a twenty-year contract in 2028 whereby the terms of our Tier 2 power have largely been determined for us based on our current power demand. What that means is that we will be locked into a much more expensive power supply mix even if our demand decreases by regulatory curtailment. Bonneville Power Administration is no longer the low-cost power generation source it once was and HEC has very little ability to negotiate new terms when and if demand is reduced by future OWRD action.

This past year the cost from Bonneville Power Association increased 24%, which are costs we must pass along as a non-profit at-cost electrical distribution cooperative. Simultaneously, we are losing federal and state support for energy assistance to low-income homes through the Low-Income Home Energy Assistance Program (LIHEAP). While HEC operates very effectively and efficiently with limited staff to minimize costs to our members, the co-op incurs fixed costs to maintain and operate thousands of miles of infrastructure which cannot be scaled down or reduced through cost-cutting measures. We cannot proportionally cut staff if consumption is reduced without sacrificing reliability and safety.

Once the Division 512 plan is fully implemented we expect that HEC will see a reduction in ~\$1.5 million in annual revenue. As rates are only meant to cover fixed costs, the reduction of revenue means rates will increase across the board. With only 1230 members the math is easy to show how the cost increase will negatively impact the average customer and especially our most vulnerable residents. The Department has not accounted for the very real human costs associated with its proposed curtailment. In 2028 when the largest curtailment is scheduled, we predict that some of our low and fixed-income households will face bills that are twice as high as current levels. This would be the adverse consequences of a regulatory framework that we consider to be too dependent upon curtailment to stabilize groundwater.

Furthermore, if a service is inactive for five years then by loan covenant with the Rural Utilities Service (USDA) we are required to dismantle that infrastructure, another cost born by the remaining members. If irrigators lose the ability to pump water, we believe it will become even harder for domestic and livestock producers to settle in Harney County in the future as the line that may have brought them power will no longer be there.

Harney Electric's History with OWRD

It is true that fifty years ago, irrigators were not pumping what they are pumping today, and there were fewer services and less build-out. HEC experienced a period of rapidly increasing construction and growth from 2000-2014 as OWRD had issued permits at a breakneck pace. HEC board of directors met with now Director Gall and OWRD staff to better understand the implications of the Department's intent going forward. The co-op was told to expect no regulatory reductions in the areas where we had extended service and that existing permits would be honored. Based on that reassurance and the advice of the Department, we felt comfortable proceeding with new build outs to irrigators. The costs of those build outs are largely recaptured through usage over time and not required to be paid upfront. Not only does HEC rely on irrigators to subsidize all other electricity users, we also count on pumpage to pay for the cost of building a service. Up until quite recently, OWRD seemed to be communicating that existing pumpage was not a problem and that our continuance to invest in infrastructure would not result in stranded assets. We are dismayed to

hear that the Department is now proposing drastic reductions in portions of the basin where infrastructure has been set up and is required to be patrolled and maintained. Again, without pumpage and with the decommissioning of idle infrastructure we would expect significant increases in costs that we would have to pass along to our members.

The co-op collects data that can identify patterns in groundwater use through kwh usage at each of our substations that serve different portions of the basin. Groundwater pumpage varies drastically depending on temperature and precipitation levels. For instance, if we have a wet and cool spring and an early fall cool-down, the co-op could experience consumption decreases by up to 27% as it did from 2022 to 2023. It is not true that irrigators are simply pumping more and more every year; they are responding and adapting to changing weather conditions. When compared to drought conditions known in our area, we can attribute some of the pumpage increases to unfavorable temperature and precipitation levels from 2012-2022. Our data shows that pumpage has been significantly lower in 2023 through 2025 based on cooler and wetter weather patterns.

This background is important to address the groundwater studies the Department has released to the public, and their use of what we consider “shock” language in publications claiming the following:

“Groundwater pumpage for irrigation in the Harney Basin increased substantially during 1991-2018 from 51,000 acre-ft/yr in 1991 to 145,000 acre-ft/yr during 2017-18.” *SIR 2021-5103 page 35.*

This statement is made after the disclaimer that groundwater-use measurements and data reporting for irrigation are sparse and a lengthy explanation as to how groundwater pumpage for irrigation was calculated from remotely sensed measurements. This 284% increase is not supported by our kwh data. We have requested clarity in the way this statement was made and proliferated and have on multiple occasions invited the Department to meet with our staff and board to look at our compiled (not individual member) data. Oregon kwh irrigation sales vary wildly depending on weather trends and the yearly totals tell a different story when you compare 2023 irrigation kwh's sold as 154% greater than in 1992. It is true that kwh data supports that pumpage has increased in the Harney Basin, but 1991 was a low irrigation year and 2018 was a record-breaking irrigation year so the study parameters seem to be skewing the results of the study. The Department has never taken us up on the offer to review our data and seems reluctant to engage with local partners who may have data and information that does not perfectly align with the Department's own understanding.

Our community has known for a decade that Weaver Springs is a problem and yet the Department did not take immediate action that was enforceable under the current regulations. Now, the Department is making the entire basin responsible for the overdevelopment and groundwater level declines in that area. We have reason to believe that Weaver Springs is in many ways resolving itself. The Dog Mountain substation shows that over the last ten years the peak has been reduced from 7 MWh to 4 MWh, which we estimate to encompass about 40 100hp pumps (standard size for a 120-acre pivot). It appears that Weaver Springs has surpassed the economic pumping level for many producers who cannot access the same quantity of water at reasonable depths. The Department is required by ORS 537.525 to prevent or control the depletion of groundwater supplies below economic levels and has a definition of “Economic Pumping Level” in OAR 690-008-0001. While action needs to be taken to prevent this in other areas of the basin, many areas in the basin

have retained “reasonably stable groundwater” as defined in OAR 690-008-001(9) and do not need to be included with the curtailment proposals. We also believe the Department already has the tools on the books to enforce groundwater stabilization without the proposed division 512 rules.

Harney Electric’s Concern for Community

HEC demonstrates democratic member control through management by a seven-person member-elected board of directors. Additionally, one of the seven principles that make up the framework of an electrical distribution cooperative is concern for the communities served. This commitment drives many of our strategic and operational decisions every day and is displayed through our participation in grant-making for organizations in our territory and other donations to worthwhile local causes. It is also apparent from the ongoing philanthropical pursuits by our leadership:

- High Desert Partnership
- Symmetry Care Board President
- Harney County Library Foundation
- Harney District Hospital Finance Committee
- Harney County Opportunity Teams (Mainstreet Projects)
- Oregon Community Foundation
- Ford Family Foundation
- Lions Club & Scholarship Committee

The cooperative’s comments here are presented not as an attack on the Department, but are necessary to preserve our ongoing mission to serve our members. Our continuous involvement with the community means that we understand what collaboration is meant to look like and what it can accomplish. The Department has assured us for nearly a decade that collaboration was on the table and a priority would be working in partnership to sustainably manage our resources. Our community has worked over the past decade to develop an integrated water management plan, which we feel was abandoned in the proposed 512 rules. The Department has decided to fully pursue a regulatory approach rather than a community partnership.

The Department has not fully accounted for the very real and immediate economic impact the proposed rules would have on local businesses. The proposed reductions will threaten public welfare, health and safety. As mentioned before, it is the most vulnerable populations that are increasingly unable to afford the costs associated with heating and cooling their homes. We are also concerned that the consequences will be much greater and much more damaging than just making electricity less affordable. Smaller family farms and multigenerational agricultural families may falter and/or sell out as they lose bits of their investments to regulation. Many agricultural producers already operate on the margins and require access to credit in order to sustain their operations. We are hearing from lending institutions that they are becoming more cautious in Harney County because of the water issues. As you lose small farms and families move away, you lose the vitality of your communities.

The basin is overallocated (more paper water rights than there is water available) but not overdrawn or overdeveloped (total pumpage is less than the recharge). Cancelling unused water rights and limiting groundwater use to what is currently being pumped would not significantly affect HEC since we have already absorbed the costs associated with providing electricity to these properties.

HEC also services Nevada and this is the approach that Nevada took when they were facing similar issues. Nevada stopped issuing permits and limited pumpage to current levels which has minimal economic impacts. We have raised this example at multiple meetings but the Department does not seem interested in learning from other models. We urge the Department and Commission to examine other models that could limit the economic impacts as required by ORS 183.540.

The Department could significantly reduce the economic impact to Harney County citizens by limiting pumpage to current levels and pursuing voluntary approaches in areas where groundwater levels are reasonably stable rather than proceeding with regulatory reductions. A more targeted approach in problem areas coupled with voluntary approaches in other areas would allow HEC to work in partnership with the state and local groundwater users on a sustainable path forward.

Providing electricity for a very low density, frontier community is extremely challenging but rewarding for our staff and leadership. We will continue to bring safe, reliable and affordable power to our members for as long as we are able. It is difficult to predict, however, the ripple effects of people losing their livelihood and their operations and how that will ultimately affect HEC. The Department's actions are creating an atmosphere of fear and uncertainty for businesses in the community. We urge the Department to take a step back from the broadly applied 512 Division Rules and prioritize collaboration with Harney County stakeholders as the approach going forward.

A handwritten signature in blue ink, appearing to read "Fred Flippence".

Fred Flippence, General Manager
Harney Electric Cooperative, Inc.



August 13, 2025

Kelly Mainz – Rulemaking Coordinator
Oregon Water Resources Department
725 Summer St. N.E. Suite A
Salem, OR 97301-1271

Subject: Comments on Division 512 Rules

Dear Mr. Mainz,

On behalf of the High Desert Partnership, we would like to express continued support for meaningful public involvement in an adaptive management approach for groundwater in the Harney Basin. These comments reflect our organization's focus and dedication to a process of how rules and the place-based water plan can be implemented together with diverse voices at the table. These voices at the table will need to be organizations and agencies who can help our communities through economic and social transitions and need to be much broader than just about water. Our community is dedicated to sustainable groundwater management that balances social, economic, and environmental needs and considerations. As an organization we successfully lead collaborative groups through understanding and navigating complex tradeoffs and finding solutions that are supported by different interests who might otherwise be at odds. We currently convene and support 6 long standing collaboratives in our county.

We appreciated the Department's responsiveness during the Division 512 rulemaking process in 2015-2016, especially as it pertained to public involvement in the groundwater study. That process resulted in a higher level of understanding of the complex hydrologic conditions in the basin. Many core findings of the study are well understood and supported locally and provide a common technical basis for cooperative efforts because of the Groundwater Study Advisory Committee.

We would like to request inclusion of similar language in the updated Division 512 rules that continues this spirit of partnership (see below). An adaptive management approach with community involvement has been consistently supported by members of the RAC and we are dedicated to its long-term success. We are especially committed to working with other partners, including the Harney County Watershed Council, to ensure that a groundwater collaborative is inclusive, transparent, well resourced, and effective as we weave together regulatory and voluntary approaches and transition to implementation of our community based integrated water resources plan. Success of any collaborative and adaptive approach will be largely dependent upon the Department's active participation, leadership, and continued provision of technical information and assistance.



Please include the following language in the final Division 512 rules:

The Department shall support creation and ongoing convenings of a local Groundwater Management Collaborative by attending meetings and providing planning and technical assistance as authorities and capacity allows. The Department will work with the Collaborative to encourage the collection and use of hydrogeologic data, implementation of water conservation measures, and implementation of actions contained in the state-recognized place-based integrated water resources plan. To support the work of the Collaborative, the Department shall provide annual reports describing groundwater use and groundwater trends and work with the Collaborative to ensure ongoing trust in data that supports adaptive management decisions. The Collaborative can assist with monitoring, tracking, and supporting the effectiveness of both voluntary and regulatory actions.

We are attaching the proposal previously submitted to the Department for their consideration of a potential process for this critical ongoing work and look forward to additional conversations.

Sincerely,

Brenda Smith

Brenda Smith Ph.D., Executive Director

HARTT Laura A * WRD

From: Brenda Smith <director@highdesertpartnership.org>
Sent: Tuesday, August 12, 2025 7:53 PM
To: WRD_DL_rule-coordinator
Subject: Harney County Div 512 Rules Public Comment Submission
Attachments: HDP Div 512 Public Comment Submission 8-12-2025 w attach.pdf

Dear Kelly,
Attached you will find a public comment document that I am submitting on behalf of High Desert Partnership.
Thank you,
Brenda

--
-

Brenda Smith, Ph.D.
Executive Director
director@highdesertpartnership.org
541 589-4220
PO Box 252 Burns, OR 97720



Dear Mr. Mainz,

My name is Hilda Allison of Allison LLC dba The Truck Shop and I am a small business owner in Harney County that will be affected by the Division 512 rules. As a local diesel mechanics shop we service all our ranchers, farmers and other businesses that will be directly effected by this Rule.

My business relies strongly on the ranching and farming industry. We will be significantly affected by reductions in groundwater use that will result in fewer agricultural operations in Harney County and therefore fewer customers for our business. Cuts to economic output and property tax revenue will also affect our community and economy. These rules will affect our employees, our family, our friends, and our neighbors. The Oregon Water Resources Department never consulted small business owners that will be impacted by the rules and has not sufficiently considered ways to reduce economic impacts as it is required to do under ORS 183.333, ORS 183.336, and ORS 183.540.

These rules will have a significant adverse impact on small businesses. Our interests were not represented on the Rulemaking Advisory Committee. We request that the Oregon Water Resources Department convene a fiscal impact advisory committee to specifically advise on how to reduce the economic impacts to small businesses and follow the advice offered by the Committee. The proposed rules will have a detrimental impact on the public welfare, health, and safety that have not been fully examined or quantified. Alternative approaches have not been explored or offered.

The economic analysis performed by EcoNorthwest states that Harney County's economy is reliant on agriculture and is also isolated from other economic opportunities.

Today, agriculture represents 22 percent of total economic output. The percent reduction in groundwater use, correlates strongly to a similar percent reduction in the value of agricultural production and total economic output.

☐ Today, agriculture supports about 1,020 local jobs and generates \$186 million in

total economic activity each year.

☐ If the proposed rules are fully implemented, between 160 - 320 of those jobs could be lost and annual economic activity could shrink by \$22 - \$61 million (in 2024 dollars) at the end of 30 years.

☐ Jobs would be lost not only on farms and ranches, but also in businesses that supply goods and services to them (like equipment repair, feed suppliers, and fuel providers).

☐ Even local shops, grocery stores, and restaurants could feel the impact as families spend less because of reduced employment and labor income.

Lower agricultural production means land is worth less for property tax purposes, especially land that loses access to irrigation water.

☐ Today, the affected land's assessed value across Harney County is worth about \$57 million.

☐ If the proposed rules are fully implemented, the land's assessed value could drop to \$45 million.

☐ That would mean \$146,000 less in yearly property tax revenue for Harney County—a 1.3 percent decrease at the end of 30 years.

☐ Local schools could lose the most (about \$66,000 less in yearly revenue), followed by the county's general fund (\$55,000) and hospitals (\$24,000).

This level of impact is unacceptable. The Department should focus regulatory action only on problem areas and use voluntary approaches and incentives in all other areas to voluntarily reduce groundwater use. This is a more sensible approach that would minimize economic impacts to agricultural operations, small businesses, and the broader community.

Signed,

A handwritten signature in black ink, appearing to read "Hilda Alison", with a long horizontal flourish extending to the right.

-----Original Message-----

From: Jacob Davis <jacobdavis1219@gmail.com>

Sent: Thursday, June 12, 2025 9:34 AM

To: WRD_DL_Director <WRD_DL_director@water.oregon.gov>; FREDLUND Cassidy A * WRD <cassidy.a.fredlund@water.oregon.gov>; LANE Mindy J * WRD <mindy.j.lane@water.oregon.gov>

Subject: Jacob Davis water users, lower Blitzen

[Some people who received this message don't often get email from jacobdavis1219@gmail.com. Learn why this is important at <https://aka.ms/LearnAboutSenderIdentification>]

My name is Jacob Davis I'm a third generation farmer in the Lower Blitzen ,my grandpa first start developing here in the 50s my dad was born and raised here and start developing and when I was old enough and went out on my own I start developing so I can have something for my wife and my four children of our own. They're wanting us to Reduce our water in the lower Donner Blitzen. We have had no decline in any of our wells were actually up a foot, I don't think we need any more new development so we can protect what we have. The Department let investors come into our backyard and put in ten new pivots in the last two years they were able to transfer from the weaver spring sub area, which had a major problem, into the lower donor Blitzen that's 26 miles away. I don't agree with that . Some of the Water Right they developed when they bought the property and started developing with in the last year had never been developed. It was in Sagebrush but yet they were able to keep that water right Even though it's sat idle for 20+ years , when I had five years to develop my Water Right I don't think that's fair. I don't agree with someone getting to transfer water rights and keeping the original priority date. It should've started over from the transfer date. I don't agree with the state telling me one of my water rights was good and it was safe to buy and now it looks like it's going to be canceled. Most of us farmers here local are generational or are here to stay and raise families. My operation right here I have everything mortgaged as irrigate usable acres ,I cannot afford to be cut back very much or I will lose it all. I don't believe this is one Reservoir that irrigates everything where I live right now my water comes from the Steens Mountain where I grew up 12 miles down the road that waterflow came from RiddleMountain

Sent from my iPad

August 13, 2025

**Kelly Mainz – Rulemaking Coordinator
Oregon Water Resources Department
725 Summer St. N.E. Suite A
Salem, OR 97301-1271**

Subject: Comments on Division 512 Rules

Dear Mr. Mainz,

My name is Jacob Davis and I am a third generation farmer and business owner in the proposed Lower Blitzen-Volage subarea where we irrigate 320 acres with groundwater. I have been tracking the rulemaking process for the last two years and have had a difficult time understanding how the Department arrived at their final proposal. My grandpa moved to the basin in 1955 and drilled one of the first irrigation wells in the Lower Donner Und Blitzen. My dad has been farming for nearly 70 years. We have a lot of knowledge handed down from the old timers that is valuable and should be used by scientists to help understand and manage our basin. As currently proposed over the next 30 years me and my wife and my dad and mom are all going to lose everything we have. We will lose our businesses, our jobs, our homes, our community, our sense of place. We want to be here. We want to farm. This is our life and our livelihood. We are good stewards of our land and water resources. We have followed all of the rules and we work hard every day to right by our neighbors and our community.

I would first like to talk about the proposed boundaries. As I look at the proposed boundaries for the west side of the Lower Blitzen-Voltage area, these boundaries do not make sense to me. Anything west of 205 and west of the Blitzen River should be treated as a separate area. If you look at the available data for these wells, you would see that the aquifer characteristics are different in this part of the basin. The wells are deeper and have a more difficult time accessing water. Everything on the east side of the Blitzen river has consistent characteristics including depth, yield, and temperature. Everybody knows that the Dog Mountain area doesn't have good water, either quantity or quality. The Department needs to listen to and learn from our local experts, including well drillers, who have detailed knowledge about the aquifers in this basin. There is no way this is all one groundwater reservoir. Groundwater conditions are so variable across the basin and depending on how deep you drill. The Department needs to take local knowledge into consideration when determining and finalizing boundaries.

The other thing that doesn't make sense to me and strikes me as unfair is how the Department has handled transfers. The Department recently approved a transfer out of Weaver Springs, which has been a well-known problem area for at least a decade, and transferred it into the Lower Blitzen-Voltage area. It's our understanding that the water that was transferred was from wells that had actually lost access to water. The previous owners had abandoned the wells. When we expressed concern about this to the Region Manager, we were told that the Department did a test and that none of the neighbors would be negatively affected and that we didn't have anything to worry about. These transferred water rights just started getting developed and have a more senior date than I do, so even though they are just coming online, I'm going to be the one getting completely shut off. How does this make sense? Why were we told that we didn't have anything to worry about?

To be clear, I don't want to put a target on any of my neighbors. We've all been following the rules and doing the best we can. I just want to know where the accountability is for the Department's decisions and actions. Many irrigators in this area stopped attending meetings because early on in the RAC meetings the Department said that not all areas would be regulated, including the Lower Blitzen Voltage subarea. Now they are proposing major regulatory reductions. This doesn't make sense. Why did Department staff tell us one thing and then in the last six months completely change their mind? Why is the Department changing its approach without any outreach to those of us who will be affected? Who is the Department responding to? The Department went right from stating there is no problem to regulatory reductions without trying to engage us in voluntary joint action. This leaves a lot of us scratching our heads and doing the best to understand what is going on and figuring out how to react. We're doing the best we can to be responsive, but the goal posts keep changing.

The other thing that's not fair is that the Department has been approving so many water rights extensions in the basin and in our area. I developed all of my water rights within the original 5 years that was allowed. Some of our neighbors have more senior rights, but some of those rights were only just developed in the last few years because they received extensions for decades. How does it make sense that those of us who have been using our water for 20-25 years are going to get shut off so that water rights that just got developed can use water? How does it make sense that, by our math, Dog Mountain will only be cut back to 2015 water rights, but we'll be cut back to 1999 water rights when we have good water and don't have any problems?

We have not observed any declines in our wells or in our area. We have great well yield. According to the Department this part of the basin is not overappropriated or overdrawn and the Department has no evidence of excessive declines. Many of us were told there was

not a problem in our part of the basin. We were told this personally and we also heard this at RAC meetings. Now the Department is saying we have a big problem without the data to back it up. I'm really trying to make sense of how this happened.

I recently purchased a right from within this subarea to transfer to my property and was told from the Department that I had nothing to worry about. This was a transfer from one piece of ground in this subarea to another piece of ground in this subarea, not from somewhere outside of the subarea. Now my ability to develop the water right transfer that the Department just approved is in question. People are making significant investments based on what the Department has been communicating publicly and privately. The CREP program won't even allowed this property to be enrolled. These rules and programs are not set up to help us. The rules and programs are confusing and make things more difficult and more confusing for us. We can't make good decisions for our families, for our businesses, and for the basin if the rules keep changing. If the current proposed rules get adopted we will lose everything.

We are a small family farm. We have invested everything we have in our business. We are deeply invested in this place and in this community. We hoped to pass this onto our kids, who call this basin home, but now we don't know what the future holds for them. Everything we have done up until this point, every sacrifice we have made to make ends meet, every summer we have worked hard rather than taking a vacation as a family, every promise we have made to our children about their future, it will all be for nothing if these rules go through with the proposed cuts. I want you to put yourself in my shoes and imagine what this would be like. This has been so stressful and overwhelming. We are committed to being responsible water users and will be working to bring forward a voluntary agreement to the Commission by December. We are willing to partner with the Department and show that we can conserve water and do what's right for the resource. We just ask for that opportunity and for fairness.

The Department is supposed to protect our water rights, not take them away. The Lower Blitzen-Voltage area is not overappropriated or overdrawn and shows no evidence of excessive declines. This area should be removed from the Critical Groundwater Area boundary and the Department should work with us on voluntary conservation. Under the current rules the Department would only allow irrigators in this part of the basin to use 18% of natural recharge. Depending on what information you're looking at the Department is proposing 39-61% cuts for our part of the basin even though they've repeatedly told us that there isn't a problem and things are fine in our part of the basin. We can reduce use without destroying small businesses and shutting down small family farms.

Thank you for considering my comments.

-----Original Message-----

From: Jacob Davis <jacobdavis1219@gmail.com>

Sent: Thursday, June 12, 2025 9:34 AM

To: WRD_DL_Director <WRD_DL_director@water.oregon.gov>; FREDLUND Cassidy A * WRD <cassidy.a.fredlund@water.oregon.gov>; LANE Mindy J * WRD <mindy.j.lane@water.oregon.gov>

Subject: Jacob Davis water users, lower Blitzen

[Some people who received this message don't often get email from jacobdavis1219@gmail.com. Learn why this is important at <https://aka.ms/LearnAboutSenderIdentification>]

My name is Jacob Davis I'm a third generation farmer in the Lower Blitzen ,my grandpa first start developing here in the 50s my dad was born and raised here and start developing and when I was old enough and went out on my own I start developing so I can have something for my wife and my four children of our own. They're wanting us to Reduce our water in the lower Donner Blitzen. We have had no decline in any of our wells were actually up a foot, I don't think we need any more new development so we can protect what we have. The Department let investors come into our backyard and put in ten new pivots in the last two years they were able to transfer from the weaver spring sub area, which had a major problem, into the lower donor Blitzen that's 26 miles away. I don't agree with that . Some of the Water Right they developed when they bought the property and started developing with in the last year had never been developed. It was in Sagebrush but yet they were able to keep that water right Even though it's sat idle for 20+ years , when I had five years to develop my Water Right I don't think that's fair. I don't agree with someone getting to transfer water rights and keeping the original priority date. It should've started over from the transfer date. I don't agree with the state telling me one of my water rights was good and it was safe to buy and now it looks like it's going to be canceled. Most of us farmers here local are generational or are here to stay and raise families. My operation right here I have everything mortgaged as irrigate usable acres ,I cannot afford to be cut back very much or I will lose it all. I don't believe this is one Reservoir that irrigates everything where I live right now my water comes from the Steens Mountain where I grew up 12 miles down the road that waterflow came from RiddleMountain

Sent from my iPad

August 13, 2025

**Kelly Mainz – Rulemaking Coordinator
Oregon Water Resources Department
725 Summer St. N.E. Suite A
Salem, OR 97301-1271**

Subject: Comments on Division 512 Rules

Dear Mr. Mainz,

My name is Jacob Davis and I am a third generation farmer and business owner in the proposed Lower Blitzen-Volage subarea where we irrigate 320 acres with groundwater. I have been tracking the rulemaking process for the last two years and have had a difficult time understanding how the Department arrived at their final proposal. My grandpa moved to the basin in 1955 and drilled one of the first irrigation wells in the Lower Donner Und Blitzen. My dad has been farming for nearly 70 years. We have a lot of knowledge handed down from the old timers that is valuable and should be used by scientists to help understand and manage our basin. As currently proposed over the next 30 years me and my wife and my dad and mom are all going to lose everything we have. We will lose our businesses, our jobs, our homes, our community, our sense of place. We want to be here. We want to farm. This is our life and our livelihood. We are good stewards of our land and water resources. We have followed all of the rules and we work hard every day to right by our neighbors and our community.

I would first like to talk about the proposed boundaries. As I look at the proposed boundaries for the west side of the Lower Blitzen-Voltage area, these boundaries do not make sense to me. Anything west of 205 and west of the Blitzen River should be treated as a separate area. If you look at the available data for these wells, you would see that the aquifer characteristics are different in this part of the basin. The wells are deeper and have a more difficult time accessing water. Everything on the east side of the Blitzen river has consistent characteristics including depth, yield, and temperature. Everybody knows that the Dog Mountain area doesn't have good water, either quantity or quality. The Department needs to listen to and learn from our local experts, including well drillers, who have detailed knowledge about the aquifers in this basin. There is no way this is all one groundwater reservoir. Groundwater conditions are so variable across the basin and depending on how deep you drill. The Department needs to take local knowledge into consideration when determining and finalizing boundaries.

The other thing that doesn't make sense to me and strikes me as unfair is how the Department has handled transfers. The Department recently approved a transfer out of Weaver Springs, which has been a well-known problem area for at least a decade, and transferred it into the Lower Blitzen-Voltage area. It's our understanding that the water that was transferred was from wells that had actually lost access to water. The previous owners had abandoned the wells. When we expressed concern about this to the Region Manager, we were told that the Department did a test and that none of the neighbors would be negatively affected and that we didn't have anything to worry about. These transferred water rights just started getting developed and have a more senior date than I do, so even though they are just coming online, I'm going to be the one getting completely shut off. How does this make sense? Why were we told that we didn't have anything to worry about?

To be clear, I don't want to put a target on any of my neighbors. We've all been following the rules and doing the best we can. I just want to know where the accountability is for the Department's decisions and actions. Many irrigators in this area stopped attending meetings because early on in the RAC meetings the Department said that not all areas would be regulated, including the Lower Blitzen Voltage subarea. Now they are proposing major regulatory reductions. This doesn't make sense. Why did Department staff tell us one thing and then in the last six months completely change their mind? Why is the Department changing its approach without any outreach to those of us who will be affected? Who is the Department responding to? The Department went right from stating there is no problem to regulatory reductions without trying to engage us in voluntary joint action. This leaves a lot of us scratching our heads and doing the best to understand what is going on and figuring out how to react. We're doing the best we can to be responsive, but the goal posts keep changing.

The other thing that's not fair is that the Department has been approving so many water rights extensions in the basin and in our area. I developed all of my water rights within the original 5 years that was allowed. Some of our neighbors have more senior rights, but some of those rights were only just developed in the last few years because they received extensions for decades. How does it make sense that those of us who have been using our water for 20-25 years are going to get shut off so that water rights that just got developed can use water? How does it make sense that, by our math, Dog Mountain will only be cut back to 2015 water rights, but we'll be cut back to 1999 water rights when we have good water and don't have any problems?

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not a problem in our part of the basin. We were told this personally and we also heard this at RAC meetings. Now the Department is saying we have a big problem without the data to back it up. I'm really trying to make sense of how this happened.

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Thank you for considering my comments.

July 23, 2025

Kelly Mainz – Rulemaking Coordinator
Oregon Water Resources Department
725 Summer St. N.E. Suite A
Salem, OR 97301-1271

Received
AUG 04 2025
OWRD

Subject: Silvies Subarea Public Comments on Proposed Division 512 Rules

Dear Mr. Mainz,

Please accept these comments on behalf of the below signed individuals. Many of these individuals live in the Silvies Subarea or support businesses within the Silvies Subarea. We collectively request that the Department follow its existing policies and makes a greater effort to limit the economic impacts of proposed groundwater reductions in this area. Specifically, we make the following requests for the Division 512 rules:

- Either exclude the Silvies Subarea from the Critical Groundwater Area designation, or include the Silvies area in a Critical Groundwater Area designation for the purpose of protecting existing groundwater users from conditions that would lead to this area being “overdrawn.”
- Include the definition of “reasonably stable” and “overdrawn” from OAR 690-008-0001 in the Division 512 rules and apply it in a management context.
- Prioritize voluntary reductions in groundwater use through the development of a voluntary agreement in this Subarea rather than through regulatory action. Encourage and incentivize voluntary groundwater reductions of 10-15% through the rules.
- Set a threshold by which regulatory action would be triggered when a median of wells in this Subarea exceed “reasonably stable” conditions (e.g., exceed 25 ft or 0.6 ft/yr of decline). Do not pursue regulation until the thresholds have been met.
- Allow groundwater levels to stabilize at or around “reasonably stable” conditions (e.g., around 25 feet of decline). Adjust the permissible total withdrawal as necessary to reflect these thresholds.
- Allow cities to grow into their water rights while encouraging conservation.
- Provide a pathway for offset water to be used to secure a new quasi municipal water right for this area if it becomes a preferred method for delivering water to households.
- Specify the process by which the Department will consider local knowledge when making a determination of what constitutes “representative” wells for analysis. Actively partner with groundwater users to monitor groundwater levels and groundwater use and rebuild credibility and trust in Department data and science.

Groundwater users believe that groundwater in this Subarea is reasonably stable and that the conditions do not exist for regulatory action if the Department adheres to its own policies for groundwater allocation. As currently drafted, the current rules have the potential to decimate our local economy, bankrupt local businesses, disrupt families, and destroy the social fabric and culture of our community. We recommend an approach that is more tailored to the reality and

needs of each Subarea, that encourages and incentivizes conservation, and that reduces economic impacts.

According to ORS 537.525 and ORS 536.220 the Department is required by law to protect existing water rights. ORS 536.525 clearly states a preference for voluntary joint action with groundwater users prior to relying on the police power of the state. We urge the Department to honor previous commitments and existing statutory requirements and first meaningfully pursue voluntary joint action with groundwater users in the Silvies Subarea prior to pursuing punitive regulatory action. We are committed to maintaining our way of life and sustainably managing groundwater resources for current and future generations and believe that is possible in this Subarea.

For most of the rulemaking process the Department was proposing no reductions in the Silvies area. The Department changed its approach relatively late in the rulemaking process and is now requiring that the entire basin reach "durably stable" conditions (0 ft/yr of decline) within 30 years. The Department is currently proposing a 15% regulatory reduction from current estimated pumpage in the Silvies Subarea despite the fact that groundwater conditions meet the definition of "reasonably stable." This level of reduction is not warranted for this Subarea based on existing policies and existing data.

Groundwater levels in the Silvies Subarea are reasonably stable as per the definition in OAR 690-008-0001. The Department's own data shows that declines throughout this area have been minimal. The Groundwater Level Trends analysis performed in 2024 show that the median overall decline is -2.6 ft and the median rate of decline is -0.3 ft/yr. Notably, these trends are well within the range of what is considered reasonably stable by the Department. Data recently collected by groundwater users in the area are showing that groundwater levels in portions of the basin are stable depending on the timeframe used for analysis and some wells have even risen in recent years. No available data show that this area has met the criteria for designation as a critical groundwater area. There are no wells that have met the Department's threshold for declining excessively or excessively declined.

We recognize that the Department has concerning data about parts of the Northeast-Crane area and has identified areas of decline that need to be addressed before they reach critical conditions. We also understand that the Silvies Subarea is a recharge area for the Northeast-Crane area. That being said, if the basin is treated as "one groundwater reservoir" as the Department suggests, the whole basin is not overdrawn by the Department's own definition because estimated pumpage is less than recharge. If the area is treated separately, which we believe it should be, the groundwater study shows that this "region" is overdrawn by only -2,700 afy when measured against current pumpage. Fortunately, this is far less than the -96,454 afy of overuse that would occur if all groundwater rights had been fully developed. We commend the Department for focusing attention and effort on our basin before things could worsen, but disagree with the severity of the Department's proposed approach.

Groundwater users have been responsibly using water within the terms and conditions of their permits for decades. The Department previously made a determination in this area that groundwater is available, within the capacity of the resource, and that groundwater use was in the public interest as required by ORS 537.621. We urge the Department and Commission to adhere to existing statutes and rules rather than pursuing unprecedented groundwater reductions through regulations that lack a defensible legal and technical basis.

While we do not agree with inclusion of this Subarea in the Critical Groundwater Area boundary, if it is included in the Critical Groundwater Area, then existing groundwater users should be protected and the permissible total withdrawal should be set at an updated estimate of current pumpage. We do not agree that reducing groundwater use via regulation is warranted. Within this area we believe that voluntary reductions are possible and beneficial and should be the preferred approach rather than regulation. Many groundwater users within this area have proactively implemented water conservation measures and have invested in measures to responsibly and sustainably use groundwater in this Subarea. Conservation should continue to be encouraged and supported within this Subarea rather than pitting groundwater users against one another or creating an atmosphere of uncertainty that will stifle innovation. If groundwater levels are no longer considered to be "reasonably stable" then the rules should specify the proposed regulatory actions that could be taken once that threshold is met. This backstop will incentivize joint action to prevent groundwater conditions from reaching that point.

Within this Subarea, we are not aware of homes or stockwater wells that have lost access to groundwater due to declining groundwater levels, except for very shallow wells or wells with well construction issues. The City of Burns and Hines have not reported any concerns about groundwater levels for municipal supplies. Both cities should be allowed to continue to grow into their water rights while implementing conservation practices to make the best use of groundwater resources. Within this Subarea there should also be a clear pathway in the rules for bringing new water rights online where offset water can be identified, as was included in the current Division 512 rules. The Silvies Subarea is where additional economic development is most likely to occur in the basin and the State should look for creative ways to support this development while ensuring sustainable groundwater management.

These proposed changes would adhere to existing law and policy and minimize economic impacts as required by law while preserving public welfare, safety, and health and ensuring adequate and safe supplies of groundwater for human consumption while also conserving maximum supplies of groundwater for agricultural and all other beneficial uses consistent with ORS 537.525. We appreciate the opportunity to comment and look forward to partnering with the Department on building a sustainable groundwater future for the Silvies Subarea.

James E Campbell
32401 Airport Ln
Burns, OR 97720



Mr James E Campbell
32401 Airport Ln
Burns, OR 97720

PORTLAND OR RPDC 972

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1775 ★ 2025

Kelly Mainz- Rulemaking Coordinator
OR Water Resources Dept.
725 Summer St. NE Suite A
Salem, OR 97301-1271

MEINZ Kelly A * WRD

From: Jaris Shelman <candjshelman@yahoo.com>
Sent: Wednesday, August 13, 2025 3:34 PM
To: MEINZ Kelly A * WRD
Subject: Re: Kelly Mainz

I am writing in regard to the ongoing groundwater initiative in Harney County. I own a ranch in the harney area 10 miles east of Burns on the coffeepot creek drainage. I have lived here the last 20 yrs and have seen our shallow domestic wells go dry and have to be redrilled. I also own a small farm that has a small irrigation well that was drilled in the early 90s and been a good well to grow hay for our livestock. It has traditionally been a good well until the last 10 yrs when we have seen an implosion of well drilling all around us and in some cases from water rights transfers from the narrows area from farms that had no proven water at that location. I think it was unwise and a mistake to allow those transfers to have taken place. I feel that the water law or priority date system should be implemented if any ground water is being shut off, it should be the junior recent dated wells that get cut back or off if necessary.

On Wednesday, August 13, 2025 at 03:16:37 PM PDT, MEINZ Kelly A * WRD <kelly.a.meinz@water.oregon.gov> wrote:

Hello,

You can send your public comment to this email.

Take care,

[Kelly Mainz, EIT \(he/him\)](#)

Water Policy Analyst

725 Summer St NE Suite A, Salem OR 97301

Phone: 971-718-7087 | Email: kelly.a.meinz@water.oregon.gov



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Please Note: under Oregon law, messages to and from this e-mail address may be made available to the public

HARTT Laura A * WRD

From: Grondin Oregon <grondin.or@gmail.com>
Sent: Tuesday, August 12, 2025 11:48 PM
To: WRD_DL_rule-coordinator
Cc: MEINZ Kelly A * WRD; SEYMOUR Tim R * WRD; SPRIET Jason D * WRD; IVERSON Justin T * WRD; BOSCHMANN Darrick E * WRD; Grondin Oregon
Subject: Written Public Comment for Harney Basin GW Rule OAR 690-512
Attachments: Harney_OAR_690_512_Public_Comments_Grondin.pdf; Harney_OAR_690_512_Public_Comments_Grondin.docx

Some people who received this message don't often get email from grondin.or@gmail.com. [Learn why this is important](#)

Hi Kelly,

Thank you for the opportunity to provide public comment regarding the proposed Harney Basin Groundwater Rule OAR 690-512. My written comments in both PDF and MS Word formats are attached.

Thanks,

Jerry Grondin

To: Kelly Mainz, OWRD Rule Coordinator

From: Gerald (Jerry) Grondin, retired OWRD hydrogeologist (Oregon Registered Geologist G2162)

Date: 12 August 2025

Subject: Public Comment Regarding Proposed OAR 690-512 Rule Changes and Additions

Thank you for the opportunity to provide public comment related to the proposed OAR 690-512 rule changes and additions. My comments are divided into rule specific comments, rule related general comments, and an addendum.

Rule Specific Comments:

- 690-512-0041 Harney Basin Critical Groundwater Area
 - The rule summary in the clean copy (no tracked changes) notes, "... the new rule requires static water level reporting starting in 2028,..." This static water level reporting requirement is not found in this section of the rule (clean copy).
 - The rule summary in the tracked changes copy of the rule **does not include** this particular static water level reporting requirement note.
 - The clean and tracked changes copies should be the same.
- 690-512-0110 Serious Water Management Problem Area (SWMPA)
 - Section (2): I agree with "...Groundwater wells that are regulated off and disconnected from all water use infrastructure do not require a totalizing flow meter to be installed unless or until use is permitted to resume."
 - Section (5) a. I disagree with "Groundwater wells regulated off are not required to report until use is permitted to resume."
 - A record of no groundwater use/pumpage at an authorized POA/POD is as important and necessary as records of actual groundwater use/pumpage at an authorized POA/POD.
 - A record of no groundwater use/pumpage at an authorized POA/POD is necessary for the following reasons:
 - ◇ Complete documentation/record of all groundwater use/pumpage at all authorized POA/POD;
 - ◇ Document compliance with being regulated off;
 - ◇ Creates documentation that minimizes future disagreements/conflicts regarding groundwater use/pumpage.
 - Reporting no groundwater use can occur two ways:
 - ◇ Where no flow meter is required: record that no meter is present and record zero water use for each month
 - ◇ Where a flow meter is required: record the meter ID and enter the appropriate volume and/or meter reading for each month

Rule Related Comments:

The comments that follow relate to the hydrogeologic investigation, analyses, interpretations, and conclusions that are the technical basis for the proposed OAR 690-512 rule changes and additions.

General Comment 1:

The hydrogeologic investigation, analyses, interpretations, and conclusions by the OWRD-USGS Harney Basin groundwater investigation team is similar to a doctor (the team) telling a patient (the Harney community) their dire medical diagnosis-situation after conducting and analyzing exhaustive tests and data. All current options to get the situation under control and stable are unpleasant and unwelcome for the patient and the medical team delivering the message.

General Comment 2:

The hydrogeologic investigation, analyses, interpretations, and conclusions by the OWRD-USGS Harney Basin groundwater investigation team is 100-percent data based. The team strove to identify, collect, measure, and analyze all available data. The types of data collected, analyzed, and interpreted by the end of 2022 exceeded what was originally proposed-anticipated in the 2016 technical work plan. The hydrogeologic investigation, analyses, interpretations, and conclusions followed the data only. The interpretations and conclusions are consistent with both historic and current data and were derived using rigorous scientific methods and standards. A penalty enforced code of professional conduct by the Oregon Board of Geologist Examiners and USGS standards excludes-prohibits any personal bias or preconceived notions. The team was and is constantly dedicated to getting the science right.

General Comment 3:

The OWRD-USGS Harney Basin groundwater investigation team heard-received, considered, investigated, and assessed locally derived hydrogeologic observations and interpretations. The aggregate data does not support the locally derived hydrogeologic interpretation of Harney Basin groundwater being variously compartmentalized and isolated. The hydrogeologic interpretation by the OWRD-USGS Harney Basin groundwater investigation team of a single groundwater system composed of multiple, hydraulically interconnected hydrogeologic units with varying hydraulic properties as presented in Gingerich and others (2022) and supporting reports can and does account for the various locally derived groundwater occurrence and behavior observations presented to the team. Many of the hydrogeologic units are complex, non-homogenous (heterogenous), but remain hydraulically interconnected internally and with adjoining-neighboring hydrogeologic units. The complexity does not preclude hydraulic interconnection within the Harney Basin groundwater system, but it can-does affect the rate and direction of groundwater flow at various locations and depths within the groundwater system, and it can-does affect how the response to pumping, recharge, and other various groundwater stresses propagates to different locations and depths within the groundwater system.

Geologic structures and their influence on groundwater flow does exist within the Harney Basin as presented in Gingerich and others (2022) and supporting reports. Structure related groundwater flow restrictions appear primarily limited to some basin boundary segments where exposed fault escarpments are present such as the east escarpment of Steens Mountain. Where present, these restrictions limit groundwater flow across the basin boundary (limit flow between the Harney Basin and adjoining basins). Conversely, structure may be responsible for an apparent zone of increased permeability at depth in the Silver Creek Valley from an area north of Moon Reservoir to an area north of Riley and Suntex. The increased permeability can enhance groundwater flow and the propagation of groundwater response to pumping and other stresses within that particular zone. That zone is a hydraulically connected portion of the overall Harney Basin groundwater system.

General Comment 4:

Several public comments from the Harney community directly or indirectly accuse OWRD and/or the OWRD-USGS Harney Basin groundwater investigation team of being callous, indifferent, and/or insensitive to the potential damaging socio-economic consequences that may result from the rules being proposed based upon the technical team's work: the technical data collected, the technical analyses conducted, and the technical findings and conclusions reported. The technical team's mission, obligation, and commitment was and is to conduct and report thorough and complete findings and conclusions based on sound science that can inform and facilitate fact-based discussions and decisions. The team was and is aware of the potential damaging socio-economic consequences of their findings and conclusions. They used that awareness to increase their determination, efforts, and seriousness to be technically thorough, complete, and unbiased-unclouded.

This technical team participant is particularly aware and sensitive to the potential damaging socio-economic consequences that may result from the rules being proposed based upon the technical team's work based on my dad's business loss, our family's financial devastation, and subsequent financial and non-financial consequences and ramifications that started when I was in high school and persisted for decades. Some consequences and ramifications still persist more than 50 years later. The details of that experience are beyond the scope of these comments. Nevertheless, I use that experience and awareness to increase my determination, effort, and seriousness to be technically thorough, complete, and unbiased-unclouded in all my groundwater reviews and groundwater investigations. I use that experience and awareness as motivation to get the science right.

General Comment 5:

Multiple public comments from the Harney community directly or indirectly accuse OWRD of being solely responsible for any groundwater problems in the Harney Basin. OWRD and basin irrigators, and/or businesses, and/or community leadership share responsibility for the Harney Basin groundwater problems. There are no innocents. There was a period when OWRD approved-issued groundwater transfers and new groundwater rights with little to no reservation. OWRD technical reservations regarding groundwater stability and sustainability and groundwater management arose and increased as the number and frequency of requests for new groundwater rights increased, the acreage and annual volume of groundwater being requested increased for each new groundwater right, and groundwater transfer distances being requested increased. Additionally, OWRD began receiving and assessing groundwater interference complaints. Subsequently, OWRD increasingly approved-issued groundwater transfers and new groundwater rights under legal and political duress-pressure initiated by basin irrigators, and/or businesses, and/or community leadership.

Occurrences of unauthorized use of groundwater and the construction of undocumented wells in the basin due to misinformation and/or disregard for Oregon Water Law exacerbated the basin's groundwater problem. Prior to 2010 (2088????), the OWRD Groundwater Section manager and OWRD East Region manager visited the basin to encourage community members, well owners, and irrigators to fully comply with Oregon water Law. While there, they learned the local euphemisms for the undocumented wells ("maverick wells") and for the unauthorized use of groundwater ("traditional beneficial use of water"). Additionally, one irrigator admitted to previous unauthorized groundwater use that eventually ended when he began receiving federal water conservation payments. He was being paid for water use cessation for water he was never authorized to use. These occurrences have decreased.

Addendum 1: Groundwater Connection vs. Isolation in a Complex Hydrogeologic System

Multiple statements by some Harney Basin residents representing various interests during Harney Basin Groundwater Study Advisory Committee meetings, OAR 690-512 Rule Advisory Committee meetings, and OAR 690-512 Rule Public Comment meetings claim Harney Basin groundwater necessarily occurs in isolated, disconnected compartments due to the basin's complex hydrogeology. The OWRD-USGS Harney Basin groundwater investigation concludes otherwise. Groundwater throughout the hydrogeologically complex basin is hydraulically interconnected as presented in Gingerich and others (2022).

Hydraulically interconnected groundwater can and does exist within complex hydrogeologic systems-basins, and variable groundwater responses and/or apparent non-responses do not prove disconnected or isolated groundwater. This addendum presents several illustrative examples.

Example 1: Open Water Reservoir (hypothetical example)

Consider a geographically large and deep open water reservoir. The reservoir water surface can become seriously turbulent and excessively exciting for boaters, boarders, and swimmers when a severe storm with high winds sweeps across the reservoir. Despite the water surface turbulence and excitement, water below the surface transitions from turbulent to calm with increasing depth. Conversely, a high-capacity pump intake at the reservoir bottom creates significant excitement near the intake when the pump operates, but the water at the reservoir surface remains calm as it lowers and water at the reservoir bottom beyond a certain distance from the intake remains calm while the water pressure decreases as the reservoir level lowers. In this example, water at different locations and depths respond differently to the same event. Very few, if any, would argue the water at the different reservoir locations and depths is not hydraulically connected.

Example 2: Open Water Reservoir Filled with Coarse Sand (hypothetical example)

Now consider filling the geographically large and deep open water reservoir in Example 1 with coarse sand converting the open water reservoir to a geographically large and deep saturated sand reservoir. Just like Example 1, water at different reservoir locations and depths respond differently to the same event. The only difference is the sand dampens the response. Again, very few, if any, would argue the water at the different reservoir locations and depths is not hydraulically connected.

Example 3: Oregon Coast Sand Dune Supplying Groundwater to the Coos Bay-North Bend Well Field

Robison (1973) presents the investigation, analyses, characterization, and behavior of groundwater within the coastal sand dunes north of Coos Bay. The dune portion investigated covers an approximately 20-square-mile area (about 10 miles long and 1 to 3 miles wide) between the Pacific Ocean and Hwy 101, has a variable thickness ranging from 80 to 150 feet, is composed of clean and uniform sand that includes thin layers of silt, clay, and organic matter, and during the investigation, hosted 18 industrial and municipal use production wells, each capable of removing 200 to 300 gallons of groundwater per minute from the lower part of the sand deposits. The investigation was conducted to assess the potential of the production wells causing water levels to lower in the shallow lakes near the wells and to assess the potential of the wells causing an inflow of sea-water that adjoin the dunes. The investigation found groundwater within the coastal sand dunes is hydraulically connected throughout the dunes including from the bottom of the sand deposits to the water table and shallow lakes at the top of the dunes. Additionally, the investigation

found the permeability within the sand dunes is anisotropic, whereby the horizontal permeability is two orders of magnitude greater than the vertical permeability. This anisotropy affected the short-term drawdowns observed when short-term tests were conducted using the production wells. Test related groundwater level “drawdown cones” were apparent in the “deep” groundwater zone but not evident in the “shallow” (upper) groundwater zone adjacent to the production wells. However, longer-term data did show longer-term production well use caused water levels in the shallow groundwater zone and at shallow lakes to lower as much as several feet. Despite the groundwater being hydraulically connected throughout the entire sand dunes, a two-layer groundwater model was needed to represent the influence of the anisotropic permeability on groundwater behavior within the sand dunes.

In this example, some could initially and incorrectly interpret the short-term test data as evidence that the shallow zone groundwater and the deep zone groundwater within the sand dunes is not hydraulically connected. The longer-term data shows they are hydraulically connected. The anisotropic permeability influenced when and how groundwater in the shallow zone responded to groundwater removal from the deep zone by the production wells.

Example 4: Harney Basin Groundwater

Gingerich and others (2022) and supporting reports describe Harney Basin groundwater occurring within a hydrogeologic environment far more complex than the previous three examples by orders of magnitude. Nevertheless, similar to the previous three examples, the reports describe the basin’s groundwater behaving-responding differently at different basin locations and depths within a single, basin wide, hydraulically connected groundwater system.

There are hydrogeologic environments in Oregon that separate and/or isolate groundwater to varying degrees. The Harney Basin is not one of them.

Addendum 2: Aquifer vs. Groundwater System

Multiple public comments referred to Harney Basin groundwater occurring within distinct aquifers. The OWRD-USGS Harney Basin groundwater study team favored using the term “groundwater system” as being more accurate for the Harney Basin than the term “aquifer.” Appendix B in Grondin and others (2021), includes a paragraph that distinguishes the terms. That paragraph is copied below.

The term *aquifer* within scientific usage applies to the geologic unit, group of geologic units, or a portion of a geologic unit within the saturated zone that yields a “usable” or an “economic” quantity of water to a well or a spring (Davis and DeWeist, 1966, Lohman, 1972a, Bear, 1979, Freeze and Cherry, 1979, Heath, 1983). What qualifies as “usable” or “economic” is ambiguous, can vary greatly, and can possibly be contentious given the intended use can range from 5 gallons per minute for a house well, to 1,000 gallons per minute for an irrigation well to much higher yields for municipal or industrial use. A more encompassing and useful term is *groundwater system* (Alley and others, 2002), which refers to the groundwater occurrence, flow, and storage within the entire saturated zone from the smallest yield portions to the highest yield portions. It recognizes that the low yield portions of the saturated zone (*aquitard*) also stores and transmits sufficient water to be significant to the basin and sub-basin-scale flow of groundwater (Davis and DeWeist, 1966, Bear, 1979).

References:

The following were either directly cited or indirectly noted as supporting reports.

Alley, W.M., Healy, R.W., LaBaugh, J.W., and Reilly, T.E., 2002, *Science*, v. 296, no. 5575, June 2002, p. 1985-1990.

Beamer, J.P., and Hoskinson, M.D., 2021, Historical irrigation water use and groundwater pumpage estimates in the Harney Basin, Oregon, 1991–2018: Oregon Water Resources Department Open File Report 2021–02, 53 p. [Also available at https://www.oregon.gov/owrd/wrdreports/OWRD_OFR_2021-02_Harney_Basin_METRIC_Irrigation_Use_Report.pdf.]

Bear, J., 1979, *Hydraulics of groundwater*: New York, McGraw-Hill Book Company, 569 p.

Boschmann, D.E., 2021, Generalized geologic compilation map of the Harney Basin: Oregon Water Resources Department Open File Report 2021–01, 57 p. [Also available at https://www.oregon.gov/owrd/wrdreports/OWRD_OFR_2021-01_report.pdf.]

Corson-Dosch, N.T., and Garcia, C.G., 2022, Soil-water-balance (SWB) model archive used to simulate mean annual upland recharge from infiltration of precipitation and snowmelt in Harney Basin, Oregon, 1982–2016: U.S. Geological Survey data release. [Also available at <https://www.sciencebase.gov/catalog/item/5f06302a82ce21d4c3f8ae59>.]

Davis, S.N. and DeWiest, R.J.M., 1966, *Hydrogeology*: New York, John Wiley & Sons, 463 p.

Freeze, R.A. and Cherry, J.A., 1979, *Hydrogeology*: Englewood Cliffs, New Jersey, Prentice-Hall, Inc., 604p.

Garcia, C.A., Corson-Dosch, N.T., Beamer, J.P., Gingerich, S.B., Grondin, G.H., Overstreet, B.T., Haynes, J.V., and Hoskinson, M.D., 2022, Hydrologic budget of the Harney Basin groundwater system, Oregon: U.S. Geological Survey Scientific Investigations Report 2021–5128, 140 p. [Also available at <https://pubs.usgs.gov/publication/sir20215128>.]

Garcia, C.A., Haynes, J.V., Overstreet, B., and Corson-Dosch, N., 2021, Supplemental data—Hydrologic budget of the Harney Basin groundwater system, Oregon: U.S. Geological Survey data release. [Also available at <https://www.sciencebase.gov/catalog/item/6092dfd7d34e791692e40fb1>.]

Gingerich, S.B., Johnson, H.M., Boschmann, D.E., Grondin, G.H., and Garcia, C.A., 2021, Contour data-set of the potentiometric surfaces of shallow and deep groundwater-level altitudes in Harney Basin, Oregon, February–March 2018: U.S. Geological Survey data release. [Also available at <https://doi.org/10.5066/P9ZJTZUV>.]

Gingerich, S.B., Johnson, H.M., Boschmann, D.E., Grondin, G.H., and Garcia, C.A., 2022, Groundwater resources of the Harney Basin, Oregon: U.S. Geological Survey Scientific Investigations Report 2021–5103, 116 p. [Also available at <https://doi.org/10.3133/sir20215103>.]

- Gingerich, S.B., Garcia, C.A., and Johnson, H.M., 2022, Groundwater resources of the Harney Basin, southeastern Oregon: U.S. Geological Survey Fact Sheet 2022-3052. 6p. [Also available at <https://pubs.usgs.gov/fs/2022/3052/fs20223052.pdf>]
- Gingerich, S.B., Boschmann, D.E., Grondin, G.H., and Schibel, H.J., 2024, Groundwater model of the Harney Basin, southeastern Oregon: U.S. Geological Survey Scientific Investigations Report 2024-5017, 104 p., [Also available at <https://doi.org/10.3133/sir20245017>]
- Grondin, G.H., 2021, Methods and results for estimating groundwater pumped, returned, and consumed for non-irrigation uses in the Harney Basin, Oregon: Oregon Water Resources Department Open File Report 2021-03, 28 p. [Also available at https://www.oregon.gov/owrd/wrdreports/OWRD_OFR_2021-003_Harney_Basin_non_irrigation_GW_use_report_stamped.pdf.]
- Grondin, G.H., Boschmann, D.E., Barnett, H.J., and Scandella, B.P., 2021, Methods and results for estimating the hydraulic characteristics of the subsurface materials in the Harney Basin, Oregon: Oregon Water Resources Department Open File Report 2021-04, 63 p. [Also available at https://www.oregon.gov/owrd/wrdreports/OFR_2021-04_Harney_Basin_subsurface_hydraulic_properties.pdf.]
- Heath, R.C., 1983, Basic ground-water hydrology: U.S. Geological Survey Water-Supply Paper 2220, 84 p.
- Lohman, S.W., 1972a, Ground-water hydraulics: U.S. Geological Survey Professional Paper 708, 70 p.
- Robison, J. H., 1973, Hydrology of the dunes area north of Coos Bay, Oregon: U.S. Geological Survey Open-File Report 73-241, 62 p. [Also available at <https://doi.org/10.3133/ofr73241>]
- Schibel, H.J., and Grondin, G.H., 2023, Methods and Results for estimating 1930-2018 well pumpage in the Harney Basin, Oregon: Oregon Water Resources Department Open File Report 2023-01, 72 p. [Also available at https://www.oregon.gov/owrd/WRDReports/OWRD_OFR_2023_01.pdf]

HARTT Laura A * WRD

From: Jesse Svejcar <svejcaj@eou.edu>
Sent: Friday, August 8, 2025 6:41 AM
To: WRD_DL_rule-coordinator
Subject: Proposed groundwater policies for the Harney basin

Some people who received this message don't often get email from svejcaj@eou.edu. [Learn why this is important](#)

To whom it may concern,

I'm writing today to comment and communicate my extreme displeasure with the way the groundwater situation in Harney County is being handled by the state. The state has ignored the issue for years and now rather than owning up to it and enforcing current water law, owrd wants to change the rules and destroy the rights of hundreds of irrigators and landowners. It is clear that these decisions are not being made based on real data and they are not in the best interest of the land or people. Much more data is needed to even begin to understand the groundwater In Harney county and any policy decisions in the meantime should be based on established regulations and not complete paradigm shifts in how we manage water users.

Jesse Svejcar
67442 Reno rd
Hines, OR 97738

MEINZ Kelly A * WRD

From: Jonathan White <jfw.0124@gmail.com>
Sent: Thursday, August 7, 2025 6:45 AM
To: WRD_DL_rule-coordinator
Subject: comment on ground water

You don't often get email from jfw.0124@gmail.com. [Learn why this is important](#)

Going to make this short and to the point. Every well drilled in the basin has a date.
Use that date and start with most junior wells and start shutting them off. Very simple!

The water right transfer needs to stop ASAP. This should have never started.

Keep it simple
Jon White
Hines,Or

PROPOSED HARNEY BASIN GROUNDWATER POLICIES – WRITTEN COMMENT FORM

This written comment form can be used to help you formulate effective written public comments for the Division 512 Harney Basin Program Rules being proposed by the Oregon Water Resources Department, which will be used to manage and regulate groundwater use in the Harney Basin. The questions provided in this form address various aspects of the rules. Each question includes space to write your answer and some questions include options for you to consider. Reach out to Harmony Burright if you want help talking through or recording your comments (541-846-8863 / harmony@saltandfresh.solutions).

Public comments and related materials must be received no later than **August 7, 2025 at 5pm:**

By Email: WRD_DL_rule-coordinator@water.oregon.gov

By Mail: Kelly Meinz – Rulemaking Coordinator
Oregon Water Resources Department
725 Summer St. N.E. Suite A
Salem, OR 97301-1271

Your Name (required): Julie Davis
Your Email (optional): _____
Your Phone (optional): 541 - 589 - 0277
Note: All personally identifiable information may be made public. Please do not include this information if you do not want it included in the public record. A first name and last initial must be included to be considered.

Please check all interests that apply to you:

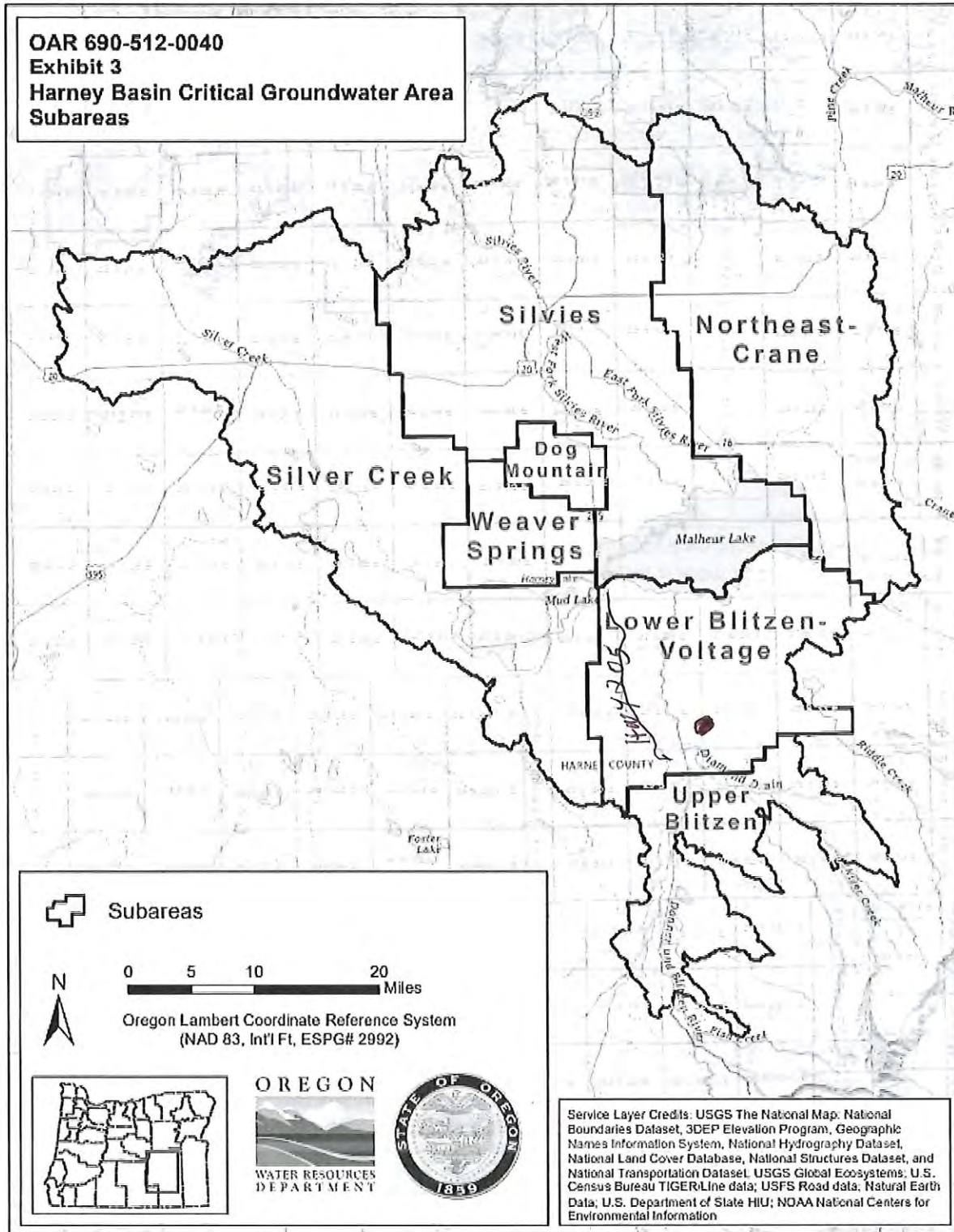
☒	I have at least one well that supplies groundwater to my home for domestic purposes.
☒	I have at least one well that that supplies groundwater to my livestock.
☐	I have at least one well that supplies groundwater to a non-farm business (e.g., store).
☒	I irrigate/grow crops with groundwater in the Harney Basin.
☐	I have a groundwater fed spring on my property that is important to me.
☒	I value groundwater contributions to the environment (e.g., springs and native vegetation).
☒	I value fish and wildlife in the basin, including those that benefit from groundwater.
☒	I use agricultural products that are produced with groundwater.
☒	I value the economic contributions of agricultural operations that use groundwater.

Question 1. Please tell us about yourself and describe why groundwater is important to you. If you use groundwater, describe how you use it.

I grew up in Harney County and married a farmer. We have farmed for 50 years. We use irrigation water to grow alfalfa & orchard grass. Without the ability to pump water for our fields we would not be able to farm.

Return public comments by August 7, 2025 via email or mail to the Water Resources Department

Question 2. If you use groundwater in the Harney Basin, mark with a color dot on the map provided where you use groundwater (this can be a rough approximation).



Question 3. The Water Resources Department proposes to designate the area in the map outlined in black as a **Critical Groundwater Area**, which would give them the authority to regulate or curtail/reduce groundwater use. Do you have any feedback on the boundaries or the basis for designating a Critical Groundwater Area described in the **Division 10 report**? (See 609-512-0041 in the proposed rules)

I believe the west boundary for the Lower Blitzen should not go any further west than Hwy 205.

Question 4. The map on the previous page shows the seven proposed **subareas** that the Department will use to regulate groundwater use (with different levels of regulation for each area). Based on your knowledge of the basin, are there any changes you would suggest to the boundaries? Draw them on the map and describe the reason below. (See 609-512-0041 in the proposed rules)

I believe the west boundary for Lower Blitzen should only go as far west as Hwy 205. We have never had much of a decline in water on our property which is east of Hwy 205. The irrigation west of Hwy 205 has had water issues for 20 years or more.

Question 5. Please describe **groundwater conditions** where you are and what changes in groundwater levels or other groundwater changes you have observed in the last decade. If you have not observed any changes, please note that. You are also welcome to note any questions you have.

From having our static water level reported for the last couple of decades we have only seen a couple of feet difference in the static level due to drought conditions.

Question 6. If you have been or expect to be **impacted by changing groundwater conditions**, please describe how you have been impacted.

We need to have 2.5 acre feet to survive.

Return public comments by August 7, 2025 via email or mail to the Water Resources Department

Question 7. The Water Resources Department proposes to achieve the groundwater management goal of durably stable groundwater levels (0 feet per year of decline) by the year 2058 for the entire basin by curtailing groundwater use in 6-year intervals. Do you have feedback on the groundwater level goal and target groundwater level trend? (See 609-512-0041 in the proposed rules)

	I support the groundwater management goal and target groundwater level trend as proposed.
	I support the target groundwater level trend, but I would like to see more time allowed to achieve the goal. Year achieved:
	I support the target groundwater level trend, but I would like to see the goal achieved in less time on a quicker timeline. Year achieved:
X	I think minor declines are acceptable and should be allowed. Acceptable amount of decline (in total feet or feet per year):
	I would like to see groundwater levels come back up or recover. Desired amount of recovery (in feet):
X	I would like to be able to see groundwater levels be allowed to fluctuate between certain levels (+/- within a certain "band" of acceptable declines)

Question 8. The proposed initial allocation (duty) for groundwater irrigation rights is 2.5 acre feet of water per acre for acres that were irrigated (wetted acres) sometime between 2020-2024. What feedback do you have on this proposal? (See 690-512-0060 in the proposed rules)

	I support the initial allocation of 2.5 acre feet for groundwater irrigation rights.
>	I think the initial allocation should be greater than 2.5 acre feet. Proposed amount: 3 feet
	I think the initial allocation should be less than 2.5 acre feet. Proposed amount:
X	I support that wetted acres should be calculated based on use between 2020-2024.
	I think wetted acres should be calculated based on a different time period. Suggested time period:

is what it's now

Question 9. The proposed initial allocation for municipal or quasi-municipal groundwater rights is 110% of water equal to 110% of the greatest single year in the previous five-year period. What feedback do you have on this proposal? (See 690-512-0060 in the proposed rules)

Our permit states 3 acre feet

Question 10. The proposed permissible total withdrawal (PTW) for each of the seven subareas is described below. This is the amount of water that “represents the amount of water that the Water Resources Department has determined can achieve the target groundwater level trend by 2058. The Department may not reduce groundwater pumping to a value less than the permissible total withdrawal.” Highlight your feedback about the level of reductions for each area below. A memo produced by the Department explores a different allocation between the Lower Blitzen-Voltage area and the Northeast-Crane area. What additional feedback do you have on these proposed levels of groundwater use (PTW) and reductions? (See 690-512-0050 in the proposed rules)

Weaver Springs	Lower Blitzen-Voltage	Northeast-Crane	Silver Creek	Silvies	Dog Mountain	Upper Blitzen
PTW: 4,800 afy	PTW: 8,300 afy	PTW: 35,000 afy	PTW: 15,200 afy	PTW: 21,200 afy	PTW: 4,200 afy	PTW: 100 afy
75% reduction from 2018 use	39-40% reduction from 2018 use	34% reduction from 2018 use	27-28% reduction from 2018 use	15-16% reduction from 2018 use	9-10% reduction from 2018 use	0% reduction from 2018 use
Too much?	Too much?	Too much?	Too much?	Too much?	Too much?	Too much?
Too little?	Too little?	Too little?	Too little?	Too little?	Too little?	Too little?
Just right?	Just right?	Just right?	Just right?	Just right?	Just right?	Just right?
I don't know	I don't know	I don't know	I don't know	I don't know	I don't know	I don't know

The Lower Blitzen should not be cut because it has not fluctuated more than 3 feet in several drought years

Question 11. The reductions in each subarea will be phased in over time following a proposed reduction schedule, with the largest percent of reductions made initially and later reductions phased in over 6 year intervals based on existing groundwater level trends to ensure that groundwater levels are on track to achieve the groundwater management goal. Reductions will be based on priority date using the initial allocation as a starting point. What feedback do you have on the proposed reduction schedule? (See OAR 690-512-0070 in the proposed rules).

	2028	2034	2040	2046	2052	2058
Other Subareas	40% of total reductions	30% of total reductions	15% of total reductions	10% of total reductions	5% of total reductions	Stability achieved
Weaver Springs	75% of total reductions	25% of total reductions	--	--	--	--

	I support the proposed reduction schedule (percent reductions and implementation timeframe).
	I would like to see higher reductions implemented in the near-term.
	I would like to see lower reductions implemented in the near-term.
	I would like to see 20% reductions implemented at each step.
	I would like to see all reductions implemented immediately.
	I would like to see a shorter implementation timeframe (achieve stability sooner).
	I would like to see a longer implementation timeframe (longer period to achieve stability).
X	If groundwater levels have not been declining in a subarea, I would like to see a grace period during the first 6-year period where no reductions are implemented.

Question 12. The Department is proposing to follow an adaptive management approach for implementing reductions informed by groundwater level trends. If groundwater level trends are “on track” then no adjustments would be made. This approach allows the Department to make changes to the reductions to achieve the goal. Reductions could be adjusted up or down depending on how groundwater levels change over the previous 6 years. What feedback do you have on the adaptive management approach? (See 690-512-0080 in the proposed rules)

We have not ~~had~~ had any water issues so why are we having to have a 39-40% cut in the Lower Blitzen?

Question 13. By 2028 all groundwater rights holders will be required to install a flowmeter to measure groundwater use and will be required to report groundwater use on an annual basis. A flowmeter must be installed on this timeframe in order to continue to legally use groundwater under existing rights. What feedback do you have on this requirement? Will you seek any assistance to meet this requirement? (See 690-512-0110 in the proposed rules)

I support this.

Question 14. Under the proposed rules the only new uses that will be allowed are those uses that do not require water rights (i.e., permit exempt uses), such as domestic and stockwater wells, and non-consumptive geothermal uses. What feedback do you have on the proposed new uses? (See 690-512-0030 in the proposed rules)

Question 15. Please describe what personal impacts you expect these rules might have on you (either positive or negative).

If we have to have a 40% water use cut it will cause us to ~~go~~ dry up our fields and no longer be able to farm.

Question 16. Please describe what basin impacts you expect these rules might have on the broader basin or community (either positive or negative). (See the Fiscal Impact Statement).

Return public comments by August 7, 2025 via email or mail to the Water Resources Department

Question 17. Describe actions that you would like the Department to consider that could mitigate or minimize anticipated impacts to you or the basin. This could include support for proposed policies or changes to the proposed policies.

Question 18. When you look into the future, what is most important to you? What do you hope to see for yourself and for the basin? What are you most concerned about?

My grandkids could carry on our legacy as farmers.

Question 19. What else is important for you to communicate to the Department?

Question 20. Do you have any other feedback on the proposed rules or groundwater management?

No new irrigation wells should have been allowed until there was a problem in Weaver Springs and there for years.

For questions about the proposed rules, please contact Kelly Mainz at the Water Resources Department (WRD_DL_rule-coordinator@water.oregon.gov or 971-718-7087).

For assistance with developing effective written comments, please reach out to Harmony Burright with the High Desert Partnership who can help (541-846-8863 or harmony@saltandfresh.solutions).

June 19, 2025

Oregon Water Resources Commission
725 Summer Street NE, Suite A
Salem, OR 97301

RE: Comments on the Notice of Proposed Rulemaking for Division 512 Administrative Rules concerning the Harney Basin, Oregon

Dear Commissioners:

I have been involved in the Harney Basin place-based planning effort for a decade. I have provided grant application development and technical writing services to the planning effort. These comments are my personal comments and should not be considered in any way as representing the collaborative that has been working for that time to address some of the water resource management issues in the basin.

The attached comments are offered in response to the Notice of Proposed Rulemaking Chapter 690 Division 512. As an overall comment, I would like to compliment the staff on adapting to and responding to an extremely difficult situation. The application of geological, hydrological, and modelling science has been stellar. The physical science and application of that science to develop a management approach that optimizes multiple considerations yet maintains the objective to meet the statutory requirement of "reasonably stable" groundwater conditions has been well used.

My concerns with the notice and justification is how environmental impacts from groundwater over appropriation and over pumping are characterized. The science and data concerning many of the purported impacts is significantly less clear than the physical change in groundwater levels. The environmental impacts of groundwater declines have not received as rigorous evaluation as the physical changes in groundwater levels. It appears that the Department has relied almost solely on the groundwater study and model to estimate impacts rather than independently evaluate the ecological impacts separately. **I am not arguing that groundwater pumping beyond recharge does not take from discharge to springs and streams and ET, I am arguing that over the last three decades of over pumping there are only modest signs of ecological effects. The greatest effect has been reduced groundwater storage and impacts to domestic wells in areas of significant concentration of pumping.**

Thus, it appears that there is an assumption that there is a one-to-one relationship between groundwater pumping and environmental impact. This is particularly acute when the Notice states **"the springs, streams, and Malheur Lake ecosystem services...greatly depend on groundwater"** in multiple places in the Notice. I believe this repeated statement is not supported by available information.

There is information about the Harney Basin resources that is not referenced by OWRD in their Notice of Proposed Rulemaking or Staff Report to the Commission. I would like to highlight the omissions in this letter and attachment as further explanation.

Relevant Ecological Information

There have been a number of recent ecological studies specifically looking at the aquatic resources in the Harney Basin. It is unfortunate that none of these works have been used by OWRD in the evaluation of impacts from groundwater pumping. It is recognized that OWRD does not have aquatic biologists on staff, however the information is available and should be considered.

The primary evaluations of impacts of declining groundwater and documentation of groundwater dependent ecosystems have been conducted for the Nature Conservancy (TNC) and used in the place-based planning effort. TNC provided evaluations of Macroinvertebrate communities in springs¹ and groundwater dependent vegetation². Additionally, Research on Malheur Lake has been summarized in a water management tool by a USGS scientist³. Research on the changes in the fish fauna of the Harney basin was conducted by USGS scientists in recent years as well.⁴

There is important information available about the ecological relationships of aquatic life that has not been relied on to assess the ecological impacts of groundwater pumping.

Spring Flow Impacts

The USGS/OWRD groundwater study acknowledges that there is limited information on spring discharge, however the authors of the groundwater study could not demonstrate that groundwater levels have affected spring flow. They projected spring flow as relatively stable from the earliest measurements (1907) to the present (2017) for the few springs that have measurements. One spring of concern on the Malheur National Wildlife Refuge (Sodhouse Spring) has lost flow in recent years, yet the groundwater study reports: “The large variability in discharge at Sodhouse Spring could indicate it lies a short distance from its recharge source, is largely influenced by water-table fluctuations caused by variable stage in the nearby Donner und Blitzen River,

¹ Mazzacano, Celeste A. 2018. Macroinvertebrate Communities of Springs in the Malheur Lakes Basin. Report for The Nature Conservancy. December 18, 2018. 27 p.

² Albano, Christine M., Blake Minor, Zach Freed, Justin L. Huntington. 2020. Status and Trends of Groundwater Dependent Vegetation in Relation to Climate and Shallow Groundwater in the Harney Basin, Oregon. Publication No. 41280. March 2020. Division of Hydrologic Sciences, Desert Research Institute and The Nature Conservancy in Oregon. 45 p. with appendices

³ Smith, Cassandra D. 2025. Managing water for birds—A tool for the Malheur National Wildlife Refuge, southeastern Oregon. U.S. Geological Survey Scientific Investigations Report 2025–5024. 21 p.
<https://doi.org/10.3133/sir20255024>.

⁴ Laramie, Matthew B., J.B. Dunham, F.H. Mejia, E.D. Heaston, and P.A. Bisson. 2023 Fishes of Harney Basin Revisited: An Assessment of the Distribution of Native and Introduced Fishes over a Half Century. *Northwestern Naturalist*. 104:83-98.

responds to multi-year precipitation patterns, and (or) discharges from a highly-transmissive portion of the groundwater system (Gingerich and others, 2022)."

The Double O portion of the Malheur National Wildlife Refuge is dependent on a number of springs that support wetland areas and whose flow is diverted to irrigate wet meadows. The USGS/OWRD Groundwater study cites: "...spring discharge in the western region (Warm Springs Valley) lowlands are similar to estimates made nearly a century ago by Piper and others (1939) and groundwater-level measurements in the northern region (Silvies River area) indicate low-permeability sediments and shallow recharge from streams and floodwater have likely buffered the response of the shallow water table (and ET) to pumping at depth." The mischaracterized certainty about impacts to springs is based solely on a number of presumptions about the groundwater sources and connections to springs. The multitude of springs in the uplands will not be affected by groundwater declines since there is very limited groundwater development in the uplands. Others have not shown a measurable response for more than a century, only partially because of a lack of continuous records.

The clearest statement about the impact to springs from groundwater pumping is that further groundwater level declines may affect spring flow.

Migratory Bird Impacts

The characterization in the Notice of Proposed Rulemaking that continued groundwater level declines will impact the migratory bird populations ("**springs and streams are relied upon by roughly six million birds that fly through the Pacific Flyway each year**") that use the basin as resting, nesting and feeding areas simply conflates the impacts of climate change to surface water flows with groundwater declines. The spring freshet from the Blue Mountains and Steens Mountain creates the spring bird habitat and at the same time recharges the groundwater from natural flood flows and flood irrigation⁵. Combined, spring flooding and flood irrigation account for two thirds of the recharge to the lowlands. The model for water management for birds is dominated by stream flow measurements and estimates. While climate change creates more rapid snowmelt and a shift from snow dominated to rainfall dominated stream flow will affect wetland habitats. The changes and threats to spring migratory birds is loss of flooded wet meadow and riparian habitat, neither of which are directly caused by lowering groundwater levels⁶.

⁵ Donnelly, J. P., Jensco, K., Kimball, J. S., Ketchum, D., Collins, D. P., & Naugle, D. E. 2023. Beneficial "inefficiencies" of western ranching: Flood-irrigated hay production sustains wetland systems by mimicking historic hydrologic processes. bioRxiv. <https://doi.org/10.1101/2023.12.10.571036>

Donnelly, J. P., Collins, D. P., Knetter, J. M., Gammonley, J. H., Boggie, M. A., Grisham, B. A., Nowak, M. C., & Naugle, D. E. 2024. Flood-irrigated agriculture mediates climate-induced wetland scarcity for summering sandhill cranes in western North America. Ecology and Evolution, 14, e10998. <https://doi.org/10.1002/ece3.10998>

⁶ Donnelly, J. P., Moore, J. N., Casazza, M. L., & Coons, S. P. 2022. Functional Wetland Loss Drives Emerging Risks to Waterbird Migration Networks. Frontiers in Ecology and Evolution, 10, 1-18. <https://doi.org/10.3133/ofr20211087>
Haig, S.M., Murphy, S.P., Matthews, J.H. et al. 2019. Climate-Altered Wetlands Challenge Waterbird Use and Migratory Connectivity in Arid Landscapes. Sci Rep 9, 4666. <https://doi.org/10.1038/s41598-019-41135-y>

The claim that groundwater declines have a measurable effect on spring migrant bird populations is unsupported by any evidence.

Impacts to Malheur Lake

In a similar vein, groundwater level declines have not had a measurable effect on Malheur Lake. The lake level is well predicted by previous year's lake level and runoff from Donner und Blitzen River. The relationship was developed in a PhD dissertation evaluating the common carp population in the lake⁷. The USGS/OWRD groundwater study determined that only 105 acre-feet/year of groundwater entered the lake and 47 acre-feet/year of groundwater left the lake. The lake is not seriously affected by groundwater level declines. While Harney Lake is more affected by groundwater declines with the Weaver Springs cone of depression to the north, the loss of groundwater was estimated at 25% of the inflow of groundwater. Harney Lake has historically and currently is filled by surface water during high flow events into Malheur Lake flowing through Mud Lake.

There is no documented adverse environmental effect of groundwater declines affecting Malheur Lake.

Further Complications to Evaluating Aquatic Ecological Effects from Groundwater Levels Alone

The evaluation of effects on streams is also very difficult. The primary gaining reach of the Donner und Blitzen River is also the reach of river with more than 12 water diversion points. It is unlikely that the upper Blitzen has significantly altered base flow contributions to the lowland reach of the Donner und Blitzen River. Impacts to flow are difficult to separate from base flow changes and surface diversions.

The complex and historic alteration of streams in the basin have altered the relationship between groundwater and surface water. Draining "swampland" has occurred since the 1870's. Lower Silver Creek has been extensively altered, draining Silver Lake (a large wetland complex). The lower Blitzen River has been channelized for more than 13 miles to "drain swamps". The lower Blitzen River stream channel has downcut extensively into the floodplain lowering the shallow groundwater level. These impacts from physical alteration have only exacerbated the ability to dissect the effects of groundwater level declines but have effects regardless of groundwater level changes from pumping.

I recognize that the complexity of the problem with water resource management is constrained by the tools available in law. I also recognize that those tools have changed radically in the last few years. Since the Harney Basin is the guinea pig for applying the new tools, it should be important to make sure that the characterization of the issues facing the community are clear and well supported. The Water Resources Commission needs to have a clear idea of the full range of real impacts when they consider the proposals put before them.

⁷ Pearson, James B. J.R. Bellmore, and J.B. Dunham. 2021. Controlling invasive fish in fluctuating environments: Model analysis of common carp (*Cyprinus carpio*) in a shallow lake. *Ecosphere* 13(5): <https://doi.org/10.1002/ecs2.3985>

There are serious impacts to agriculture and domestic well owners from declining groundwater levels and the goals of a stable and sustainable groundwater pumping regime are critical for the future.

Suggestions

There are a number of significant uncertainties identified by the authors of the USGS/OWRD groundwater study that include:

- The USGS/OWRD groundwater study did not evaluate the response of the hydrologic system to changes in recharge induced by future changes in precipitation or land cover. Projections from global climate models for the Pacific Northwest indicate little change in annual mean rainfall, but bigger changes in 1) average annual temperatures, 2) in the timing of streamflow related to changing snowmelt and 3) altered forests due to increasing wildfire risk, insect and disease outbreaks, and longer-term shifts in forest types and species⁸. The effects of these changes on future recharge estimates are unknown but potentially significant to future estimates of groundwater availability. The effects on the hydrologic system from these potential changes should be investigated.
- Areas where additional monitoring well installations would be particularly useful include Bear Valley, Donner und Blitzen River floodplain, Sage Hen Valley, the upper and lower Silver Creek floodplains, and the flank of Steens Mountain.
- An increase in the number of stream gages would help improve estimates of freshet volume and potential recharge in the Harney Basin lowlands. Only half of the surface water draining Steens Mountain is currently gaged. An improved understanding of the contribution of some of the larger intermittent streams (including Poison and Rattlesnake Creeks) to the freshet pulse would be extremely valuable.
- Flow measurements from springs, particularly the large springs in Warm Springs Valley, would be particularly helpful in understanding long-term system response to pumping and to climate fluctuations and trends. Since there is only sporadic data on spring discharge, a program to systematically measure stream- and spring-discharge particularly in the Warm Springs Valley would reduce the reliance on model estimates.
- A regular evaluation of the status of phreatophyte vegetation using the methods developed by the Desert Research Institute on at least the six-year frequency of regulatory adjustments would reduce speculation on the effects of ET.

⁸ Mote, P., Snover, A.K., Eigenbrode, S.D., Glick, P., Littell, J., Raymond, R., and Reeder, S. 2014. Chapter 21—Northwest, in Melillo, J.M., Richmond, T.T.C., and Yohe, G.W., eds., *Climate change impacts in the United States—The Third National Climate Assessment: U.S. Global Change Research Program*, p. 487-513.
<https://doi.org/10.7930/J04Q7RWX>

Considering the impact of the proposed regulatory regime on the Harney County community, I would suggest the Commission:

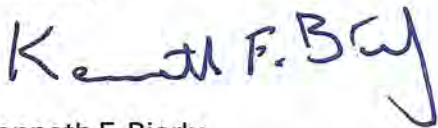
- Consider with community leaders and taxing bodies (school districts, hospital, County government) the real impact of the front-loaded curtailment and explore what alternatives may achieve both groundwater sustainability and community resilience.
- Work with the Oregon Legislature to adjust the Harney Basin Domestic Well Fund to make it proactive, available before impact. If the model can predict which wells will be impacted, use the model to identify eligible wells for remediation before they go dry.

I recognize that reductions in groundwater pumping need to be addressed. How that occurs and what effects the proposed curtailment has are extremely important. The situation in the Harney basin is relatively unique; it is a closed basin for all intents and purposes; the economics of the County are tied directly to the use of irrigation water, the agricultural economy has a one-to-one relationship with groundwater pumping, and the community has experienced a previous economic shock by loss of a natural resource economic base.

There is a strong sentiment in the community that by over allocating water rights, the State has an obligation to assist in the remedy in a more substantial manner than regulation. Overstating the environmental impacts does not help with the community understanding that will be necessary to support the state efforts.

Please consider the information presented both in this letter and the attachment. I would be pleased to provide a full explanation of the issues as I see them if you wish.

Sincerely,

A handwritten signature in blue ink that reads "Kenneth F. Bierly". The signature is fluid and cursive, with the first name "Kenneth" and last name "Bierly" clearly legible.

Kenneth F. Bierly
2308 Ptarmigan St. NW
Salem, OR 97304

Comments on” Need for the Rules” as drafted by OWRD in Notice of Proposed Rulemaking Chapter 690 Division 512

The document “Need for the Rules” includes a description of groundwater development that reflects the information developed during the USGS/OWRD groundwater study as published in a series of documents (See Groundwater Study Documents Listed below). The legal rationale for designation of the Critical Groundwater Management Area (CGMA) is well described by Boschmann (2024) by providing findings against the criteria for establishing a CGMA.

The growth of groundwater agriculture in the Harney Basin occurred with OWRD permitting. The narrative does not stress that there was a gross overallocation of groundwater permitting by the agency.

Context for These Comments

Development of the Oregon Integrated Water Resource Strategy (2012 & 2017) brought awareness of the lack of information on the groundwater aquifers in Oregon and the status of groundwater in many parts of the state. The community conversation in the Harney Basin about groundwater conditions initiated in 2015 and culminating in the classification of the Greater Harney Valley Groundwater Area of Concern in 2016 brought a spotlight on both groundwater management in the state and initiated a series of activities to address the situation. One condition of the classification was that the classification would be reconsidered within a year following the completion of a groundwater study of the basin. A joint USGS OWRD groundwater study was initiated and completed in late 2022 and 2023.

In 2021 the Department conducted a Groundwater Concerns Analysis (Scandella and Iverson, 2021). The report identified that there are significant portions of the state of Oregon with either significant concern or concern about groundwater declines. There are some 410 Townships with significant concerns, a third fall entirely outside of existing Groundwater Restricted Areas. Over 80% of applications for groundwater permits and limited licenses since 2010 are in areas of concern or significant concern, and 80% of these applications were approved or proposed for approval (79% in areas of significant concern and 83% in areas of concern, versus 81% statewide). These results from the 2021 Oregon Groundwater Resource Concerns Assessment indicate that the conditions of the Harney Basin are not unique and the permitting process was making the issue more acute.

In December of 2021 OWRD convened a RAC to consider the development of administrative rules governing the designation of Critical Groundwater Management Areas. The rules were proposed to reflect the statutory change of 1991. The Department held 5

RAC meetings after a hiatus in 2022. After significant input and deliberation, the Rules were adopted by the Oregon Water Resources Commission in September 2023.

In fall 2022, OWRD held several outreach meetings around the state to gather public input on the current process for issuing new groundwater rights, including ideas for improving the process. In April 2023, OWRD convened a Rules Advisory Committee (RAC) to provide input on the draft rules. The RAC met eight times between April 2023 and January 2024. The new rules will result in fewer permits being issued for new groundwater uses. The rules are applied when evaluating a new use application, OWRD is looking to determine whether water is available for further appropriation, including:

- Determine if groundwater levels are reasonably stable.
- Prioritize existing water rights over new groundwater rights that will interfere with surface water rights.
- Confirm the target aquifer is capable of physically producing the requested new rate of use.

The rules were adopted by the Water Resources Commission in September of 2024.

With these changes in the rules governing administration and management of Oregon groundwater resources, the Harney Basin became the trial for implementation of a new more protective approach.

As a part of the 512 Rulemaking OWRD developed a Groundwater Report for the Harney Basin Critical Groundwater Area (Boschmann, 2024). The report makes findings focused on groundwater levels against the criteria for designating a Critical Groundwater Management Area. The report is specific and focused on the criteria and the data that supports the findings.

In May of 2025, OWRD filed “Notice of Proposed Rulemaking including statement of need and fiscal impact”. The bulk of the comments pertain to statements made in the section “Need for the Rules”.

Groundwater Conditions and the Harney Basin Groundwater Model

While the documentation of groundwater conditions in the Harney Basin is clear and is specifically compared to the administrative rule language to establish a Critical Groundwater Management Area in the “Groundwater Report for the Critical Groundwater Area Rulemaking” by Boschmann (2024), the description of the impacts of the overallocation and over pumping becomes more generic and less specific.

There has been significant use of the physical model of groundwater in creative and novel ways to evaluate the groundwater levels and responses to different management

approaches. The outputs of the model have been used to show groundwater levels and decline conditions (change rates) under different pumping regimes from different subareas. The model has been used to evaluate subarea treatments, overall achievement of “relatively stable conditions” and changes to evapotranspiration (ET) and discharge to springs and streams. Groundwater levels have been projected and compared to well depths to estimate impacts to domestic wells (as can be done for other well impacts).

The groundwater model has been used to optimize the amount of pumping given outcome objectives that include:

- Basin-wide stability of groundwater levels in 30 years (stability measured as 0 feet/year decline as calculated using the median value)
- Reduction of permitted use to actual historical use and at a rate of 2.5 acre-feet/acre/year
- Distribution of Permissible Total Withdrawal (PTW) to each of 7 subareas

The PTW criteria are to be implemented in 6-year increments over a 24-year period with the majority of curtailment in the first two increments. A special case is made for the Weaver Springs area where PTW will be implemented in the first two increments (75% first curtailment and 25% second increment).

The rigor and detail of the management program and expected (modeled) outcomes has been extensive and complex as it relates to groundwater levels and changes in those levels. The science supporting the modeling and the error in modeling is proposed to be evaluated during implementation through an “adaptive management” review that checks whether the actual change in groundwater conditions as determined by monitoring reflects what has been modeled and set in the rules. The adaptive management approach provides for adjustment for situations where either over curtailment or under curtailment occurs. The criteria for measurement ranges for the determinations are specific and clear.

Questions of Impacts

I argue that there should be as much rigor to the description of impacts from the over pumping as there is in evaluation of groundwater levels. Only by matching the impacts with the proposed remedies will there be the ability to determine the effects other than the physical model results of groundwater levels.

Impact on Domestic Wells

Impacts to domestic wells was identified as early as 2016 in the place-based planning process. At that time, the collaborative was told that the response from OWRD to people concerned about loss of domestic wells had the responsibility to “chase the water”.

Recognizing that putting the entire onus on well owners was a difficult burden, the Collaborative took two actions, First, they wanted to know how widespread the issue was. Second, they wanted to find a way to help domestic well owners.

The collaborative found resources to better understand the issue. The Work Group focused on domestic well impacts and worked with the OSU Survey Research Center to develop a survey of all domestic well owners in the County. The 2017 survey was sent to some 1200 domestic well owners. The results from a 47% return determined that nearly 1/3 had modified their wells to ensure a continuing supply of potable water. The full report of the survey is attached. Only a fraction of the modifications were because of lowering groundwater levels. Many of the modifications were because domestic wells were older and constructed to less rigorous standards.

To date, the Department has received notification of 18 “dry wells”. With declining groundwater levels over the last three decades, it is surprising that there have not been more.

To address the recognized impacts, the collaborative worked with State Representative Owens and the Oregon Legislature to develop legislation to provide financial assistance to landowners experiencing a loss of domestic water. Legislation was enacted during the 2021 Oregon Legislative Session and funded at that time at \$1,000,000 to assist Harney Valley domestic well owners to mitigate impacts from lowering groundwater levels. The Department did not set the program up until 2024 and, to date, only 7 landowners have been awarded cost share funds (with another 7 being funded from the Statewide Well Remediation Fund).

The projected impact to domestic wells is based on the current depth of domestic wells and predicted groundwater level declines. This assumption results in a “worst case” scenario. The assumptions around the potential impacts to domestic wells should be explicitly stated.

It is clear that domestic wells have been and will be affected by declining groundwater levels. The implied precision of affected wells is based on the simple math of the difference between domestic well depth and projected groundwater levels. The proposal of OWRD to implement more severe curtailment in the Weaver Springs area will reduce the potential effect on domestic wells. There remains the question of whether it is legitimate to identify the future impacts based on the nature of existing wells when the responsibility to “chase the water” is ignored. It is clear that there is an inequity between irrigation and domestic well uses, however all irrigators that live in the basin also have domestic wells.

The Department has the analytical tools to develop a proactive approach to addressing impending loss of potable water. The model can identify on a given increment of time the likely wells that may be impacted from projected groundwater declines and a program could be developed to address those wells before potable water is lost. The only thing preventing such an approach is legislative approval of such a program. Such a program could help to provide community unity instead of division.

It seems that the model could help to build a program to avoid conflict rather than remedy impact. A more nuanced assessment of the impact of the proposed curtailment program would look at the history of landowners addressing domestic well impacts on their own as well as the history and future of the Harney Domestic Well Fund and the Statewide Domestic Well Fund as mitigating measures and modifications that could be suggested to the Oregon Legislature.

Impact to Springs

Spring discharge is dominated by predominantly modern water, especially those springs in the uplands and those springs at the margin of the uplands and lowlands. Springs in the Warm Springs Valley and around Harney Lake express ancient (pre-modern) water “which likely reflects the large distance between springs and the major sources of recharge” (Gingerich and others, 2022). In discussing the Warm Springs Valley springs, Gingerich and others (2022) states that “spring flow has not changed appreciably since the early 1900s”. Garcia and others remark that “Considering the variability noted by Piper and others (1939) and springflow measurement accuracy of about 15 percent (Oregon Water Resources Department, 2020), differences between 2017 and early 1900s springflow in Warm Springs Valley ***likely reflect climate variability and (or) management of irrigation diversions rather than nearby groundwater development.***” (emphasis added)

The Ecological Work Group of the Harney Basin Community-Based Groundwater Planning group describes in detail the springs of the Harney Basin. The description includes “There are 2,858 springs in the Harney Basin overall (Figure 1), but most are found at high elevations (above 4,200 ft MSL). Only 18.5% (528) of all springs in the basin are within the lower-elevation boundary of the GHVAC” and the bulk of those are at the edge of the uplands-lowlands boundary (Figure 1). The authors continue “Published data about Harney Basin Spring characteristics are scarce. Information about spring flow is available for only five springs in the basin: Sodhouse Spring (USGS NWIS Station ID: 10401600), Page Spring, Frenchglen Warm Spring, Five Mile Springs, and Knox Springs (Mayer et al. 2007).”

Exploring the impact of groundwater declines on spring discharge, the authors of the document state “Future monitoring is needed in the Harney Basin to detect changes in spring discharge due to anthropogenic or climactic influences. Extending the period of record for the five springs with existing measurements is important for developing a long-term dataset; however, it is not sufficient. Other ecologically important springs, despite having no pre-existing discharge data, should be monitored to develop an understanding of long-term trends. For example, the ecologically significant and groundwater-dependent Stinking Lake relies almost entirely on spring discharge to support habitat for rare aquatic species and migratory shorebirds. This spring could be threatened by groundwater development upgradient of the lake within the Silver Creek Basin; however, no data currently exist to determine if spring discharge has changed over time.”

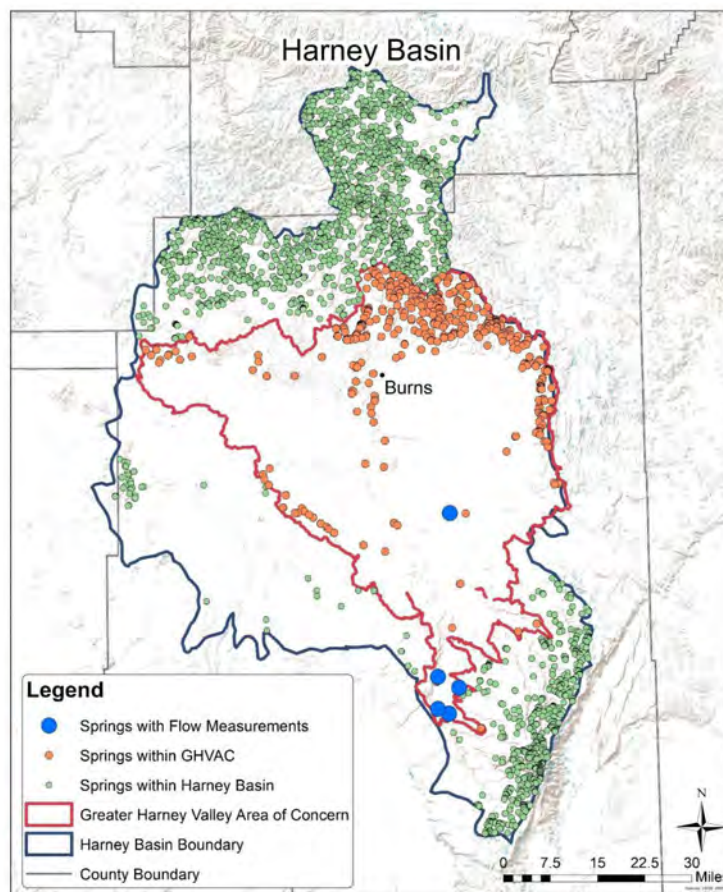


Figure 1: Springs in the Harney Basin (from Ecological Work Group Phase 1 (Groundwater) Step 2 Information/Groundwater Dependent Ecosystems)

The Statement of Need is significantly less careful about the characterization of potential impacts from further groundwater declines. The majority of springs are in the uplands and have short flow paths unlikely to be affected by groundwater pumping. Springs on the edge of the GHVGAC will respond most likely to local pumping and not all will likely be affected. The USGS report is clear that there is not a discernable effect on the Weaver Springs springflow attributable to groundwater pumping. The overgeneralization that “reductions in springs and stream flows will also decrease the availability of water and vegetation for domestic livestock grazing in the basin” ignores the fact that most summer livestock is placed in allotments in the uplands where springs are unlikely to be affected by groundwater pumping and wintering livestock following fall sales are typically fed from stock wells. It is broadly recognized that there is only minimal

knowledge about stock wells and they are treated similarly to domestic wells (shallow, less well cased or managed).

It is recognized that Sodhouse Spring has been affected in the recent past. Sodhouse Spring is characterized by Garcia (2023) as: “The large variability in discharge at Sodhouse Spring could indicate it lies a short distance from its recharge source, is largely influenced by water-table fluctuations caused by variable stage in the nearby Donner und Blitzen River, responds to multi-year precipitation patterns, and (or) discharges from a highly-transmissive portion of the groundwater system (Gingerich and others, 2022).”

Groundwater levels have declined over three decades but there is no corresponding record of reduction in spring flow. Recharge to the Warm Springs Valley springs is not fully known. Barnett (2018) identified three alternative recharge mechanisms for the springs in the Warm Springs Valley.

Neither the Groundwater Report nor the Groundwater Budget indicate that historic groundwater development has affected spring discharge. Characterization that the proposed curtailment scheme will “result in less discharge to springs..” while technically true, portrays an impact beyond what history shows especially with the limited record of spring flow and lack of effective monitoring.

Impact to Stream Flow

Groundwater contributions to base flow in streams is most important in the lowlands where pumping is concentrated. Most of the base flow comes from the uplands. Garcia and others (2022) state: “About 51,000 acre-ft/yr (70 ft³/s) of base flow was estimated in lowland areas from three watersheds, but most of this flow likely originates from upland areas. The highest single-river base flow estimated on the lowlands is at the Donner und Blitzen River near Voltage streamgauge (about 46,000 acre-ft/yr [64 ft³/s]”. Gaining reaches of streams have been identified for the Donner und Blitzen River between Diamond Lane and Frenchglen. This reach also has at least 12 surface water diversions which complicated the impact determination. Gaining reaches on the Silvies River are on the East and West Forks where recharge is dominated by spring freshets and flood irrigation. In general there is higher base flow to streams off Steens Mountain than from the Blue Mountains or Stinkingwater Mountains.

The impacts to streamflow is complicated by surface water diversions, stream alteration, riparian alteration, beaver eradication, and other factors besides groundwater level declines.

Impacts to streamflow are complex and while there is likely contribution from groundwater declines, there are many complicating factors to be considered.

Impacts to Migratory Birds

The characterization that “six million birds that fly through the Pacific flyway each year are dependent on ”springs and streams” subject to impacts from declining groundwater levels ignores the fact that spring migratory flights of birds are timed with spring freshets from the uplands and flood irrigation. These processes are dominated by surface water conditions, while not disconnected from groundwater, highly independent of groundwater levels. There is no indication that groundwater development has diminished the migratory habitat. Changing climate has implications for spring freshet wetlands regionwide as described by Haig and others (2019) and Donnelley and others (2020, 2022). The importance of flood irrigation to spring migratory birds is well documented by Donnelley and others (2023, 2024).

There is no substantive evidence that declining groundwater levels are contributing to migratory bird habitat loss. It is inappropriate to suggest that groundwater development has affected the “six million birds that fly through the Pacific Flyway each year”.

Impacts to Malheur Lake

The contribution of groundwater to Malheur Lake is minimal at best. Garcia and others (2023) estimate a total of around 50 acre-feet/year of net groundwater input to Malheur Lake and less than 475 acre-feet/year contribution to Harney Lake. Pearson and others (2021) modeled the contributions to Malheur Lake and found that lake elevation and volume was predicted by the previous year lake level and Blitzen River discharge. Malheur Lake is dependent on surface runoff from the Donner und Blitzen River. The upper Blitzen is the least developed area of groundwater in the GHVGAC. It is widely acknowledged that Malheur Lake is surface water dependent. The recent Water for Birds model for Malheur Lake (Smith, 2025) is clearly dominated by surface water inputs.

There is no evidence that changing groundwater levels is affecting Malheur Lake. The Lake is affected by common carp and high turbidity, not impacted by declining groundwater levels.

Impacts to Evapotranspiration (ET)

It is a truism that pumping more than recharge will result in impacts to ET. The larger question is whether changed ET has a biological impact. The only evaluation of impacts to phreatophyte vegetation in the Harney Basin (Albano and others, 2020). The authors (Albano et al., 2020) found “Negative trends in vegetation vigor were most prominent in localized patches within mesic (Freshwater Marsh, Depressional Wetland, Riparian Woodland and Shrubland), and Agricultural Pasture and Hayland vegetation types. However, in aggregate, ranges of NDVI values for each vegetation type did not differ

substantially between the start and end of the study period.” They further found: “Site-specific analyses of field and remote sensing data identified transitions from mesic to dryland vegetation in the lacustrine fringe that appears to be in response to declining lake levels since the 1980’s of Malheur and Harney Lakes (Weaver West, Weaver, Malheur North). That said, the recent declines in groundwater levels observed in these areas could also be playing a role as lake levels and groundwater levels are inextricably linked to each other. Other field sites where trends in vegetation were evident (West Springs, Frenchglen) have limited evidence of groundwater declines and are places where monocultures of invasive species were observed and intensive vegetation management activities such as mowing, prescribed fire, invasive plant management, and manipulation of water levels are likely influencing vegetation trends. In places where both groundwater and vegetation declines are occurring (Malheur North and South), such management activities may be obscuring the connections between trends in groundwater depth and trends in vegetation. Establishing control areas where natural changes in vegetation in association with depth to groundwater can be monitored would help to alleviate these confounding factors of lake level changes and land management activities.”

The work by Albano and others (2020) provides a baseline for determining future changes to phreatophyte vegetation but did not demonstrate significant responses other than changes following the extreme flooding in the mid 1980’s, invasive species response, and surface water management effects.

While further pumping beyond recharge will affect ET, the ecological impacts are seemingly difficult to clearly demonstrate.

Economic Impacts

OWRD staff has relied on two studies of the potential economic impacts from groundwater curtailment. The academic work by Jaeger and others (2024) and the work contracted to ECONorthwest (2025). The Jaeger paper is interesting and links the physical groundwater model to a model of irrigator economic choices evaluating how profit seeking irrigators will respond to different controls. The researchers modeled 15 different control parameters (1-business as usual, 2-adoption of more efficient technology, 3-land idling (3 different scenarios), 4-taxing power use (3 different rates), 5-targeted declining wells (2 scenarios), 6-regulating back to 1992, and 7-regulating pumping rates (2 scenarios). This academic study, while interesting and useful in linking the physical model to groundwater pumping effects, explores solutions beyond the authority of the Water Resources Department. The study evaluates each proposal against changes to spring discharge, the number of dry wells, and change in annual farm profits. The evaluation by Jaeger is of little use other than

the development of a methodology to link the physical groundwater model to some measures of the economy, dominantly farm profit.

OWRD contracted with EConorthwest to explicitly link the proposed OWRD groundwater control program to the local economy with a specific link to impacts to the County economy and County tax revenues. EConorthwest evaluated the contribution of agriculture to Harney County economy and found that: “Harney County’s economy is reliant on agriculture within the county, but also fairly isolated from other economic opportunities.... **The percent reduction in groundwater use, correlates strongly to a similar percent reduction in the value of agricultural production and total economic output** (emphasis added).” Looking at the cumulative effect of the proposed groundwater reductions, EConorthwest found: “**Total annual agricultural value under post-policy conditions is \$82 million which is a \$42 million decrease from pre-policy conditions.**”

EConorthwest further evaluated the community economic effects using IMPLAN modeling which concluded: “**estimated total job losses to the county could be between 160 - 320 total jobs and losses to total economic output are estimated to be between \$22.4 - \$60.8 million.**” The analysis of impacts to County tax revenues concludes: “**Post-policy at the end of curtailment, total property tax revenues for the county could see a \$146,000 decrease in annual revenues—\$55,000 for the general fund, \$24,000 for hospitals, and \$66,000 for local schools.**”

While the authors estimate that the impacts will be scheduled equally over time, that is not what is being proposed. The impacts to the community will be the greatest in the first and second curtailment steps. The first curtailment will amount to 40% for all areas except for Weaver Springs where the curtailment will be 75%. The second step (six years later) in curtailment will add 30% curtailment to all subareas except for Weaver Springs where the curtailment will be an additional 25% curtailment meeting the total PWT for that area. The impacts to agriculture, the economy and the tax base is front loaded with the bulk of the impacts in the first six years of curtailment.

The economic impact will not be spread evenly over 24 years, it is front loaded, and the community should be made aware of that impact. The community needs to have the true impact information to plan for the effects on the community. The balance between eventual stable groundwater levels and community impacts is difficult but needs to be fully understood by all participants in the community as well as the Commission.

References

- Albano, Christine M., Blake Minor, Zach Freed, Justin L. Huntington. 2020. Status and Trends of Groundwater Dependent Vegetation in Relation to Climate and Shallow Groundwater in the Harney Basin, Oregon. Publication No. 41280. March 2020. Division of Hydrologic Sciences, Desert Research Institute and The Nature Conservancy in Oregon. 45 p. with appendices
- Bair, L.S., M. Flyr, and C. Huber. 2021. Economic assessment of surface water in the Harney Basin, Oregon. U.S. Geological Survey Open-File Report 2021-1087.
- Barnett, Halley J. 2018. Determining the Spring Water Provenance in the Warm Springs Valley Subarea of the Silver Creek Watershed in the Harney Hydrologic Basin, Harney County, Oregon. A report prepared in partial fulfillment of the requirements for the degree of: Master of Science Earth and Space Sciences: Applied Geosciences. University of Washington. March 2018. 89 p. plus appendices.
- Boschmann, Darrick E. 2024. Groundwater Report for the Harney Basin Critical Groundwater Area Rulemaking. Oregon Water Resources Department June 17, 2024. 19 p.
- Donnelly, J. Patrick, Sammy L. King, Nicholas L. Silverman, Daniel P. Collins, Eduardo M. Carrera-Gonzalez, Alberto Lafon-Terrazas, and Jonnie N. Moore. 2020. Climate and human water use diminish wetland networks supporting continental waterbird migration. *Global Climate Change Biology* 26: 2042-2059. <https://doi.org/10.3389/fevo.2022.844278>
- Donnelly, J. P., Moore, J. N., Casazza, M. L., & Coons, S. P. 2022. Functional Wetland Loss Drives Emerging Risks to Waterbird Migration Networks. *Frontiers in Ecology and Evolution*, 10, 1–18. <https://doi.org/10.3133/ofr20211087>
- Donnelly, J. P., Jensco, K., Kimball, J. S., Ketchum, D., Collins, D. P., & Naugle, D. E. 2023. Beneficial “inefficiencies” of western ranching: Flood-irrigated hay production sustains wetland systems by mimicking historic hydrologic processes. *bioRxiv*. <https://doi.org/10.1101/2023.12.10.571036>
- Donnelly, J. P., Collins, D. P., Knetter, J. M., Gammonley, J. H., Boggie, M. A., Grisham, B. A., Nowak, M. C., & Naugle, D. E. 2024. Flood-irrigated agriculture mediates climate-induced wetland scarcity for summering sandhill cranes in western North America. *Ecology and Evolution*, 14, e10998. <https://doi.org/10.1002/ece3.10998>
- ECONorthwest. 2025. The Economic Impacts of Groundwater Management in Harney County, Oregon. May 1, 2025. Prepared for: Oregon Consensus, Oregon Water Resources Department, and Division 512 RAC. 22 p. <https://www.oregon.gov/owrd/programs/policylawandrules/OARS/Pages/Division-512-Rulemaking.aspx>
- Haig, S.M., Murphy, S.P., Matthews, J.H. et al. 2019. Climate-Altered Wetlands Challenge Waterbird Use and Migratory Connectivity in Arid Landscapes. *Sci Rep* 9, 4666. <https://doi.org/10.1038/s41598-019-41135-y>

Huber, Christopher, Matthew Flyr, and Lucas S. Bair. 2022. Economic Benefits Supported by Surface Water in Eastern Oregon's Harney Basin. *Western Economics Forum*. 20(1): 30-42.

Jaeger, W. K., Antle, J., Gingerich, S. B., & Bigelow, D. 2024. Advancing sustainable groundwater management with a hydro-economic system model: Investigations in the Harney Basin, Oregon. *Water Resources Research*, 60. e2023WR036972. <https://doi.org/10.1029/2023WR036972>

Mucken, A. and B. Bateman, 2017. Oregon's 2017 Integrated Water Resources Strategy. Oregon Water Resources Department, Salem, OR.
https://www.oregon.gov/owrd/wrdpublications1/2017_IWRS_Final.pdf.

Pearson, James B. J.R. Bellmore, and J.B. Dunham. 2021. Controlling invasive fish in fluctuating environments: Model analysis of common carp (*Cyprinus carpio*) in a shallow lake. *Ecosphere* 13(5): <https://doi.org/10.1002/ecs2.3985>

Scandella, Ben and Justin Iverson. 2021. 2021 Oregon Groundwater Resources Concern Assessment. Oregon Water Resources Department. 27 p. plus appendices

Smith, Cassandra D. 2025. Managing water for birds—A tool for the Malheur National Wildlife Refuge, southeastern Oregon. U.S. Geological Survey Scientific Investigations Report 2025–5024. 21 p. <https://doi.org/10.3133/sir20255024>

Groundwater Study Documents

Beamer, J.P., and Hoskinson, M.D., 2021, Historical irrigation water use and groundwater pumpage estimates in the Harney Basin, Oregon, 1991-2018: Oregon Water Resources Department Open File Report No. 2021-02, 53 p. https://www.oregon.gov/owrd/wrdreports/OWRD_OFR_2021-02_Harney_Basin_METRIC_Irrigation_Use_Report.pdf

Boschmann, D.E., 2021, Generalized geologic compilation map of the Harney Basin, Oregon: Oregon Water Resources Department Open File Report 2021-01, 57 p. https://www.oregon.gov/owrd/wrdreports/OFR_2021-01_report.pdf

Garcia, C.A., Corson-Dosch, N.T., Beamer, J.P., Overstreet, B.T., Haynes, J.V., Grondin, G.H., Gingerich, S.B., and Hoskinson, M.D., 2022, Hydrologic budget of the Harney Basin groundwater system, Oregon: U.S. Geological Survey Scientific Investigations Report 2021-5128, 140 p. <https://doi.org/10.3133/sir20215128>

Gingerich, S.B., Johnson, H.M., Boschmann, D.E., Grondin, G.H., and Garcia, C.A., 2022a, Groundwater resources of the Harney Basin, Oregon: U.S. Geological Survey Scientific Investigations Report 2020-5103, 116 p. <https://doi.org/10.3133/sir20215103>

Gingerich, S.B., Garcia, C.A., and Johnson, H.M., 2022b, Groundwater resources of the Harney Basin, southeastern Oregon: U.S. Geological Survey Fact Sheet 2022–3052, 6 p. <https://doi.org/10.3133/fs20223052>

Gingerich, S.B., Boschmann, D.E., Grondin, G.H., and Schibel, H.J., 2024, Groundwater model of the Harney Basin, southeastern Oregon: U.S. Geological Survey Scientific Investigations Report 2024–5017, 104 p., <https://doi.org/10.3133/sir20245017>

Grondin, G.H., 2021, Methods and results for estimating groundwater pumped, returned, and consumed for non-irrigation uses in the Harney Basin, Oregon: Oregon Water Resources Department Open File Report 2021-03, 28 p. plus appendices

https://www.oregon.gov/owrd/wrdreports/OWRD_OFR_2021-003_Harney_Basin_non_irrigation_GW_use_report_stamped.pdf

Grondin, G.H., Boschmann, D.E., Schibel, H.J., and Scandella, B.P., 2021, Methods and results for estimating the hydraulic characteristics of the subsurface materials in the Harney Basin, Oregon: Oregon water Resources Department Open File Report 2021-04, 63 p. plus appendices

https://www.oregon.gov/owrd/wrdreports/OFR_2021-04_Harney_Basin_subsurface_hydraulic_properties.pdf

Schibel, Halley J. and Gerald H. Grondin. 2023, Methods and results for estimating 1930-2018 well pumpage in the Harney Basin, Oregon: Oregon Water Resources Department Open File Report No. 2023-01, 72 p. plus appendices https://www.oregon.gov/owrd/WRDReports/OWRD_OFR_2023_01.pdf

GROUNDWATER IN HARNEY BASIN: A QUESTIONNAIRE FOR RESIDENTIAL WELL USERS IN HARNEY BASIN

REPORT OF RESEARCH PROCEDURES AND RESULTS

Conducted by:
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PURPOSE OF STUDY

The “Groundwater in Harney Basin” study was conducted collaboratively by the Survey Research Center at Oregon State University (OSU-SRC) and the Harney Community-Based Water Planning Collaborative (Collaborative) from September 2019 through November 2019. The study was funded by the Oregon Watershed Enhancement Board. The purpose of this study was to obtain information from Harney Basin property owners about their residential wells. In particular, the Collaborative was seeking residential well quality and water flow information from the basin property owners in order to direct the development of groundwater management strategies. Harney Basin is a watershed area found primarily inside Harney County but the basin boundary extends beyond Harney County lines with some areas found to the north in Grant County, to the northwest in Crook County, and to the south in Lake County. The questionnaire asked about attributes of the residential well belonging to the property and about water flow and quality issues the well may be experiencing.

IMPLEMENTATION

Harney Basin encompasses a very large geographical area in southeastern Oregon with tax lots owned by Oregon basin residents as well as individuals residing outside the county. The objective of the study was to obtain information about the primary well, or observational unit, on tax lots in the Harney Basin. A census of all Harney Basin tax lots was desired. In order to identify the population to include in this study, a list of all basin property owners of Harney Basin tax lots, the sampling units, was delivered to OSU-SRC by the GIS coordinator for Harney County. If more than one property address was attached to an owner, the owner received a survey for each property. The mailing list originally included 1,294 records. OSU-SRC asked Oregon State University Printing and Mailing to process the list using the National Change of Address (NCOA) software available from the United States Post Office. NCOA software updates any address with a recent move request submitted to USPS and flags addresses that are incomplete and cannot be delivered as addressed. This resulted in 45 addresses flagged as undeliverable and 1,249 valid unique tax lot properties in the basin. The 1,249 was the sampled population to be surveyed. The questionnaire was sent to each uniquely addressed property owner in the basin region.

The survey was printed as a four-page booklet and administered to property owners in the population list via US mail. A prenotification letter signed by the members of the Collaborative that explained the objective of the survey and introduced the OSU-SRC as the data collection unit, was first mailed to basin property owners on September 6, 2019. After reviewing the list of property owners in the Harney Basin, it was discovered that a number of properties belong to a single owner. OSU-SRC adjusted the prenotification mailing so that these owners of multiple tax lots would receive only one prenotification letter to introduce the study instead of receiving the same letter for multiple properties. To do this, a sweep of duplicate mailing addresses was done prior to sending the prenotification letter and one record was chosen to receive the single prenotice letter.

The survey packet, mailed one week after the prenotification letter on September 13, contained the survey, prepaid return envelope and a cover letter with basin property information. Since the delivery or mailing address was often different than the basin property where the well is located, it was important to explain to the owner which property to refer to when answering the survey questions. In order to maintain confidentiality, it was decided that the best place to print the property address was on the cover letter that would accompany the survey. Every property in the population received a survey. A thank you/reminder postcard was mailed to all property owners one week later. The fourth and final contact with a replacement copy of the questionnaire, return envelope, and cover letter with merged basin property information was mailed to all non-respondents on October 11, 2019. The additional contact was made because research shows an increase in survey response rates associated with providing the individual with a replacement survey and cover letter which reinforces the importance of the individual's response to the success of the study.

A copy of recruitment letters is provided in Appendix A-1 and copies of the questionnaire is provided in Appendix A-2.

SURVEY RESULTS

RESPONSE RATES

Completed surveys returned to OSU-SRC by November 12, 2019 were entered into the response data set. Five-hundred seventy-four completed surveys were returned to OSU-SRC. The unadjusted response rate

for this study is $(574 \div 1249) \times 100 = 46.0\%$. OSU-SRC uses the American Association for Public Opinion Research (AAPOR) standardized outcome rate calculator for calculating adjusted survey response rates. Four AAPOR survey response rate calculations (RR1 – RR4) are available for use. For this study, we utilize the RR4 response rate calculation. The formula used to calculate the adjusted RR4 response rate is the following:

$$RR4 = \frac{(I + P)}{(I + P) + (R + NC + O) + e(UH + UO)}$$

where $(I + P)$ = the number of complete and partially completed records; $(R + NC + O)$ = the number of non-completed eligible sampling units; $(UH + UO)$ = the number of non-completed sampling units with unknown eligibility; and 'e' represents the estimated proportion of sampling units of unknown eligibility that are actually eligible. Essentially, the RR4 response rate adjusts for the ineligible sampling units by excluding them from the denominator. For example, those that are deceased ($n = 8$) or those that were in the mailing list but considered a duplicate or invalid property ($n = 4$) are considered outside the sampling frame (ineligible) for this study and therefore the denominator is reduced by 12. The RR4 calculator applies the proportion of sampling units that are not eligible (deceased and other outside the frame) to the sampling units with unknown eligibility. In this case, 'e' is equal to .98 and the adjusted RR4 response rate is 46.9%.

The return disposition codes, as seen in the survey codebook, are shown in Table 1. Table 2 shows the frequency for each return disposition that is applied to the response rate calculator.

TABLE 1: AAPOR RETURN DISPOSITION LABELS, DEFINITIONS, AND CODES

Disposition Label	Definition	Eligibility	Data Code
Nothing returned (UO)	Nothing known, not returned	Unknown	0
Complete (I)	50% - 100% of applicable questions answered	Eligible	1
Refusal/Break-off (R)	Implicit or explicit refusal, and 0% to less than 50% of applicable questions answered	Eligible	2
Undeliverable (UO)	Returned by USPS as undeliverable	Unknown	3
Deceased	Specifically named person deceased.	Not eligible	4
Outside frame, unable to respond, duplicate property address, and invalid property	All duplicates belonging to this address also marked unable to respond.	Not eligible	5

TABLE 2: RETURN DISPOSITION FREQUENCIES

Disposition	Frequency	Percent
Not returned	601	48.12
Completed/Partially completed	574	45.96
Refusal/Breakoff	38	3.04
Undeliverable	24	1.92
Deceased	8	0.64
Outside sample frame/Ineligible	4	0.32
TOTAL	1,249	100.0

A number of individuals owned multiple tax lots. Table 3 illustrates the number of individuals in the basin that own more than one tax lot (n=175) and the number that own a single tax lot (n=770). The 175 multiple owner cases made up 479 property owner records. Within the multiple address owner list are different levels of ownership—ranging from 2 properties to 12 properties owned by a single individual/entity.

TABLE 3: FREQUENCY IN POPULATION WITH SINGLE AND MULTIPLE BASIN PROPERTY OWNERS

Number of Properties	Number of Owners	Number of Addresses
Two	122	244
Three	24	72
Four	9	36
Five	10	50
Six	6	36
Seven	0	0
Eight	0	0
Nine	2	18
Ten	0	0
Eleven	1	11
Twelve	1	12
SUB TOTAL		
Known number of multiple tax lot owners	175	479
Known number of single tax lot owners	770	770
TOTAL	945	1,249

The population of property addresses within the Basin were delineated into regions/sub-basins based on Harney County records. These sub-basins were made available in the mailing list and merged with response data for analysis purposes. A map of the four Harney Basin sub-basin regions is available in Appendix D. Figure 1 illustrates the percent of the population belonging to each sub-basin and Figure 2 shows RR4 response rates per sub-basin (A=Silvies, B=Harney-Malheur Lakes, C=Donner and Blitzen, and D=Silver Creek).

FIGURE 1: PERCENT OF TAX LOTS IN EACH OF THE HARNEY COUNTY STUDY AREA SUB-BASINS

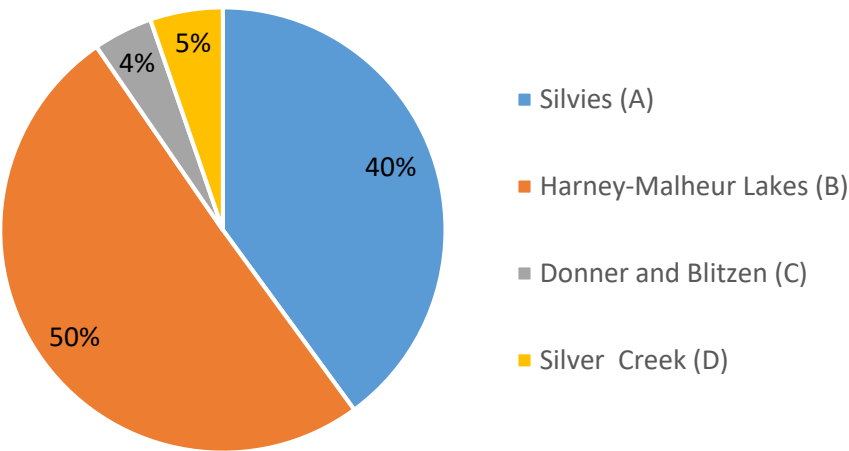
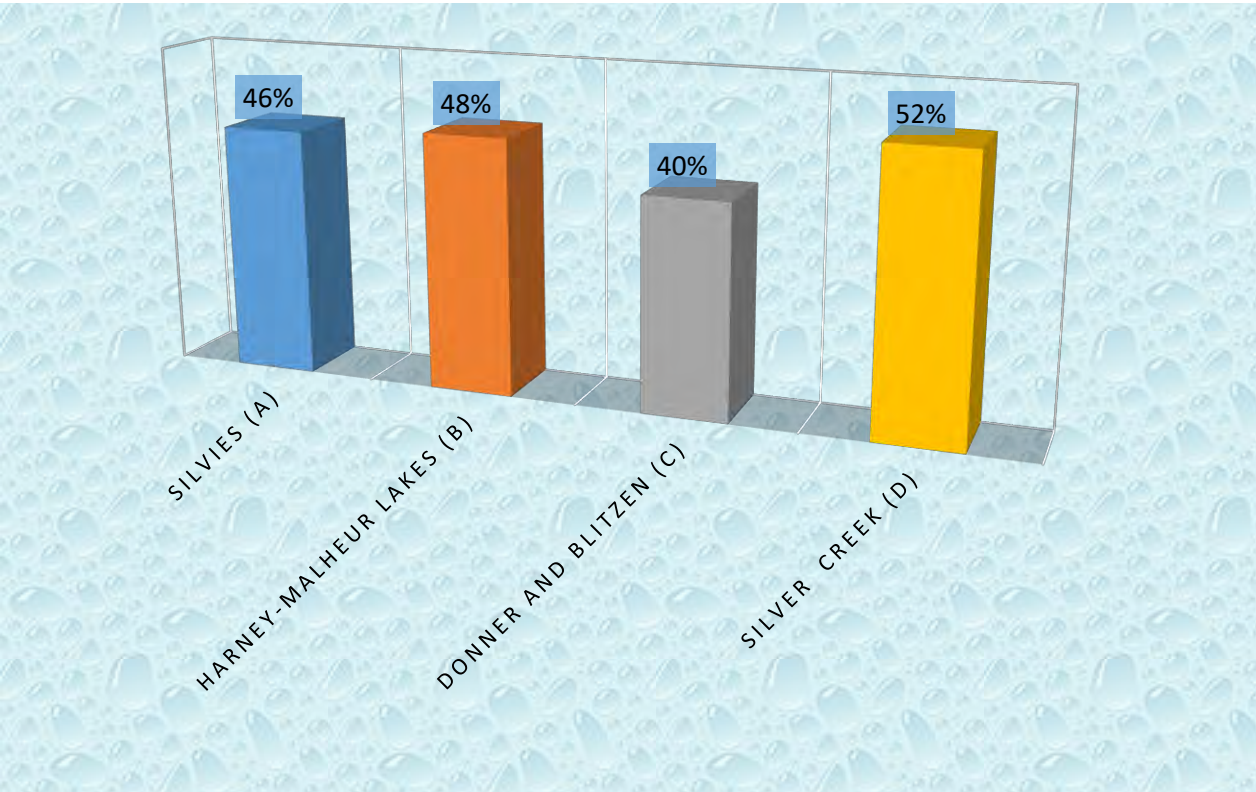


FIGURE 2: RESPONSE RATE (AAPOR RR4) BY SUB-BASIN

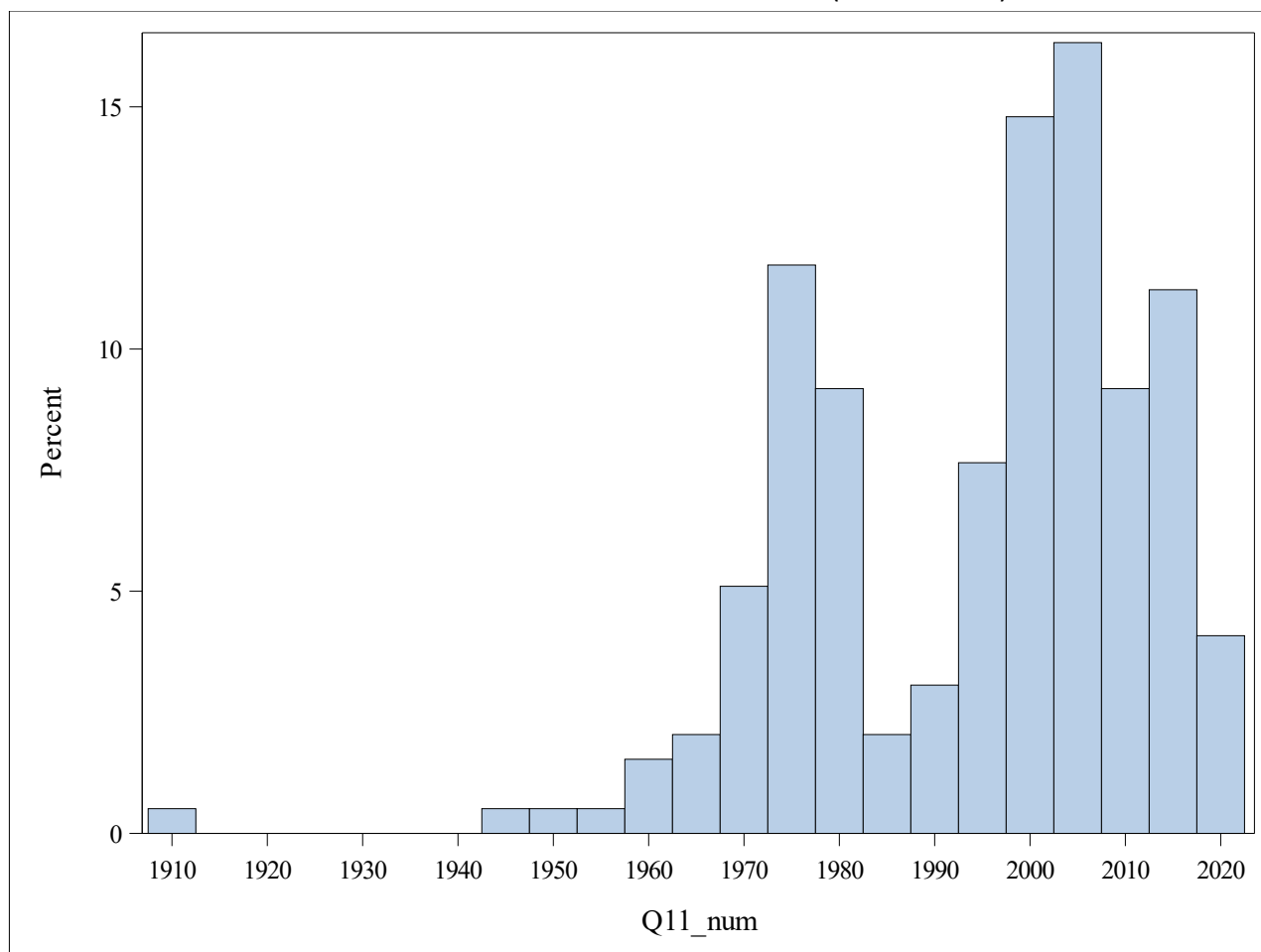


SURVEY RESPONSE DATA AND OUTPUT (RESULTS FROM APPENDIX C-1)

All closed-ended survey response data were entered into a survey response software file, downloaded into a spreadsheet, and merged with sub-basin codes from the mailing list. A copy of the data codebook is available in Appendix B and shows question labels, variable names, valid codes, skip patterns, and other survey formatting information. Two simple frequency outputs are available in this report: a simple frequency of all closed-ended questions for response data including some cross-tabulations of certain questions (Appendix C-1) and a cross-tabulation output of all closed-ended questions broken out by the four sub-basin regions (Appendix C-2). The results represent the 47% of the property owners that responded to this survey from the final population (mailing list) of 1,249 properties. It does not necessarily mean the results are from a random subset of this population. Recall that the original list of Harney County tax lots to be represented in this study consisted of 1,294 but after address validation, 45 records were removed.

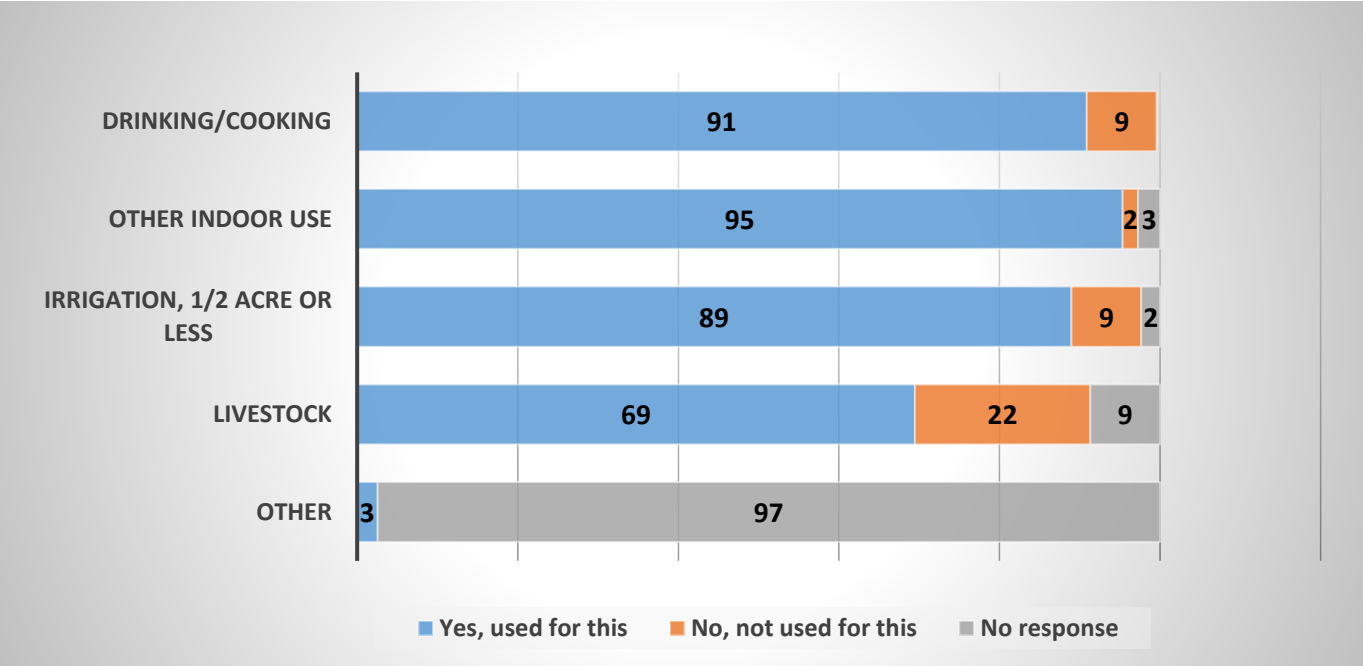
A description of results from a select number of closed-ended questions in the simple frequency analysis for all sub-basins follows. As a cautionary note, because of question order in the instrument, it is unclear if respondents indicated well performance information about a new or original well if the respondent indicated a new well was dug in Question 6_5. However, regardless of whether a new or original well is the response consideration, the respondent was asked to consider their “primary” well when answering the survey questions. Because of this approach, the individual question results can be interpreted to mean the condition for the primary well (either new or original). Figure 3 is a depiction of when respondent’s primary wells were installed, if known. Most wells were installed from 1970 and beyond with higher peaks of installation occurring during the early 2000’s.

FIGURE 3: KNOWN YEARS OF PRIMARY RESIDENTIAL WELL INSTALLMENT (QUESTION 11)



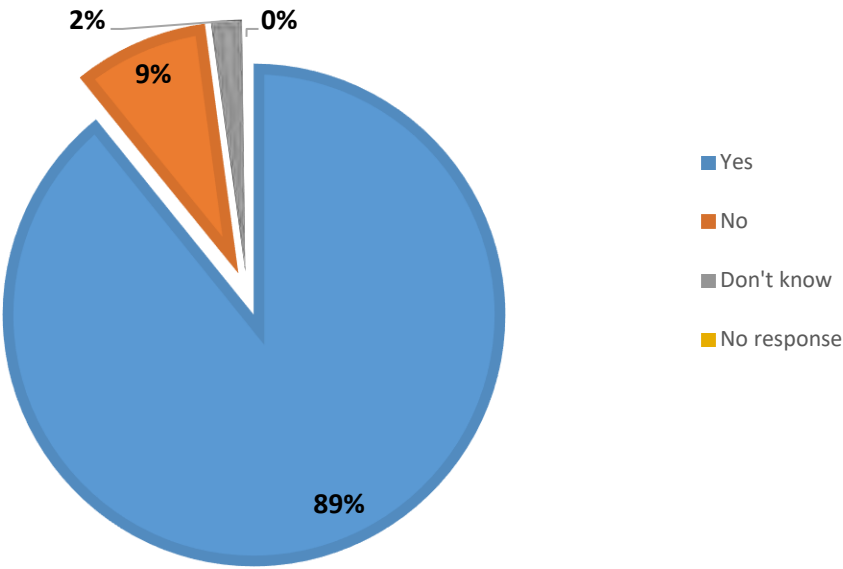
Appendix C-1 was referred to in summarizing the following statements. According to Question 1, 17% of respondents indicated that the property does not currently have a residential well on site. If respondents did not have a residential well on the tax lot, they were directed to the end of the questionnaire and no additional questions are answered. However, they were asked to provide a written comment in question 15 if compelled. The target population for this study consisted of Harney basin tax lot owners with a residential well on site. The definition of a residential well provided on the survey is one that is used for indoor drinking and cooking. If a respondent answered “yes” to question 1 (indicating a residential well does exist at the property) but reported the well is used for outdoor purposes (irrigation and/or livestock) only, question 1 was edited to “no.” Of the remaining 472 completed records with a residential well on site, the respondent was asked to indicate how the well is used (Figure 4, Question 3).

FIGURE 4 (QUESTION 3): PERCENT OF WATER USE TYPE FOR PRIMARY RESIDENTIAL WELL



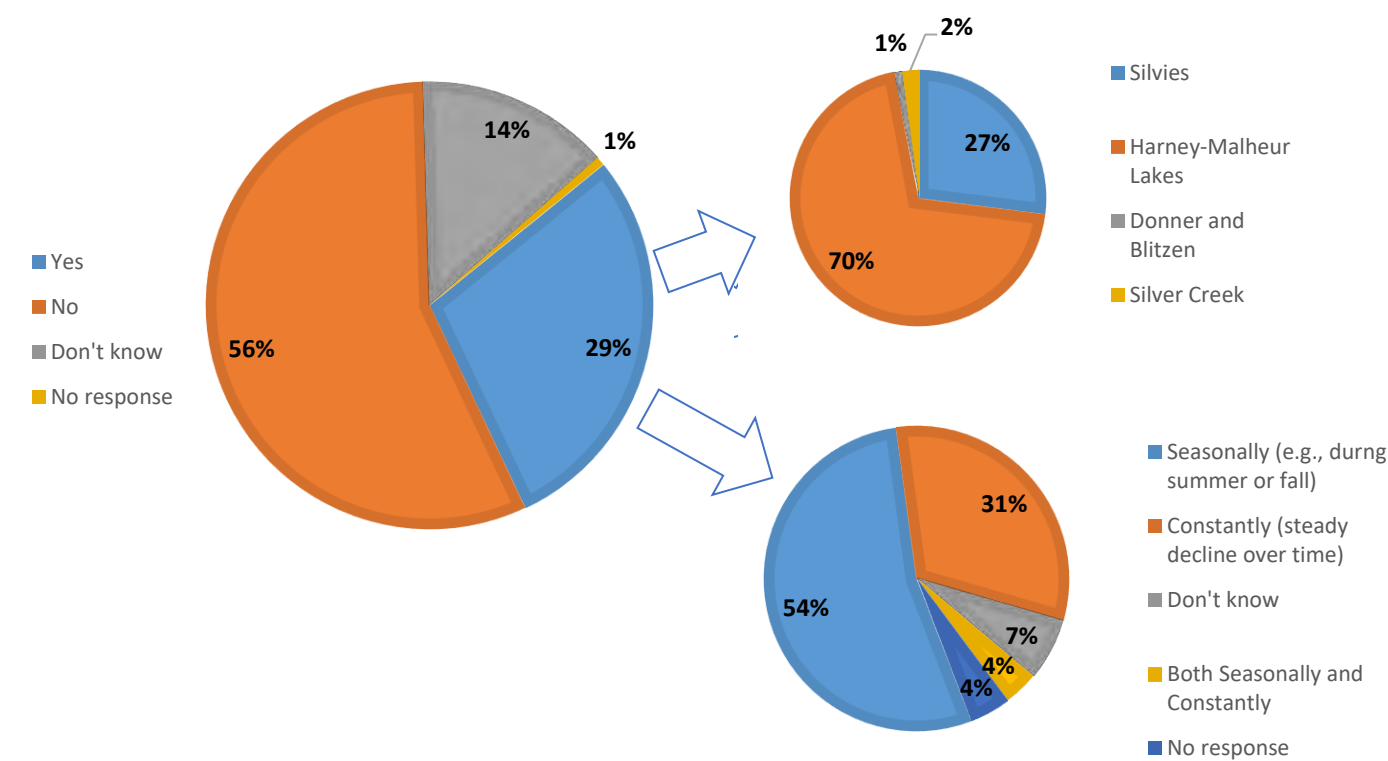
According to respondents, 89% of primary wells reported provide enough water to meet the needs/uses indicated in question 3 but 9% do not (Figure 5, Question 4).

FIGURE 5 (QUESTION 4): WELL PROVISION ENOUGH TO MEET NEEDS OF WATER USE?



When thinking about the last 10 years, 29% of respondents reported their primary residential well experienced a decline in yield or rate (Question 5). From those respondents who experienced a decline, 54% reported the decline as seasonal (example: during summer or fall), 32% as constant (example: steady decline over time), and about 4% reported the decline to be both seasonal and constant (Question 5a). In addition, of those wells that have experienced a decline, 70% are in the Harney-Malheur sub-basin, 27% are in Silvies, 27% in Silver Creek and 1% in Donner and Blitzen sub-basins (Figure 6).

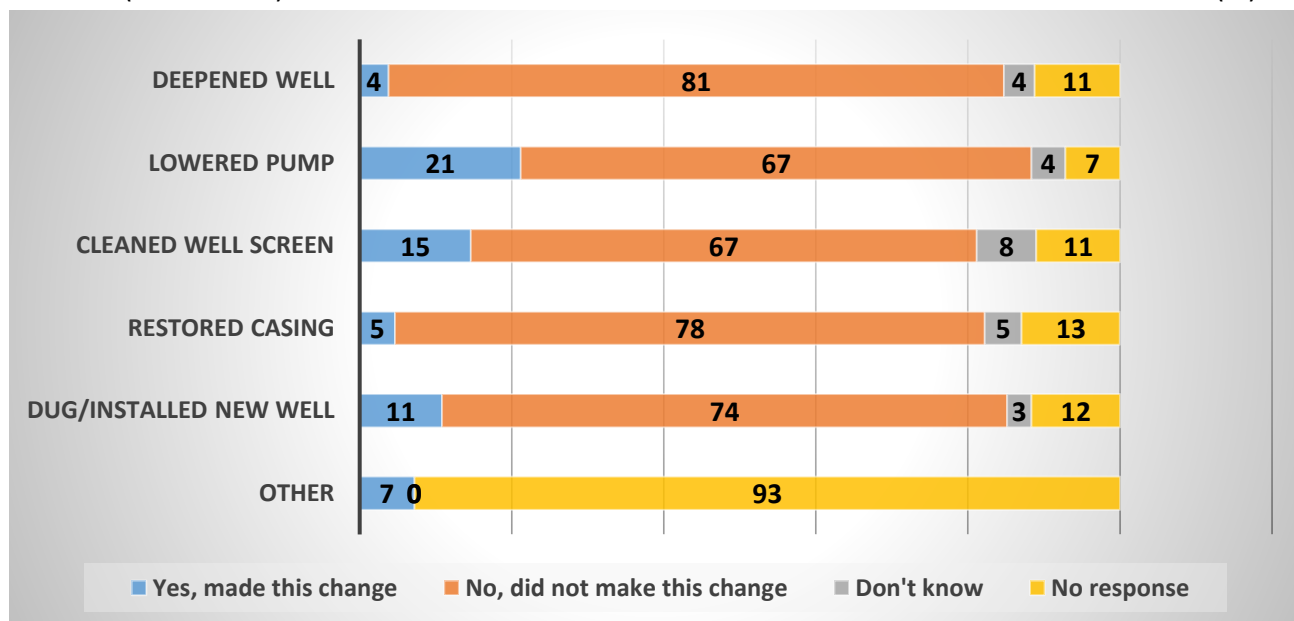
FIGURE 6 (QUESTION 5 AND 5A): HAS PRIMARY RESIDENTIAL WELL EXPERIENCED DECLINE IN YIELD OR RATE? OF THOSE THAT HAVE EXPERIENCED A DECLINE, WHAT KIND OF DECLINE HAS IT EXPERIENCED AND WHAT PERCENT OF EACH SUB-BASIN HAS EXPERIENCED A DECLINE?



An illustration of well depth is available for the combined conditions of a well not providing enough water (Question 4='No') or the well has experienced a decline in yield or rate (Question 5='Yes'), in Figure 13.

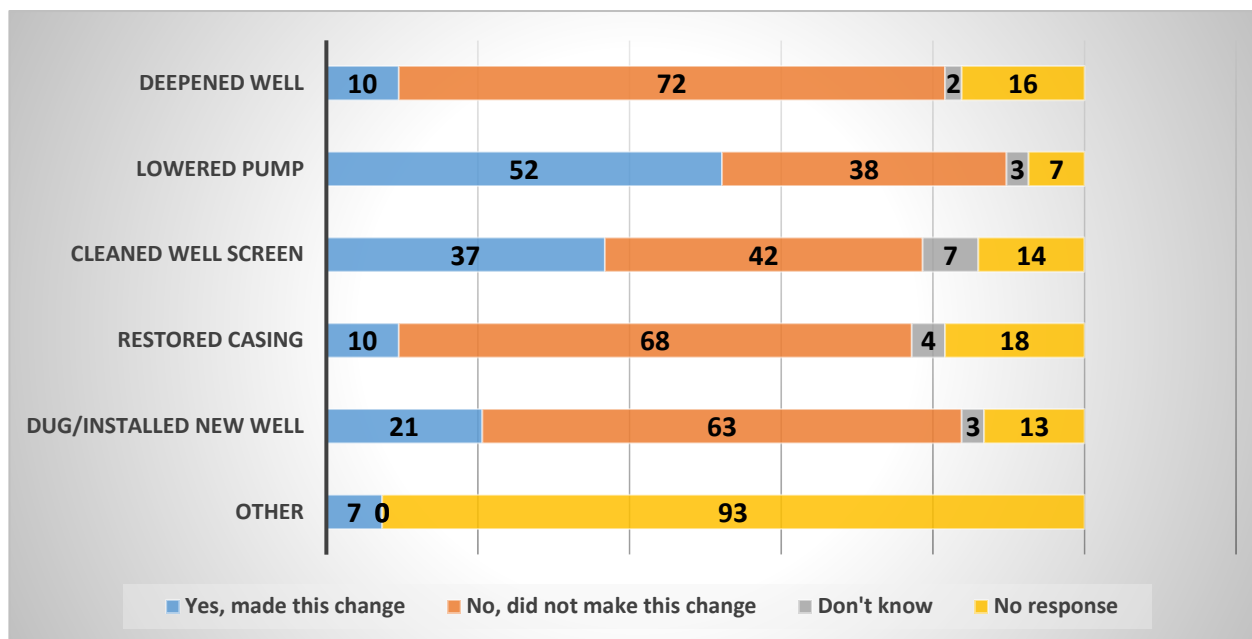
From the answers obtained from Question 6, the 472 property owners made the following changes/improvements to their primary wells within the last 10 years (Figure 7). The number of changes made by each of the 472 property owners was first summarized. Sixty-two percent (or 291 of 472) of owners made no changes, while 22% made one change, 10% made two changes, 3% made three changes, and 2% made four to five changes (see Appendix C-1 for frequency). The simple frequency results across all respondents show that 21% reported lowering the pump for the primary well, 15% reported cleaning the well screen, and 11% reported they had dug/installed a new well to serve the property. Seven percent indicated some other form of improvement—most notably installing a new pump. Four percent reported they deepened the well.

FIGURE 7 (QUESTION 6): CHANGES AND IMPROVEMENTS MADE TO PRIMARY WELL WITHIN LAST 10 YEARS (%)



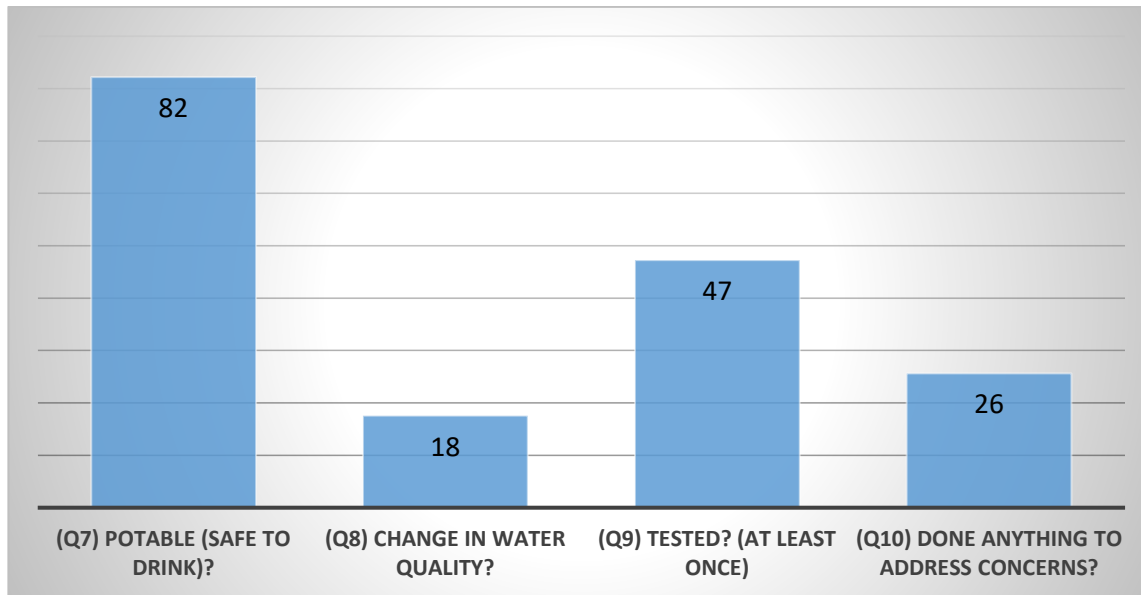
When comparing changes/improvements applied by all owners to those that had experienced a decline in water yield (stated 'yes' to Question 5), the percentage of those that made at least one type of change to their primary well increases considerably (74%). Moreover, the percent for every type of improvement increased considerably as compared to the percent obtained from all property owners (Figure 8).

FIGURE 8: CHANGES AND IMPROVEMENTS MADE TO PRIMARY WELL WITHIN LAST 10 YEARS (%) (QUESTION 6) WHEN WELL EXPERIENCED DECLINE IN YIELD OR RATE (QUESTION 5='Yes')



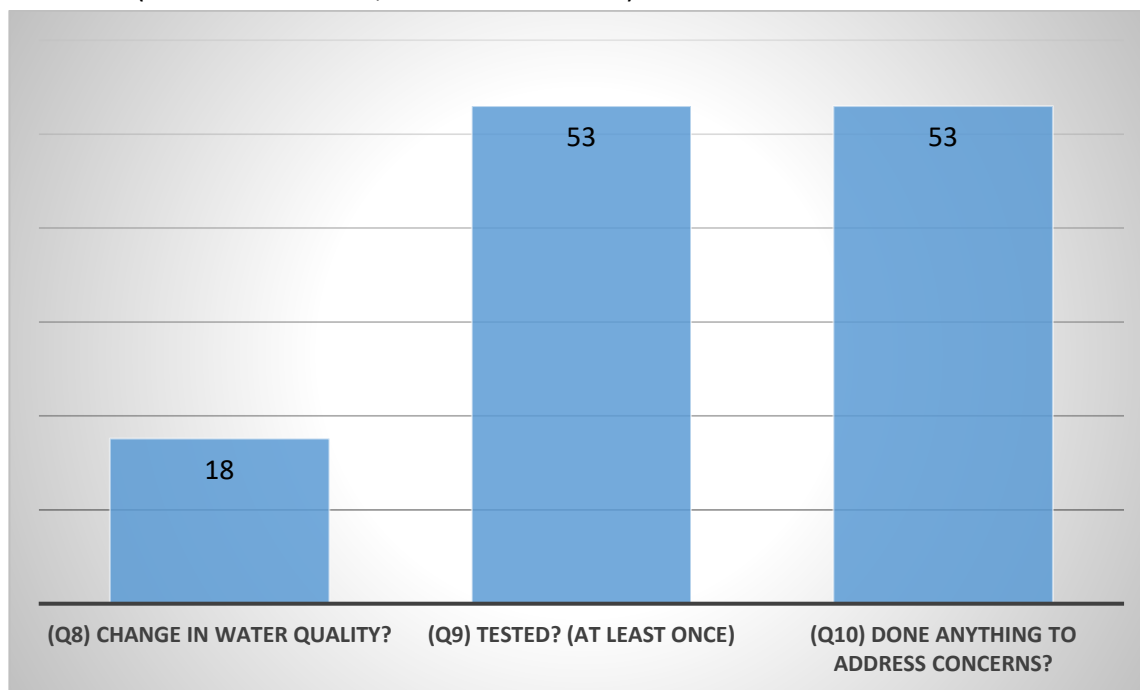
The survey asked basin property owners several questions surrounding the water quality of their primary residential well (Questions 7 – 10). Across all respondents, 82% reported the water from this well is potable (Question 7), and within the last 10 years, 18% have noticed a change in quality (Question 8). Within the last 10 years, 47% have tested the primary well (Question 9), and 26% have addressed water quality concerns (Question 10), (Figure 9).

FIGURE 9: PERCENT OF RESPONDENTS INDICATING WELL WATER IS POTABLE (QUESTION 7='Yes'), A CHANGE IN WATER QUALITY WAS NOTICED (QUESTION 8='Yes'), AND ACTIONS TAKEN TO ADDRESS WATER QUALITY CONCERNS (QUESTIONS 9 AND 10='Yes')



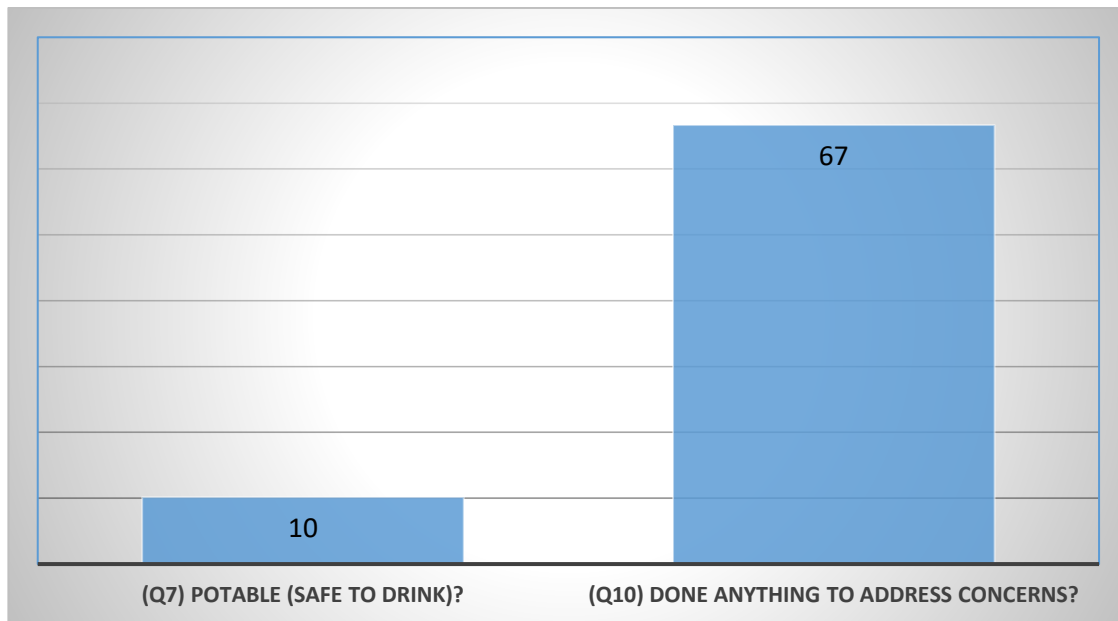
Further analyses were conducted using only those records where a change in water quality has been noticed (Question 8='Yes'). Of the 83 respondents who indicated that there has been a change in water quality over the last 10 years, 53% have tested the well at least once, and 53% have done something to address the quality concerns (Figure 10).

FIGURE 10: PERCENT OF RESPONDENTS INDICATING A NOTICEABLE CHANGE IN WATER QUALITY IN LAST 10 YEARS (QUESTION 8='YES'), AND OF THOSE RESPONDING YES, THE TYPE OF ACTIONS TAKEN TO ADDRESS WATER QUALITY CONCERNS (QUESTIONS 9='YES'; QUESTION 10='YES')



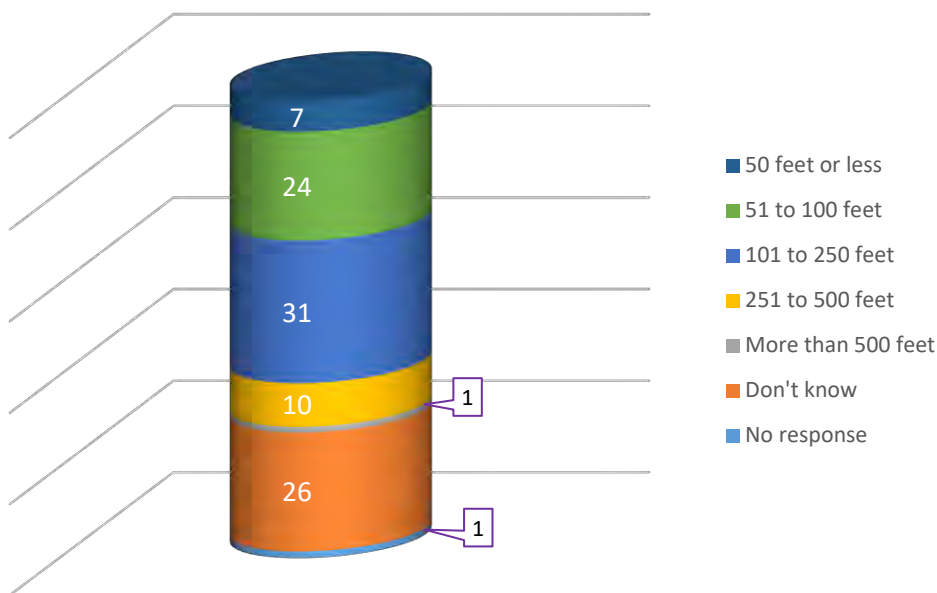
Question 7 asked if the water from primary residential well on the property is potable (safe to drink). Ten percent answered 'No' to this question. Of those cases where the well water was reported unsafe to drink, 67% of basin owners claim to have done something to address their water quality concerns (Figure 11).

FIGURE 11: PERCENT OF RESPONDENTS INDICATING WELL WATER IS NOT POTABLE (QUESTION 7='No'), AND OF THOSE, ACTION TAKEN TO ADDRESS WATER QUALITY CONCERNS (QUESTION 10='Yes')



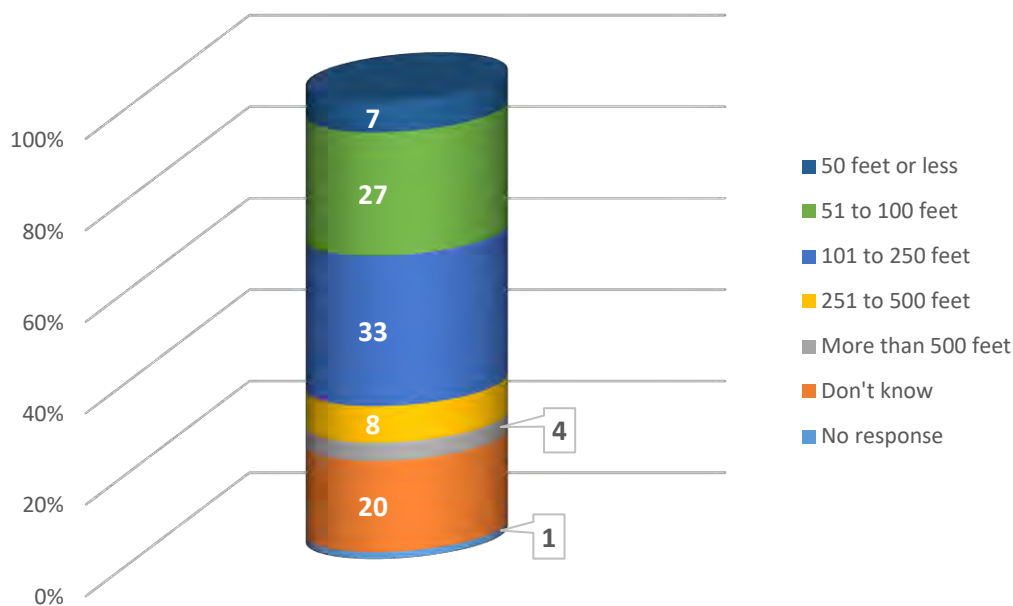
According to question 12, residential well depth varies across all Harney Basin properties with 11% reporting a well depth of over 251 feet, 31% reporting a well of 101 – 250 deep, 24% reporting a depth of 51 – 100 feet, and 7% reporting a well depth of 50 feet or less (Figure 12). A large portion of respondents did not know the depth of their primary residential well (26%) while 1% did not respond to the question (Question 12).

FIGURE 12 (QUESTION 12): PRIMARY RESIDENTIAL WELL DEPTHS (%)



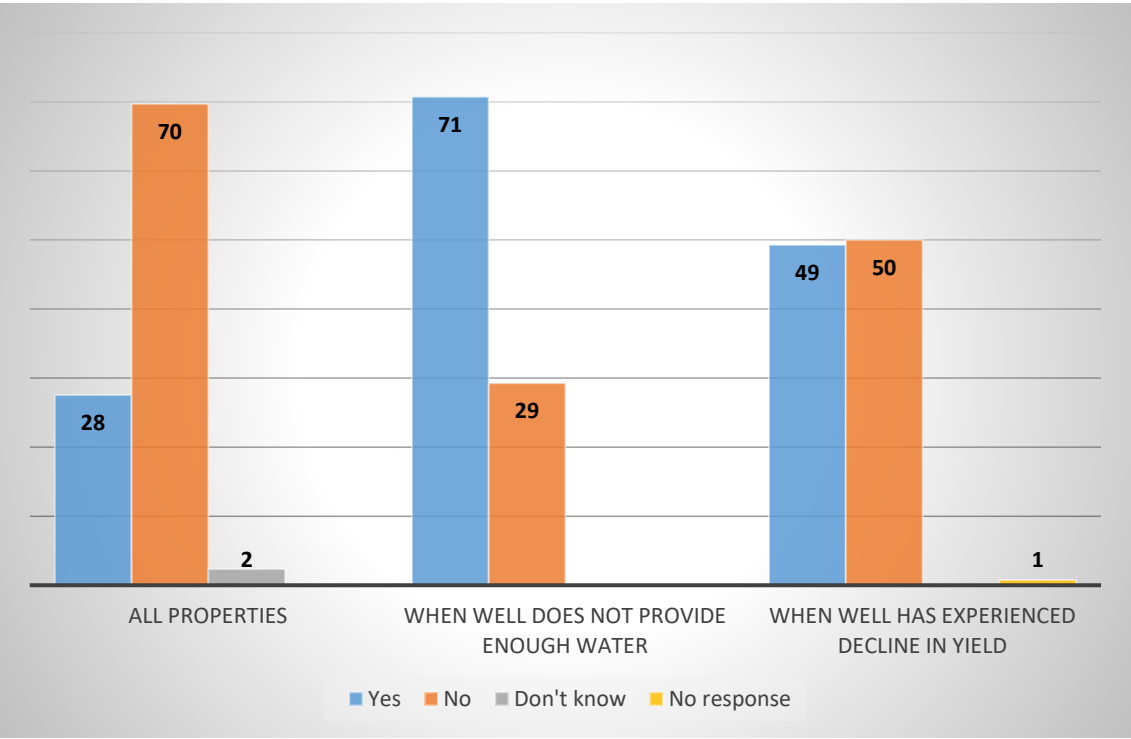
When respondents indicated their residential well does not provide enough water to meet their needs (Question 4='No') or when the well has experienced a decline in yield or rate (Question 5='Yes'), a slight difference in well depth is noted. Of those records under these conditions (143), the percent of wells with a depth of 51 to 100 feet increases to 27% and wells with a depth of 101 to 25 feet increases to 33%. The percent of wells under the 251 to 500 feet depth falls to 8% (Figure 13)

FIGURE 13: PRIMARY RESIDENTIAL WELL DEPTHS (%) WHEN WELL DOES NOT PROVIDE ENOUGH WATER TO MEET NEEDS (QUESTION 4='No') OR THE WELL HAS EXPERIENCED A DECLINE IN YIELD OR RATE (QUESTION 5='Yes')



Whether or not an owner has brought in water for household or outdoor use from another source within the last 10 years (Question 13) varies depending on whether the well provides enough water to meet the household needs (Question 4) and if the well has experienced a decline in yield (Question 5). For all responding property owners, 28% indicated they had brought in water from another source, but when the primary residential well does not cover the needs of the household (Question 4='No'), the percent of owners indicating they had brought in water from another source increases to 71%. When the primary residential well has experienced a decline in yield (Question 5='Yes'), the percent of owners reporting a need to bring in water is 49% (Figure 14).

FIGURE 14: PERCENT OF RESPONDENTS INDICATING A NEED TO BRING IN WATER FROM AN OUTSIDE SOURCE (QUESTION 13='Yes'); WHEN WELL DOES NOT PROVIDE ENOUGH WATER TO MEET NEEDS (QUESTION 4='No'), AND WHEN THE WELL HAS EXPERIENCED A DECLINE IN YIELD (QUESTION 5='Yes')



Sixteen percent of basin property owners report an additional functioning residential well on site (Question 14). Of these additional functioning wells, 67% use the well for livestock, 61% for irrigation of a lawn or noncommercial garden of ½ acre or less, 41% for drinking/cooking, and 39% are used for other indoor uses (Question 14a_1 – 14a_5). Among the additional functioning wells, 20% have experienced a decline in yield in the last 10 years according to respondents.

SURVEY RESPONSE DATA AND OUTPUT (RESULTS FROM APPENDIX C-2, SUB-BASIN CROSS TABULATIONS)

Appendix C-2 provides responses to the survey questions by sub-basin. In this summary, the categories of response for each question are listed as row headings and the sub-basins are listed as the column headings. With each intersecting cell for these headings are four numbers. The first is defined as the ‘Frequency’ which reflects the number of respondents that responded to that category of response within each sub-basin. Note that the last row summarizes the total and number and percent of respondents for each basin. The range of respondents should be incorporated when comparing results from this analysis

given that respondents from Silvies and Harney-Malheur sub-basins represent 91% of the overall results. The next number is labeled as 'Percent'. This denotes the percent of responses across the sub-basins that selected the response category (note that the sum across each cell of the table adds to 100%). The next number is the 'Row Pct'. This denotes the percent of respondents for that specific category of response (i.e., row) for each sub-basin (note that the sum across the row adds to 100%). The last number with each cell is labeled the 'Col Pct'. This denotes the percent of respondents that answered each of the response categories within each sub-basin. Note that the sum of the third number for each sub-basin (or column) totals 100%. This is informative to see comparisons of responses across the sub-basins. The last row of each table in Appendix C-2 denotes the total number (Frequency) and percent of respondents in each basin. The last column denotes the total number of respondents in that category of response (row) and the percent of respondents to that category of response.

APPENDIX A-1: COPY OF RECRUITMENT MATERIALS



Harney Community-Based Water Planning Collaborative

{FULL_NAME}
{C/O AGENT}
{DLVRYDDRS}
{CITY1}, {STATE1} {ZIP41}

Dear Harney Basin Residential Well Owner:

September 13, 2019

We hope you are having an enjoyable summer. While this spring was a good one for rainfall, a trend in groundwater-level declines has been affecting a number of Harney Basin residential wells (also referred to as domestic wells), and there have been reports of water quality issues. As you may know, residential wells are exempt from permitting requirements of the Oregon Water Resources Department, so there is little information on the status of these wells. The Harney Community-Based Water Planning Collaborative (referred to as ‘the Collaborative’) is a group of local water users and organizations/agencies involved in water management. The Collaborative is very interested in gathering information on what residential well users have experienced with their well-water quantity and quality. Doing so will better inform the group in determining ways to help address the basin’s groundwater needs.

Within the next week, you will receive a letter from the Oregon State University Survey Research Center (OSU-SRC) about a survey we are conducting on this topic. The survey is voluntary, and all information gathered will be confidential. Results will be summarized and shared with the Collaborative to improve its water planning efforts. If there is more than one property under your name within the Basin, you will receive more than one letter and survey.

We are writing in advance to tell you about this important project and encourage your participation. When you receive your letter from the OSU-SRC by mail, please complete the questionnaire to the best of your ability. Thank you for your cooperation and assistance.

Sincerely,

Brenda Smith, Community-Based Water Planning Co-Convener & Harney County Watershed Council Chair
Mark Owens, Community-Based Water Planning Co-Convener & Harney County Commissioner
Diane Rapaport, Harney County Watershed Council Vice-Chair

Want to know more about or join the water planning Collaborative? Visit our website (<http://hcwatershedcouncil.com/community-based-water-planning/>), subscribe to our email listserve (<https://bit.ly/2IQ57z9>) or contact: Gretchen Bates (Local Coordinator, 541-573-7595) or Rianne BeCraft (Project Manager, 541-360-1695).



Dear Harney Basin Residential Well Owner:

September 13, 2019

About a week ago, you should have received a letter in the mail from the Harney Community-Based Water Planning Collaborative (Collaborative) about a survey we are conducting to determine the extent of groundwater quantity and quality issues experienced by users of residential wells (also referred to as domestic wells) in the basin. The results of this survey will be used to inform the development of strategies that could help address groundwater well issues. The Oregon State University Survey Research Center has been hired to collect the survey data on the behalf of the Collaborative.

You have been sent this questionnaire because according to Harney County address records, at least one residential well is located at this address **{FULLADDRESS}** in Harney County. Please help us accurately assess the issues that residential well users are facing by completing and returning the enclosed questionnaire. If records show that you have more than one property in the region, you will receive more than one survey. If you receive more than one, please complete a questionnaire for the primary residential well on each associated property.

Your answers are confidential. Your questionnaire is numbered so we can remove your name and address from our mailing list once your questionnaire has been returned. No identifiable information such as your name or address will be included in the database and will not be used for any purpose other than this survey. All data are combined and reported as a summary to the Collaborative. This survey is voluntary, as is the work of the Collaborative.

If you have any questions or comments about the purpose of this study, please contact Gretchen Bates (Local Coordinator, 541-573-7595) or Rianne BeCraft (Project Manager, 541-360-1695, rienne@hcwatershedcouncil.com). Should you choose to not participate or want to be removed from the mailing list, simply return your blank survey in the prepaid envelope provided or contact Lydia Newton at newton@science.oregonstate.edu or 541-737-1993.

Thank you for your assistance.

Sincerely,

V.M. Lesser, Director (lesser@science.oregonstate.edu, 541-737-3584)



**Oregon State
University**

Survey Research Center

Oregon State University
239 Weniger Hall
Corvallis, OR 97331-8574

Dear Harney Basin Residential Well User:

Last week, you should have received a confidential questionnaire from us asking you to provide some information about the experiences you have had with your residential well.

If you have already completed and returned the questionnaire to us, please accept our thanks. If not, please do so today. It is important for us to receive your input if the results are to accurately represent the views and experiences of all Harney basin residential well users.

Sincerely,

V.M. Lesser

Director, OSU Survey Research Center



Dear Harney Basin Residential Well User:

October 11, 2019

Recently, we sent you a request asking for your input about residential well water issues in Harney basin. The Harney Community-Based Water Planning Collaborative is conducting this questionnaire to assist in the development of strategies that could help address groundwater well issues. To the best of our knowledge, we have not yet received a completed questionnaire for the property on **{FULLADDRS}**. In the event that the questionnaire we mailed to you earlier was misplaced, we have included another copy in this envelope. If you have already sent back a questionnaire, you may be receiving this follow-up reminder for a well on another property—please note the address reference.

Although we have heard from several property owners in Harney basin, there is no substitute for the information you can provide. It is only by hearing from nearly everyone in the region that relies on a residential well that we can obtain accurate results. Please refer to the property at **{FULLADDRS}** when answering the enclosed survey and return it in the enclosed questionnaire in the postage-paid envelope provided.

Your answers are confidential. Your questionnaire is numbered so we can remove your name from our mailing list once your questionnaire has been returned. No identifiable information such as your name or address will be included in the database and will not be used for any purpose other than this survey. All data are combined and reported as a summary to the Collaborative. This survey is voluntary, as is the work of the Collaborative.

If you have any questions or comments about the purpose of this study, please contact Rianne BeCraft of the Collaborative at (541-360-1695, rianne@hcwatershedcouncil.com). Should you choose to not participate or want to be removed from the mailing list, simply return your blank survey in the envelope provided.

Thank you for your assistance.

Sincerely,

V.M. Lesser, Director (lesser@science.oregonstate.edu, 541-737-3584)

APPENDIX A-2: COPY OF PAPER QUESTIONNAIRE

Groundwater in Harney Basin

**A questionnaire for
residential well users in Harney Basin**

A study conducted for:
the Harney County Watershed Council



By:

Survey Research Center

Oregon State University
239 Weniger Hall
Corvallis, Oregon 97331-8574



Oregon State
University

We understand that there may be more than one residential well on the property that is indicated in the cover letter. Please think about the residential well that you consider the primary well when answering the survey questions. Residential wells are those that you mainly use for general household and outdoor uses. We will ask about any secondary wells at the end of the survey.

Q1. Does the property indicated on the cover letter currently have a residential well on site?

- ☐₁ Yes
- ☐₂ No → Please go to question 15 to add a comment and return your survey in the envelope provided.
- ☐₃ Don't know → Please go to question 15 to add a comment and return your survey in the envelope provided.

Q2. About how many people rely on the primary residential well at this property for general household and outdoor use? (Please mark Don't Know if you are unsure)

_____ People rely on this well ☐ Don't know

Q3. Please indicate whether or not this well is used for each of the following purposes.

	<u>Yes</u> , used for this	<u>No</u> , not used for this
Drinking/cooking	☐ ₁	☐ ₂
Other indoor use	☐ ₁	☐ ₂
Irrigation of any lawn or noncommercial garden of ½ acre or less	☐ ₁	☐ ₂
Livestock	☐ ₁	☐ ₂
Other (describe _____)		

Q4. Does this well provide enough water to meet the needs indicated in question 3?

- ☐₁ Yes
- ☐₂ No
- ☐₃ Don't know

Q5. Thinking about the last 10 years, has this residential well experienced a decline in yield (volume pumped) or rate (e.g., gallons per minute)? Evidence of this could include sucking air or sand.

- ☐₁ Yes
- ☐₂ No → (After marking 'No', go to question 6 on the next page)
- ☐₃ Don't know → (After marking 'Don't know', go to question 6 on the next page)

→ **Q5a. Has this decline been experienced seasonally (e.g., during summer or fall) or constantly (yield has steadily declined over time)?**

- ☐₁ Seasonally (e.g., during summer or fall)
- ☐₂ Constantly (steady decline over time)
- ☐₃ Don't know

Q6. Please indicate whether or not you have made any of the following changes/improvements to this well in the last 10 years to serve this property due to change in well performance?

	<u>Yes, made this change</u>	<u>No, did not make this change</u>	<u>Don't know</u>
Deepened well	☐ ₁	☐ ₂	☐ ₃
Lowered pump	☐ ₁	☐ ₂	☐ ₃
Cleaned well screen	☐ ₁	☐ ₂	☐ ₃
Restored casing	☐ ₁	☐ ₂	☐ ₃
Dug/installed a new well to serve this property	☐ ₁	☐ ₂	☐ ₃
Other (please describe _____)			

Q7. Is the water pumped from this well potable (safe to drink)?

- ☐₁ Yes
☐₂ No
☐₃ Don't know

Q8. Have you noticed a change in water quality in this well in the last 10 years?

- ☐₁ Yes
☐₂ No
☐₃ Don't know

Q9. Have you had the water quality of this well tested in the last 10 years?

- ☐₁ Yes, tested once
☐₂ Yes, tested more than once
☐₃ No → (After marking 'No', go to question 10)
☐₄ Don't know → (After marking 'Don't know', go to question 10)

Q9a. Please indicate whether each of the following was detected or not in any of tests and provide the concentration amount, if known.

	Not detected	Detected	What was the concentration?
Iron	☐ ₁	☐ ₂ →	
Nitrates	☐ ₁	☐ ₂ →	
Arsenic	☐ ₁	☐ ₂ →	
Other (please describe _____ & provide concentraion			

Q10. Have you done anything to address water quality concerns (e.g., chemical or filtration treatment, reverse osmosis system)?

- ☐₁ Yes
☐₂ No
☐₃ Don't know

Q11. What year was this primary residential well installed? (Please mark Don't Know if you are unsure)

_____ ☐ Don't know
 YYYY

Q12. How deep is this well?

- ☐₁ 50 feet or less ☐₃ 101 to 250 feet ☐₅ More than 500 feet
☐₂ 51 to 100 feet ☐₄ 251 to 500 feet ☐₆ Don't know

Q13. Have you brought in water for household or outdoor use from another source in the last 10 years? For example, hauling water from another source or from a secondary well.

- ☐₁ Yes
☐₂ No → (After marking 'No', go to question 14)
☐₃ Don't know → (After marking 'Don't know', go to question 14)

Q13a. Please indicate whether or not you brought in water from another source for each of the following purposes.

	<u>Yes</u> , brought in for this	<u>No</u> , not brought in for this
Drinking/cooking	☐ ₁	☐ ₂
Other indoor use	☐ ₁	☐ ₂
Irrigation of any lawn or noncommercial garden of ½ acre or less	☐ ₁	☐ ₂
Livestock	☐ ₁	☐ ₂
Other (describe_____)		

Q14. Do you have an additional functioning residential well on this property?

- ☐₁ Yes
☐₂ No → (After marking 'No', go to question 15)
☐₃ Don't know → (After marking 'Don't know', go to question 15)

Q14a. Please indicate whether or not this well is used for each of the following purposes.

	<u>Yes</u> , used for this	<u>No</u> , not used for this
Drinking/cooking	☐ ₁	☐ ₂
Other indoor use	☐ ₁	☐ ₂
Irrigation of any lawn or noncommercial garden of ½ acre or less	☐ ₁	☐ ₂
Livestock	☐ ₁	☐ ₂
Other describe_____)		

Q14b. Thinking about the last 10 years, has this additional residential well experienced a decline in yield (volume pumped) or rate (e.g., gallons per minute)? Evidence of this could include sucking air or sand.

- ☐₁ Yes
☐₂ No
☐₃ Don't know

Q15. Did we overlook anything? Please use this space to share any comments or concerns about this topic.

APPENDIX B: DATA CODEBOOK

Variables in sample data

Name: ID
1001-1249

Name: Wave
1=First survey mailing
2=Second survey mailing
9=Not applicable

Name: DISP
1=Complete
2=Refusal
3=Undeliverable
4=Deceased
5=Other, outside frame

Name and address information also available in sample file.

Codebook Name: HARNEY_GROUNDWATER
Date: October 10, 2019
Number of Variables in Codebook: 40
Data Record Length: 47

Var. 1	Fmt: N4	Col: 1-4	Name: ID (A)
	Survey ID		
	#		

Var. 2	Fmt: N1	Col: 5	Name: Q1 (B)
	Does the property indicated on the cover letter	County currently have a residential well on site?	
	1=Yes	2=No ;100	3=Don't know ;100 9=No response

Var. 3	Fmt: N2	Col: 6-7	Name: Q2 (C)
	About how many people rely on the primary residential well at this property for general household and outdoor use?		
	#	00=Don't know	99=No response

Var. 4	Fmt: N1	Col: 8	Name: Q3_1 (D)
	Drinking/cooking		
	1=Yes, used for this	2=No, not used for this	9=No response

Var. 5	Fmt: N1	Col: 9	Name: Q3_2 (E)
--------	---------	--------	----------------

Other indoor use			
	1=Yes, used for this	2=No, not used for this	9=No response
Var. 6	Fmt: N1	Col: 10	Name: Q3_3 (F)
	Irrigation of any lawn or noncommercial garden of 1/2 acre or less		
	1=Yes, used for this	2=No, not used for this	9=No response
Var. 7	Fmt: N1	Col: 11	Name: Q3_4 (G)
	Livestock		
	1=Yes, used for this	2=No, not used for this	9=No response
Var. 8	Fmt: N1	Col: 12	Name: Q3_5 (H)
	Other		
	1=Yes, used for this	2=No, not used for this	9=No response
Var. 9	Fmt: N1	Col: 13	Name: Q4 (I)
	Does this well provide enough water to meet the needs indicated in question 3?		
	1=Yes	2=No	3=Don't know 9=No response
Var. 10	Fmt: N1	Col: 14	Name: Q5 (J)
	Thinking about the last 10 years, has this residential well experienced a decline in yield (volume pumped) or rate (e.g., gallons per minute)? Evidence of this could include sucking air or sand.		
	1=Yes	2=No ;12	3=Don't know ;12 9=No response ;12
Var. 11	Fmt: N1	Col: 15	Name: Q5a (K)
	Has this decline been experienced seasonally (e.g., during summer or fall) or constantly (yield has steadily declined over time)?		
	1=Seasonally (during summer or fall)	8=Both Seasonally and Constantly	
	2=Constantly (steady decline over time)	9=No response	
	3=Don't know		
Var. 12	Fmt: N1	Col: 16	Name: Q6_1 (L)
	Deepened well		
	1=Yes, made this change	3=Don't know	
	2=No, did not make this change	9=No response	
Var. 13	Fmt: N1	Col: 17	Name: Q6_2 (M)
	Lowered pump		
	1=Yes, made this change	3=Don't know	
	2=No, did not make this change	9=No response	
Var. 14	Fmt: N1	Col: 18	Name: Q6_3 (N)
	Cleaned well screen		
	1=Yes, made this change	3=Don't know	
	2=No, did not make this change	9=No response	

Var. 15	Fmt: N1	Col: 19	Name: Q6_4 (O)
Restored casing			
	1=Yes, made this change		3=Don't know
	2=No, did not make this change		9=No response
Var. 16	Fmt: N1	Col: 20	Name: Q6_5 (P)
Dug/installed a new well to serve this property			
	1=Yes, made this change		3=Don't know
	2=No, did not make this change		9=No response
Var. 17	Fmt: N1	Col: 21	Name: Q6_6 (Q)
Other			
	1=Yes, made this change		3=Don't know
	2=No, did not make this change		9=No response
Var. 18	Fmt: N1	Col: 22	Name: Q7 (R)
Is the water pumped from this well potable (safe to drink)?			
	1=Yes	2=No	3=Don't know 9=No response
Var. 19	Fmt: N1	Col: 23	Name: Q8 (S)
Have you noticed a change in water quality in this well in the last 10 years?			
	1=Yes	2=No	3=Don't know 9=No response
Var. 20	Fmt: N1	Col: 24	Name: Q9 (T)
Have you had the water quality of this well tested in the last 10 years?			
	1=Yes, tested once		4=Don't know ;25
	2=Yes, tested more than once		9=No response ;25
	3=No ;25		
Var. 21	Fmt: N1	Col: 25	Name: Q9a_1 (U)
Iron			
	1=Not detected	2=Detected	9=No response
Var. 22	Fmt: N1	Col: 26	Name: Q9a_2 (V)
Nitrates			
	1=Not detected	2=Detected	9=No response
Var. 23	Fmt: N1	Col: 27	Name: Q9a_3 (W)
Arsenic			
	1=Not detected	2=Detected	9=No response
Var. 24	Fmt: N1	Col: 28	Name: Q9a_4 (X)
Other			
	1=Not detected	2=Detected	9=No response

Var. 25	Fmt: N1	Col: 29	Name: Q10 (Y)
Have you done anything to address water quality concerns (e.g., chemical or filtration treatment, reverse osmosis system)?			
	1=Yes	2=No	3=Don't know 9=No response
Var. 26	Fmt: N4	Col: 30-33	Name: Q11 (Z)
What year was this primary residential well installed?			
	#	0000=Don't know	9999=No response
Var. 27	Fmt: N1	Col: 34	Name: Q12 (AA)
How deep is this well?			
	1=50 feet or less	4=251 to 500 feet	9=No response
	2=51 to 100 feet	5=More than 500 feet	
	3=101 to 250 feet	6=Don't know	
Var. 28	Fmt: N1	Col: 35	Name: Q13 (AB)
Have you brought in water for household or outdoor use from another source in the last 10 years? For example, hauling water from another source or from a secondary well.			
	1=Yes	2=No ;34	3=Don't know ;34 9=No response ;34
Var. 29	Fmt: N1	Col: 36	Name: Q13a_1 (AC)
Drinking/cooking			
	1=Yes, brought in for this		9=No response
	2=No, not brought in for this		
Var. 30	Fmt: N1	Col: 37	Name: Q13a_2 (AD)
Other indoor use			
	1=Yes, brought in for this		9=No response
	2=No, not brought in for this		
Var. 31	Fmt: N1	Col: 38	Name: Q13a_3 (AE)
Irrigation of any lawn or noncommercial garden of 1/2 acre or less			
	1=Yes, brought in for this		9=No response
	2=No, not brought in for this		
Var. 32	Fmt: N1	Col: 39	Name: Q13a_4 (AF)
Livestock			
	1=Yes, brought in for this		9=No response
	2=No, not brought in for this		
Var. 33	Fmt: N1	Col: 40	Name: Q13a_5 (AG)
Other			
	1=Yes, brought in for this		9=No response
	2=No, not brought in for this		

Var. 34	Fmt: N1	Col: 41	Name: Q14 (AH)
Do you have an additional functioning residential well on this property?			
	1=Yes	2=No ;100	3=Don't know ;100 9=No response ;100
Var. 35	Fmt: N1	Col: 42	Name: Q14a_1 (AI)
Drinking/cooking			
	1=Yes, used for this	2=No, not used for this	9=No response
Var. 36	Fmt: N1	Col: 43	Name: Q14a_2 (AJ)
Other indoor use			
	1=Yes, used for this	2=No, not used for this	9=No response
Var. 37	Fmt: N1	Col: 44	Name: Q14a_3 (AK)
Irrigation of any lawn or noncommercial garden of 1/2 acre or less			
	1=Yes, used for this	2=No, not used for this	9=No response
Var. 38	Fmt: N1	Col: 45	Name: Q14a_4 (AL)
Livestock			
	1=Yes, used for this	2=No, not used for this	9=No response
Var. 39	Fmt: N1	Col: 46	Name: Q14a_5 (AM)
Other			
	1=Yes, used for this	2=No, not used for this	9=No response
Var. 40	Fmt: N1	Col: 47	Name: Q14b (AN)
Thinking about the last 10 years, has this additional residential well experienced a decline in yield (volume pumped) or rate (e.g., gallons per minute)? Evidence of this could include sucking air or sand.			
	1=Yes	2=No	3=Don't know 9=No response

APPENDIX C-1: CLOSED-ENDED QUESTION RESPONSE FREQUENCIES

Groundwater in Harney Basin
A questionnaire for residential well users in Harney Basin
Harney County Watershed Council
Basic Frequencies

Disposition for all questionnaires

The FREQ Procedure

DISP	Frequency	Percent	Cumulative Frequency	Cumulative Percent
Not returned	601	48.12	601	48.12
Completed	574	45.96	1175	94.08
Refusal	38	3.04	1213	97.12
Undeliverable	24	1.92	1237	99.04
Deceased	8	0.64	1245	99.68
Other (outside sampling/population frame: duplicate, invalid property, etc)	4	0.32	1249	100.00

Groundwater in Harney Basin
A questionnaire for residential well users in Harney Basin
Harney County Watershed Council
Basic Frequencies

Wave for all questionnaires

The FREQ Procedure

WAVE	Frequency	Percent	Cumulative Frequency	Cumulative Percent
First mailing wave	454	36.35	454	36.35
Second mailing wave	194	15.53	648	51.88
Not applicable	601	48.12	1249	100.00

Groundwater in Harney Basin
A questionnaire for residential well users in Harney Basin
Harney County Watershed Council
Basic Frequencies

Wave by disposition for all questionnaires

The FREQ Procedure

Table of WAVE by DISP							
WAVE	DISP						
Frequency Percent Row Pct Col Pct	Not returned	Completed	Refusal	Undeliverable	Deceased	Other (outside sampling/population frame: duplicate, invalid property, etc)	Total
First mailing wave	0 0.00 0.00 0.00	398 31.87 87.67 69.34	27 2.16 5.95 71.05	20 1.60 4.41 83.33	8 0.64 1.76 100.00	1 0.08 0.22 25.00	454 36.35
Second mailing wave	0 0.00 0.00 0.00	176 14.09 90.72 30.66	11 0.88 5.67 28.95	4 0.32 2.06 16.67	0 0.00 0.00 0.00	3 0.24 1.55 75.00	194 15.53
Not applicable	601 48.12 100.00 100.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	601 48.12
Total	601 48.12	574 45.96	38 3.04	24 1.92	8 0.64	4 0.32	1249 100.00

Groundwater in Harney Basin
A questionnaire for residential well users in Harney Basin
Harney County Watershed Council
Basic Frequencies

Sub basin for all questionnaires

The FREQ Procedure

SUB_BASIN	Frequency	Percent	Cumulative Frequency	Cumulative Percent
Silvies	499	39.95	499	39.95
Harney-Malheur Lakes	630	50.44	1129	90.39
Donner and Blitzen	54	4.32	1183	94.72
Silver Creek	66	5.28	1249	100.00

Groundwater in Harney Basin
A questionnaire for residential well users in Harney Basin
Harney County Watershed Council
Basic Frequencies

Sub basin for completed questionnaires

The FREQ Procedure

SUB_BASIN	Frequency	Percent	Cumulative Frequency	Cumulative Percent
Silvies	225	39.20	225	39.20
Harney-Malheur Lakes	296	51.57	521	90.77
Donner and Blitzen	19	3.31	540	94.08
Silver Creek	34	5.92	574	100.00

Groundwater in Harney Basin
A questionnaire for residential well users in Harney Basin
Harney County Watershed Council
Basic Frequencies

Question 1. Does the property indicated on the cover letter currently have a residential well on site?

The FREQ Procedure

Q1	Frequency	Percent	Cumulative Frequency	Cumulative Percent
Yes	472	82.23	472	82.23
No	97	16.90	569	99.13
Don't know	5	0.87	574	100.00

Groundwater in Harney Basin
A questionnaire for residential well users in Harney Basin
Harney County Watershed Council
Basic Frequencies

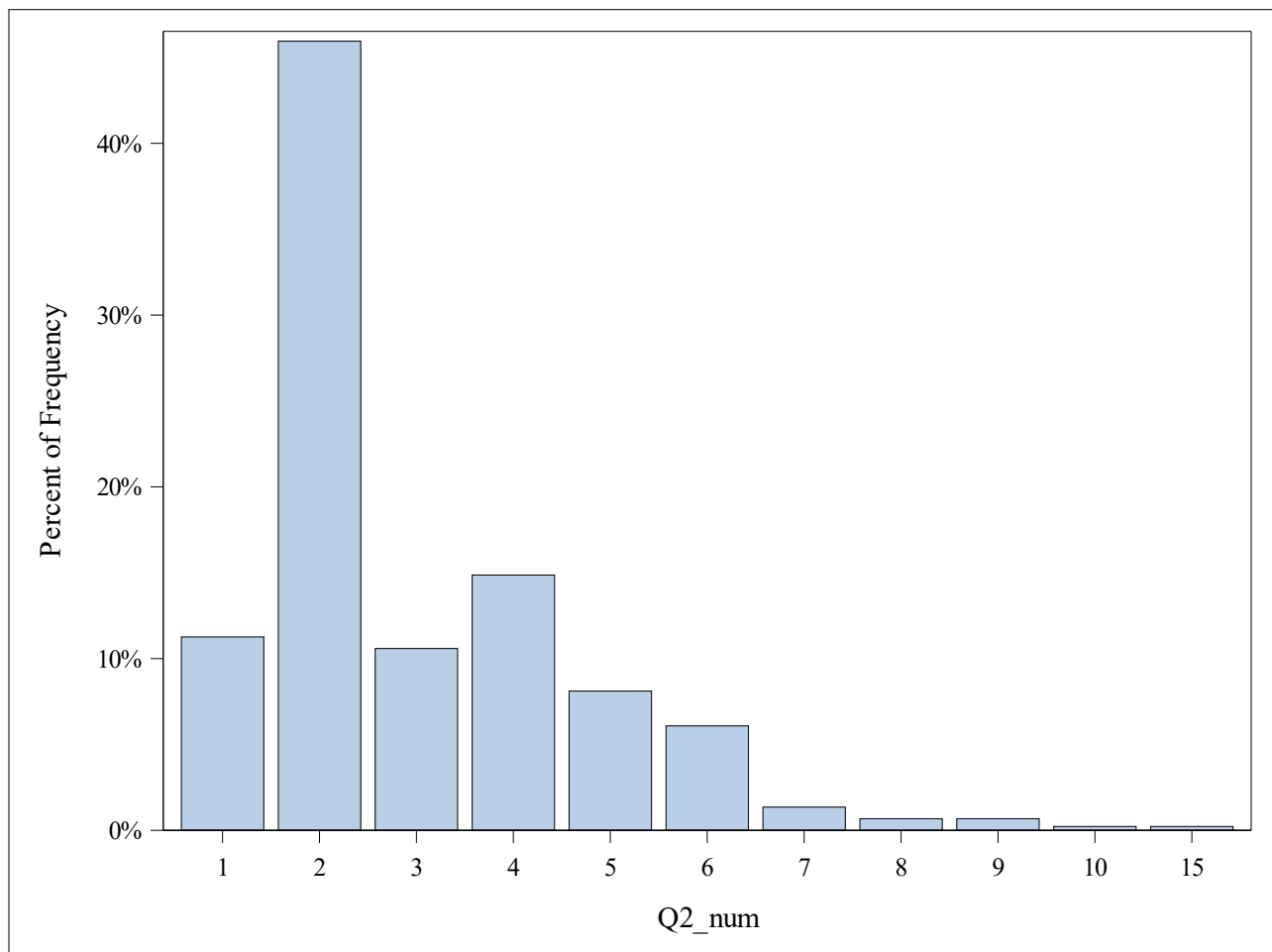
***Question 2. About how many people rely on the primary residential well at this property
for general household and outdoor use?***

The FREQ Procedure

Q2	Frequency	Percent	Cumulative Frequency	Cumulative Percent
Don't know	13	2.75	13	2.75
1	50	10.59	63	13.35
2	204	43.22	267	56.57
3	47	9.96	314	66.53
4	66	13.98	380	80.51
5	36	7.63	416	88.14
6	27	5.72	443	93.86
7	6	1.27	449	95.13
8	3	0.64	452	95.76
9	3	0.64	455	96.40
10	1	0.21	456	96.61
15	1	0.21	457	96.82
No response	15	3.18	472	100.00
Frequency Missing = 102				

Groundwater in Harney Basin
A questionnaire for residential well users in Harney Basin
Harney County Watershed Council
Basic Frequencies

***Question 2. About how many people rely on the primary residential well at this property
for general household and outdoor use?***



Groundwater in Harney Basin
A questionnaire for residential well users in Harney Basin
Harney County Watershed Council
Basic Frequencies

Question 3. Please indicate whether or not this well is used for each of the following purposes.

The FREQ Procedure

Drinking/cooking				
Q3_1	Frequency	Percent	Cumulative Frequency	Cumulative Percent
Yes, used for this	429	90.89	429	90.89
No, not used for this	41	8.69	470	99.58
No response	2	0.42	472	100.00
Frequency Missing = 102				

Other indoor use				
Q3_2	Frequency	Percent	Cumulative Frequency	Cumulative Percent
Yes, used for this	450	95.34	450	95.34
No, not used for this	9	1.91	459	97.25
No response	13	2.75	472	100.00
Frequency Missing = 102				

Irrigation of any lawn or noncommercial garden of 1/2 acre or less				
Q3_3	Frequency	Percent	Cumulative Frequency	Cumulative Percent
Yes, used for this	420	88.98	420	88.98
No, not used for this	41	8.69	461	97.67
No response	11	2.33	472	100.00
Frequency Missing = 102				

Groundwater in Harney Basin
A questionnaire for residential well users in Harney Basin
Harney County Watershed Council
Basic Frequencies

Question 3. Please indicate whether or not this well is used for each of the following purposes.

The FREQ Procedure

Livestock				
Q3_4	Frequency	Percent	Cumulative Frequency	Cumulative Percent
Yes, used for this	328	69.49	328	69.49
No, not used for this	103	21.82	431	91.31
No response	41	8.69	472	100.00
Frequency Missing = 102				

Other				
Q3_5	Frequency	Percent	Cumulative Frequency	Cumulative Percent
Yes, used for this	12	2.54	12	2.54
No response	460	97.46	472	100.00
Frequency Missing = 102				

Groundwater in Harney Basin
A questionnaire for residential well users in Harney Basin
Harney County Watershed Council
Basic Frequencies

Question 4. Does this well provide enough water to meet the needs indicated in question 3?

The FREQ Procedure

Q4	Frequency	Percent	Cumulative Frequency	Cumulative Percent
Yes	421	89.19	421	89.19
No	41	8.69	462	97.88
Don't know	9	1.91	471	99.79
No response	1	0.21	472	100.00
Frequency Missing = 102				

Groundwater in Harney Basin
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Basic Frequencies

Question 5. Thinking about the last 10 years, has this residential well experienced a decline in yield (volume pumped) or rate (e.g., gallons per minute)? Evidence of this could include sucking air or sand.

The FREQ Procedure

Q5	Frequency	Percent	Cumulative Frequency	Cumulative Percent
Yes	136	28.81	136	28.81
No	267	56.57	403	85.38
Don't know	66	13.98	469	99.36
No response	3	0.64	472	100.00
Frequency Missing = 102				

Groundwater in Harney Basin
A questionnaire for residential well users in Harney Basin
Harney County Watershed Council
Basic Frequencies

***Question 5a. Has this decline been experienced seasonally (e.g., during summer or fall)
or constantly (yield has steadily declined over time)?***

The FREQ Procedure

Q5a	Frequency	Percent	Cumulative Frequency	Cumulative Percent
Seasonally (during summer or fall)	73	53.68	73	53.68
Constantly (steady decline over time)	43	31.62	116	85.29
Don't know	9	6.62	125	91.91
Both Seasonally and Constantly	5	3.68	130	95.59
No response	6	4.41	136	100.00
Frequency Missing = 438				

Groundwater in Harney Basin
A questionnaire for residential well users in Harney Basin
Harney County Watershed Council
Basic Frequencies

Question 6. Please indicate whether or not you have made any of the following changes/improvements to this well in the last 10 years to serve this property due to change in well performance?

The FREQ Procedure

Deepened well				
Q6_1	Frequency	Percent	Cumulative Frequency	Cumulative Percent
Yes, made this change	18	3.81	18	3.81
No, did not make this change	382	80.93	400	84.75
Don't know	19	4.03	419	88.77
No response	53	11.23	472	100.00
Frequency Missing = 102				

Lowered pump				
Q6_2	Frequency	Percent	Cumulative Frequency	Cumulative Percent
Yes, made this change	100	21.19	100	21.19
No, did not make this change	317	67.16	417	88.35
Don't know	21	4.45	438	92.80
No response	34	7.20	472	100.00
Frequency Missing = 102				

Cleaned well screen				
Q6_3	Frequency	Percent	Cumulative Frequency	Cumulative Percent
Yes, made this change	69	14.62	69	14.62
No, did not make this change	314	66.53	383	81.14
Don't know	37	7.84	420	88.98
No response	52	11.02	472	100.00
Frequency Missing = 102				

Restored casing				
Q6_4	Frequency	Percent	Cumulative Frequency	Cumulative Percent
Yes, made this change	22	4.66	22	4.66
No, did not make this change	366	77.54	388	82.20
Don't know	23	4.87	411	87.08
No response	61	12.92	472	100.00
Frequency Missing = 102				

Dug/installed a new well to serve this property				
Q6_5	Frequency	Percent	Cumulative Frequency	Cumulative Percent
Yes, made this change	51	10.81	51	10.81
No, did not make this change	351	74.36	402	85.17
Don't know	15	3.18	417	88.35
No response	55	11.65	472	100.00
Frequency Missing = 102				

Other				
Q6_6	Frequency	Percent	Cumulative Frequency	Cumulative Percent
Yes, made this change	34	7.20	34	7.20
No response	438	92.80	472	100.00
Frequency Missing = 102				

Groundwater in Harney Basin
A questionnaire for residential well users in Harney Basin
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Basic Frequencies

The number of changes/improvements made to this well listed in question 6.

The FREQ Procedure

sumchange	Frequency	Percent	Cumulative Frequency	Cumulative Percent
0	291	61.65	291	61.65
1	106	22.46	397	84.11
2	49	10.38	446	94.49
3	16	3.39	462	97.88
4	8	1.69	470	99.58
5	2	0.42	472	100.00
Frequency Missing = 102				

Groundwater in Harney Basin
A questionnaire for residential well users in Harney Basin
Harney County Watershed Council
Basic Frequencies

Question 6. Please indicate whether or not you have made any of the following changes/improvements to this well in the last 10 years to serve this property due to change in well performance?
(Respondents who answered 'Yes' to question 5)

The FREQ Procedure

Deepened well				
Q6_1	Frequency	Percent	Cumulative Frequency	Cumulative Percent
Yes, made this change	13	9.56	13	9.56
No, did not make this change	98	72.06	111	81.62
Don't know	3	2.21	114	83.82
No response	22	16.18	136	100.00

Lowered pump				
Q6_2	Frequency	Percent	Cumulative Frequency	Cumulative Percent
Yes, made this change	71	52.21	71	52.21
No, did not make this change	51	37.50	122	89.71
Don't know	4	2.94	126	92.65
No response	10	7.35	136	100.00

Cleaned well screen				
Q6_3	Frequency	Percent	Cumulative Frequency	Cumulative Percent
Yes, made this change	50	36.76	50	36.76
No, did not make this change	57	41.91	107	78.68
Don't know	10	7.35	117	86.03
No response	19	13.97	136	100.00

Restored casing				
Q6_4	Frequency	Percent	Cumulative Frequency	Cumulative Percent
Yes, made this change	13	9.56	13	9.56
No, did not make this change	92	67.65	105	77.21
Don't know	6	4.41	111	81.62
No response	25	18.38	136	100.00

Dug/installed a new well to serve this property				
Q6_5	Frequency	Percent	Cumulative Frequency	Cumulative Percent
Yes, made this change	28	20.59	28	20.59
No, did not make this change	86	63.24	114	83.82
Don't know	4	2.94	118	86.76
No response	18	13.24	136	100.00

Other				
Q6_6	Frequency	Percent	Cumulative Frequency	Cumulative Percent
Yes, made this change	10	7.35	10	7.35
No response	126	92.65	136	100.00

Groundwater in Harney Basin
A questionnaire for residential well users in Harney Basin
Harney County Watershed Council
Basic Frequencies

The number of changes/improvements made to this well listed in question 6.
(Respondents who answered 'Yes' to question 5)

The FREQ Procedure

sumchange	Frequency	Percent	Cumulative Frequency	Cumulative Percent
0	35	25.74	35	25.74
1	48	35.29	83	61.03
2	32	23.53	115	84.56
3	13	9.56	128	94.12
4	6	4.41	134	98.53
5	2	1.47	136	100.00

Groundwater in Harney Basin
A questionnaire for residential well users in Harney Basin
Harney County Watershed Council
Basic Frequencies

Question 7. Is the water pumped from this well potable (safe to drink)?

The FREQ Procedure

Q7	Frequency	Percent	Cumulative Frequency	Cumulative Percent
Yes	388	82.20	388	82.20
No	48	10.17	436	92.37
Don't know	33	6.99	469	99.36
No response	3	0.64	472	100.00
Frequency Missing = 102				

Groundwater in Harney Basin
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Basic Frequencies

Question 8. Have you noticed a change in water quality in this well in the last 10 years?

The FREQ Procedure

Q8	Frequency	Percent	Cumulative Frequency	Cumulative Percent
Yes	83	17.58	83	17.58
No	330	69.92	413	87.50
Don't know	52	11.02	465	98.52
No response	7	1.48	472	100.00
Frequency Missing = 102				

Groundwater in Harney Basin
A questionnaire for residential well users in Harney Basin
Harney County Watershed Council
Basic Frequencies

Question 9. Have you had the water quality of this well tested in the last 10 years?

The FREQ Procedure

Q9	Frequency	Percent	Cumulative Frequency	Cumulative Percent
Yes, tested once	155	32.84	155	32.84
Yes, tested more than once	68	14.41	223	47.25
No	224	47.46	447	94.70
Don't know	24	5.08	471	99.79
No response	1	0.21	472	100.00
Frequency Missing = 102				

Groundwater in Harney Basin
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Basic Frequencies

Question 9a. Please indicate whether each of the following was detected or not in any of tests and provide the concentration amount, if known.

The FREQ Procedure

Iron				
Q9a_1	Frequency	Percent	Cumulative Frequency	Cumulative Percent
Not detected	79	35.43	79	35.43
Detected	59	26.46	138	61.88
No response	85	38.12	223	100.00
Frequency Missing = 351				

Nitrates				
Q9a_2	Frequency	Percent	Cumulative Frequency	Cumulative Percent
Not detected	102	45.74	102	45.74
Detected	41	18.39	143	64.13
No response	80	35.87	223	100.00
Frequency Missing = 351				

Arsenic				
Q9a_3	Frequency	Percent	Cumulative Frequency	Cumulative Percent
Not detected	86	38.57	86	38.57
Detected	88	39.46	174	78.03
No response	49	21.97	223	100.00
Frequency Missing = 351				

Groundwater in Harney Basin
A questionnaire for residential well users in Harney Basin
Harney County Watershed Council
Basic Frequencies

Question 9a. Please indicate whether each of the following was detected or not in any of tests and provide the concentration amount, if known.

The FREQ Procedure

Other				
Q9a_4	Frequency	Percent	Cumulative Frequency	Cumulative Percent
Detected	29	13.00	29	13.00
No response	194	87.00	223	100.00
Frequency Missing = 351				

Groundwater in Harney Basin
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Harney County Watershed Council
Basic Frequencies

Question 9. Have you had the water quality of this well tested in the last 10 years?
(Respondents who answered 'Yes' to question 8)

The FREQ Procedure

Q9	Frequency	Percent	Cumulative Frequency	Cumulative Percent
Yes, tested once	21	25.30	21	25.30
Yes, tested more than once	23	27.71	44	53.01
No	37	44.58	81	97.59
Don't know	2	2.41	83	100.00

Groundwater in Harney Basin
A questionnaire for residential well users in Harney Basin
Harney County Watershed Council
Basic Frequencies

Question 9a. Please indicate whether each of the following was detected or not in any of tests and provide the concentration amount, if known.
(Respondents who answered 'Yes' to question 8)

The FREQ Procedure

Iron				
Q9a_1	Frequency	Percent	Cumulative Frequency	Cumulative Percent
Not detected	9	20.45	9	20.45
Detected	19	43.18	28	63.64
No response	16	36.36	44	100.00
Frequency Missing = 39				

Nitrates				
Q9a_2	Frequency	Percent	Cumulative Frequency	Cumulative Percent
Not detected	11	25.00	11	25.00
Detected	14	31.82	25	56.82
No response	19	43.18	44	100.00
Frequency Missing = 39				

Arsenic				
Q9a_3	Frequency	Percent	Cumulative Frequency	Cumulative Percent
Not detected	11	25.00	11	25.00
Detected	23	52.27	34	77.27
No response	10	22.73	44	100.00
Frequency Missing = 39				

Groundwater in Harney Basin
A questionnaire for residential well users in Harney Basin
Harney County Watershed Council
Basic Frequencies

***Question 9a. Please indicate whether each of the following was detected or not in any of tests and provide the concentration amount, if known.
(Respondents who answered 'Yes' to question 8)***

The FREQ Procedure

Other				
Q9a_4	Frequency	Percent	Cumulative Frequency	Cumulative Percent
Detected	14	31.82	14	31.82
No response	30	68.18	44	100.00
Frequency Missing = 39				

Groundwater in Harney Basin
A questionnaire for residential well users in Harney Basin
Harney County Watershed Council
Basic Frequencies

Question 10. Have you done anything to address water quality concerns (e.g., chemical or filtration treatment, reverse osmosis system)?

The FREQ Procedure

Q10	Frequency	Percent	Cumulative Frequency	Cumulative Percent
Yes	121	25.64	121	25.64
No	341	72.25	462	97.88
Don't know	7	1.48	469	99.36
No response	3	0.64	472	100.00
Frequency Missing = 102				

Groundwater in Harney Basin
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Basic Frequencies

Question 10. Have you done anything to address water quality concerns (e.g., chemical or filtration treatment, reverse osmosis system)?
(Respondents who answered 'No' to question 7 or 'Yes' to question 8)

The FREQ Procedure

Q10	Frequency	Percent	Cumulative Frequency	Cumulative Percent
Yes	61	55.45	61	55.45
No	48	43.64	109	99.09
No response	1	0.91	110	100.00

Groundwater in Harney Basin
A questionnaire for residential well users in Harney Basin
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Basic Frequencies

Question 10. Have you done anything to address water quality concerns (e.g., chemical or filtration treatment, reverse osmosis system)?
(Respondents who answered 'No' to question 7)

The FREQ Procedure

Q10	Frequency	Percent	Cumulative Frequency	Cumulative Percent
Yes	32	66.67	32	66.67
No	15	31.25	47	97.92
No response	1	2.08	48	100.00

Groundwater in Harney Basin
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Basic Frequencies

Question 10. Have you done anything to address water quality concerns (e.g., chemical or filtration treatment, reverse osmosis system)?
(Respondents who answered 'Yes' to question 8)

The FREQ Procedure

Q10	Frequency	Percent	Cumulative Frequency	Cumulative Percent
Yes	44	53.01	44	53.01
No	39	46.99	83	100.00

Groundwater in Harney Basin
A questionnaire for residential well users in Harney Basin
Harney County Watershed Council
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Question 11. What year was this primary residential well installed? (Please mark Don't Know if you are unsure)

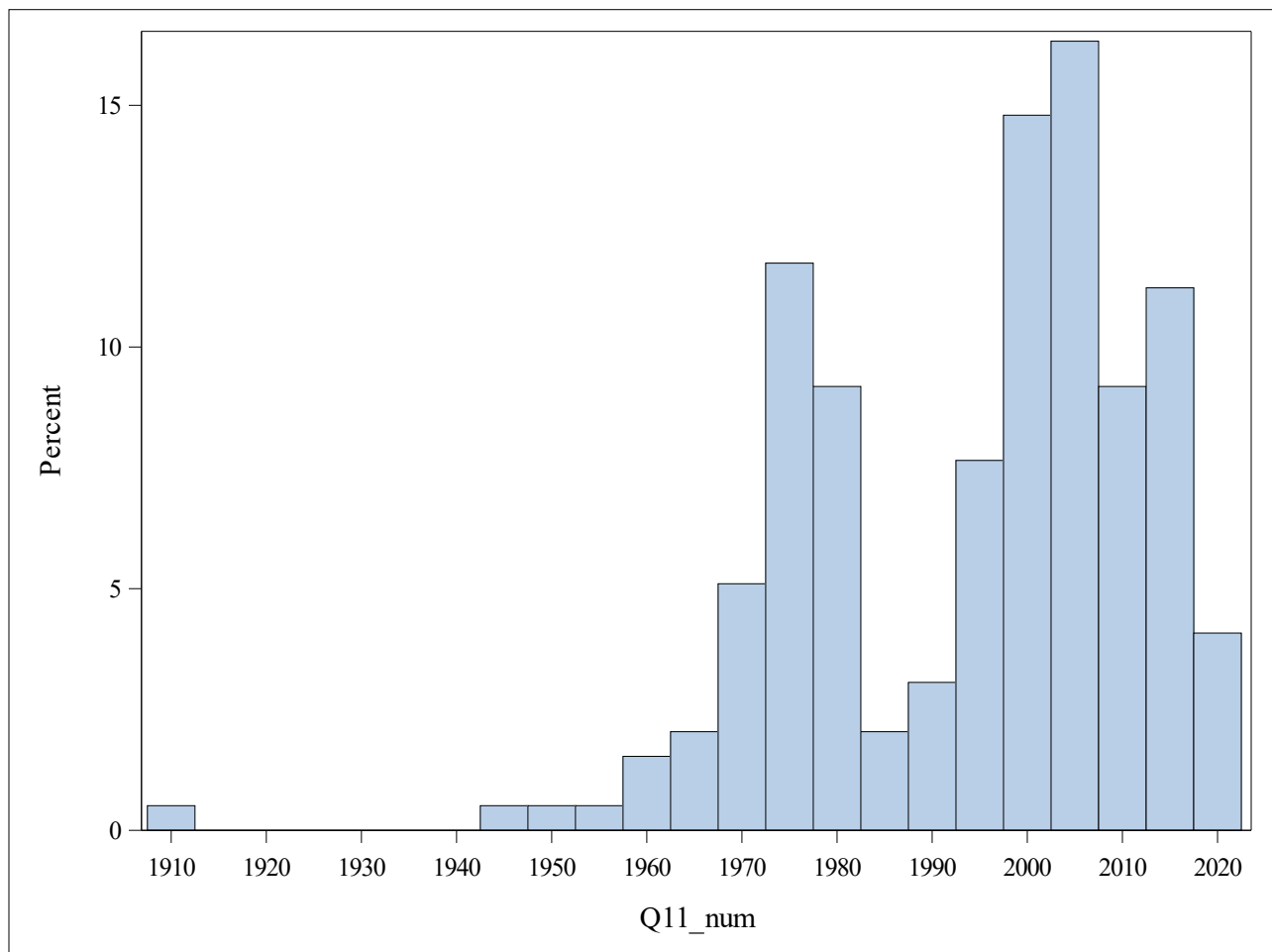
The FREQ Procedure

Q11	Frequency	Percent	Cumulative Frequency	Cumulative Percent
Don't know	270	57.20	270	57.20
1910	1	0.21	271	57.42
1945	1	0.21	272	57.63
1952	1	0.21	273	57.84
1956	1	0.21	274	58.05
1960	3	0.64	277	58.69
1963	3	0.64	280	59.32
1967	1	0.21	281	59.53
1968	3	0.64	284	60.17
1969	2	0.42	286	60.59
1970	2	0.42	288	61.02
1971	1	0.21	289	61.23
1972	2	0.42	291	61.65
1973	6	1.27	297	62.92
1974	5	1.06	302	63.98
1975	6	1.27	308	65.25
1976	4	0.85	312	66.10
1977	2	0.42	314	66.53
1978	1	0.21	315	66.74
1979	7	1.48	322	68.22
1980	4	0.85	326	69.07
1981	5	1.06	331	70.13
1982	1	0.21	332	70.34
1983	1	0.21	333	70.55
1986	1	0.21	334	70.76
1987	2	0.42	336	71.19

Q11	Frequency	Percent	Cumulative Frequency	Cumulative Percent
1989	3	0.64	339	71.82
1990	1	0.21	340	72.03
1991	1	0.21	341	72.25
1992	1	0.21	342	72.46
1994	1	0.21	343	72.67
1995	3	0.64	346	73.31
1996	3	0.64	349	73.94
1997	8	1.69	357	75.64
1998	9	1.91	366	77.54
1999	10	2.12	376	79.66
2000	6	1.27	382	80.93
2001	1	0.21	383	81.14
2002	3	0.64	386	81.78
2003	1	0.21	387	81.99
2004	6	1.27	393	83.26
2005	8	1.69	401	84.96
2006	6	1.27	407	86.23
2007	11	2.33	418	88.56
2008	3	0.64	421	89.19
2009	7	1.48	428	90.68
2010	2	0.42	430	91.10
2011	2	0.42	432	91.53
2012	4	0.85	436	92.37
2013	3	0.64	439	93.01
2014	5	1.06	444	94.07
2015	8	1.69	452	95.76
2016	5	1.06	457	96.82
2017	1	0.21	458	97.03
2018	5	1.06	463	98.09
2019	3	0.64	466	98.73
No response	6	1.27	472	100.00
Frequency Missing = 102				

Groundwater in Harney Basin
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Question 11. What year was this primary residential well installed? (Please mark Don't Know if you are unsure)



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Question 11. What year was this primary residential well installed? (Please mark Don't Know if you are unsure)
(Respondents who answered 'No' to question 4 or 'Yes' to question 5)

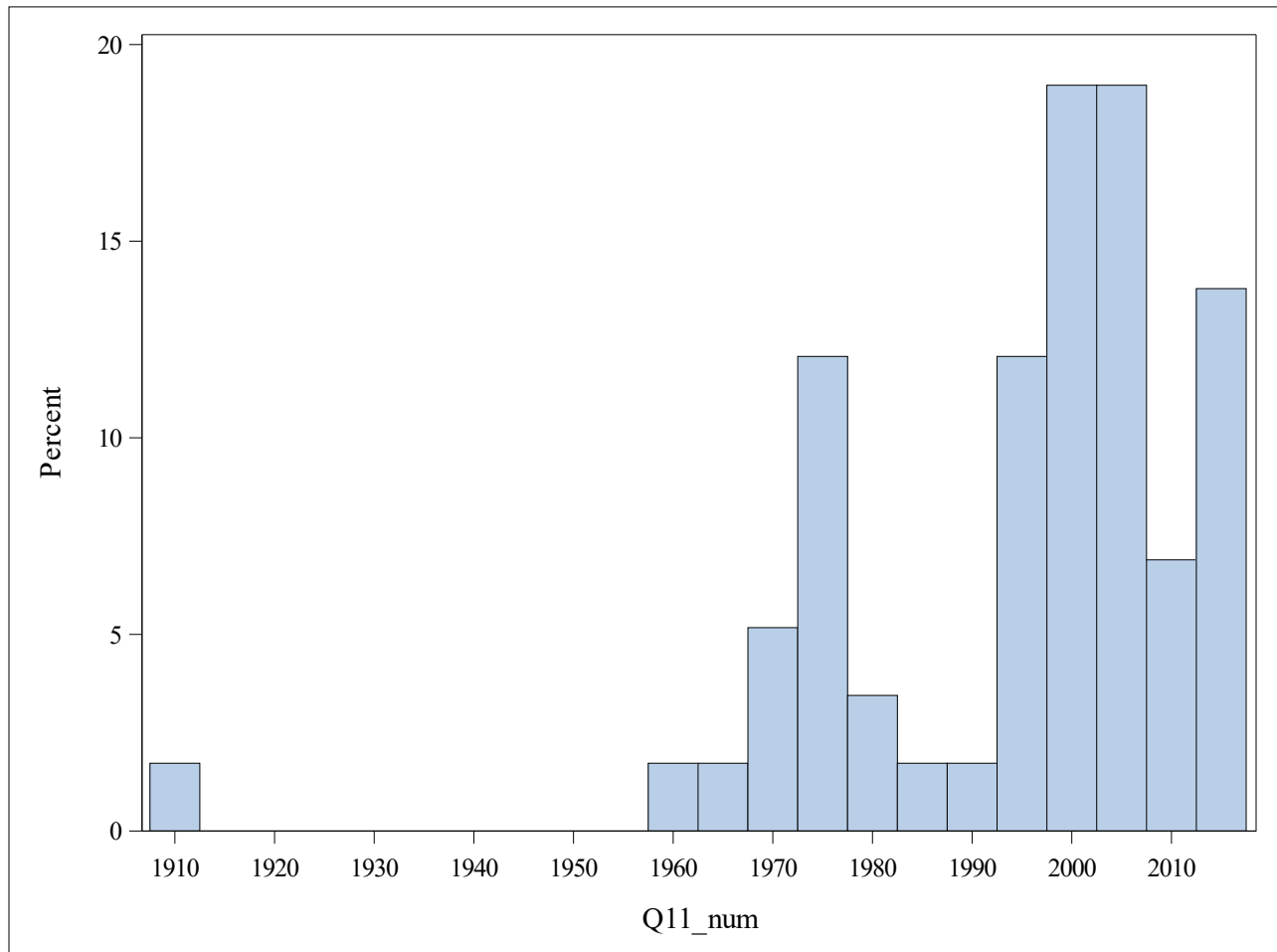
The FREQ Procedure

Q11	Frequency	Percent	Cumulative Frequency	Cumulative Percent
Don't know	85	59.44	85	59.44
1910	1	0.70	86	60.14
1960	1	0.70	87	60.84
1963	1	0.70	88	61.54
1969	2	1.40	90	62.94
1970	1	0.70	91	63.64
1974	4	2.80	95	66.43
1975	1	0.70	96	67.13
1976	1	0.70	97	67.83
1977	1	0.70	98	68.53
1979	1	0.70	99	69.23
1981	1	0.70	100	69.93
1983	1	0.70	101	70.63
1990	1	0.70	102	71.33
1994	1	0.70	103	72.03
1997	6	4.20	109	76.22
1998	4	2.80	113	79.02
1999	2	1.40	115	80.42
2000	4	2.80	119	83.22
2002	1	0.70	120	83.92
2003	1	0.70	121	84.62
2005	1	0.70	122	85.31
2006	3	2.10	125	87.41
2007	6	4.20	131	91.61
2009	3	2.10	134	93.71

Q11	Frequency	Percent	Cumulative Frequency	Cumulative Percent
2010	1	0.70	135	94.41
2013	2	1.40	137	95.80
2014	3	2.10	140	97.90
2015	2	1.40	142	99.30
2016	1	0.70	143	100.00

Groundwater in Harney Basin
A questionnaire for residential well users in Harney Basin
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Question 11. What year was this primary residential well installed? (Please mark Don't Know if you are unsure)
(Respondents who answered 'No' to question 4 or 'Yes' to question 5)



Groundwater in Harney Basin
A questionnaire for residential well users in Harney Basin
Harney County Watershed Council
Basic Frequencies

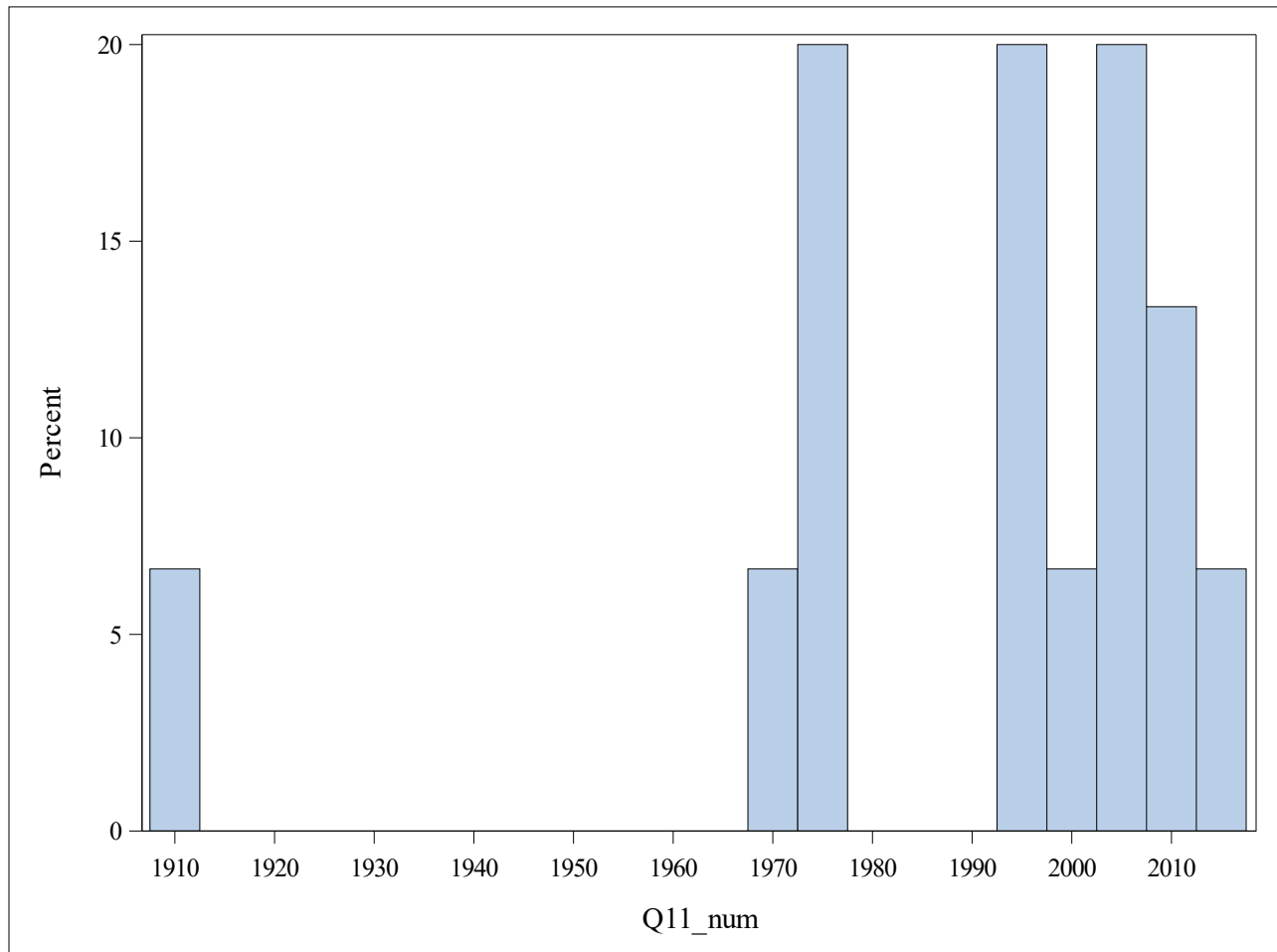
Question 11. What year was this primary residential well installed? (Please mark Don't Know if you are unsure)
(Respondents who answered 'No' to question 4)

The FREQ Procedure

Q11	Frequency	Percent	Cumulative Frequency	Cumulative Percent
Don't know	26	63.41	26	63.41
1910	1	2.44	27	65.85
1969	1	2.44	28	68.29
1974	2	4.88	30	73.17
1977	1	2.44	31	75.61
1994	1	2.44	32	78.05
1997	2	4.88	34	82.93
1998	1	2.44	35	85.37
2006	1	2.44	36	87.80
2007	2	4.88	38	92.68
2009	2	4.88	40	97.56
2013	1	2.44	41	100.00

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A questionnaire for residential well users in Harney Basin
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Question 11. What year was this primary residential well installed? (Please mark Don't Know if you are unsure)
(Respondents who answered 'No' to question 4)



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Question 11. What year was this primary residential well installed? (Please mark Don't Know if you are unsure)
(Respondents who answered 'Yes' to question 5)

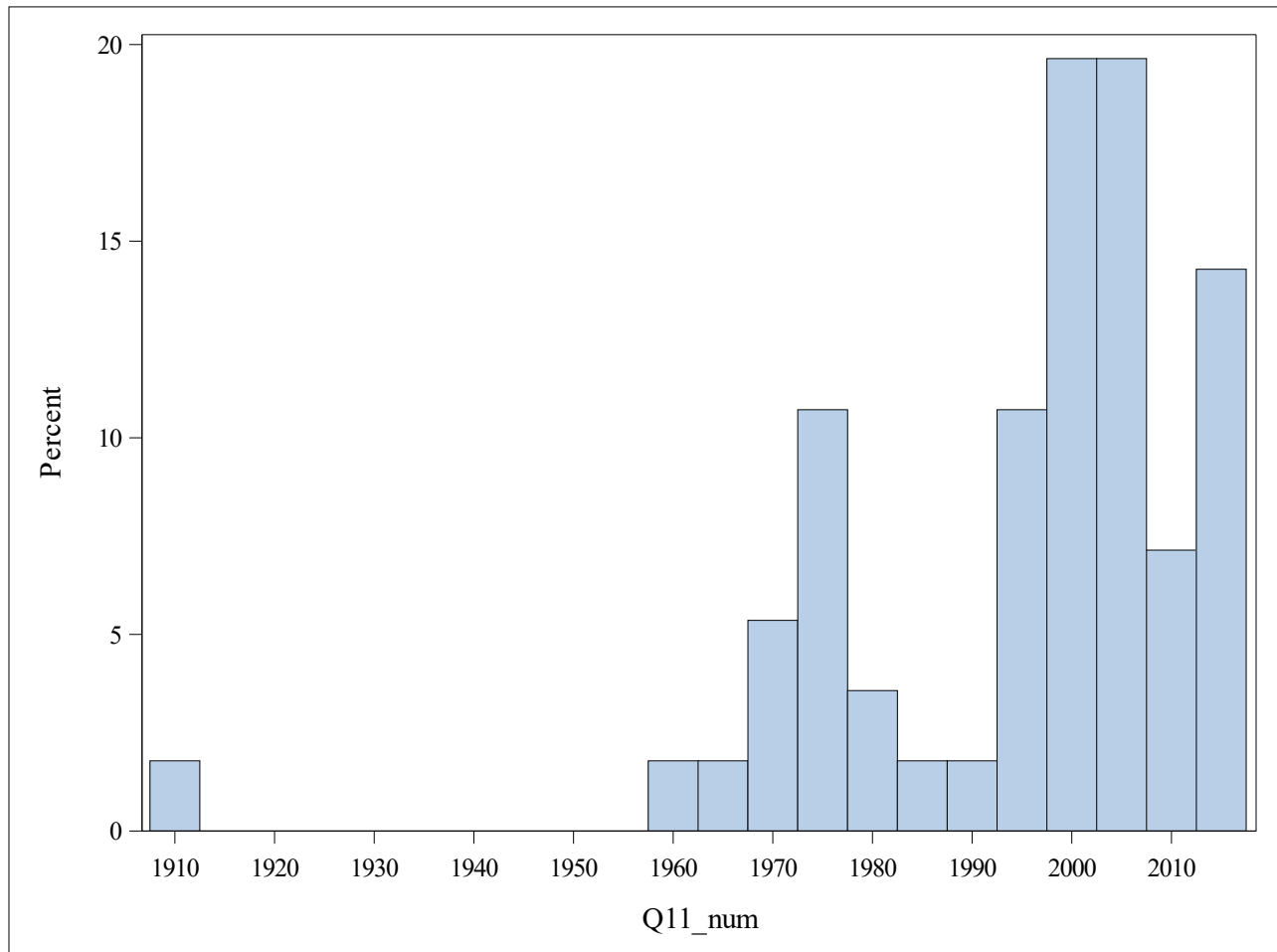
The FREQ Procedure

Q11	Frequency	Percent	Cumulative Frequency	Cumulative Percent
Don't know	80	58.82	80	58.82
1910	1	0.74	81	59.56
1960	1	0.74	82	60.29
1963	1	0.74	83	61.03
1969	2	1.47	85	62.50
1970	1	0.74	86	63.24
1974	4	2.94	90	66.18
1975	1	0.74	91	66.91
1976	1	0.74	92	67.65
1979	1	0.74	93	68.38
1981	1	0.74	94	69.12
1983	1	0.74	95	69.85
1990	1	0.74	96	70.59
1997	6	4.41	102	75.00
1998	4	2.94	106	77.94
1999	2	1.47	108	79.41
2000	4	2.94	112	82.35
2002	1	0.74	113	83.09
2003	1	0.74	114	83.82
2005	1	0.74	115	84.56
2006	3	2.21	118	86.76
2007	6	4.41	124	91.18
2009	3	2.21	127	93.38
2010	1	0.74	128	94.12
2013	2	1.47	130	95.59

Q11	Frequency	Percent	Cumulative Frequency	Cumulative Percent
2014	3	2.21	133	97.79
2015	2	1.47	135	99.26
2016	1	0.74	136	100.00

Groundwater in Harney Basin
A questionnaire for residential well users in Harney Basin
Harney County Watershed Council
Basic Frequencies

Question 11. What year was this primary residential well installed? (Please mark Don't Know if you are unsure)
(Respondents who answered 'Yes' to question 5)



Groundwater in Harney Basin
A questionnaire for residential well users in Harney Basin
Harney County Watershed Council
Basic Frequencies

Question 12. How deep is this well?

The FREQ Procedure

Q12	Frequency	Percent	Cumulative Frequency	Cumulative Percent
50 feet or less	32	6.78	32	6.78
51 to 100 feet	112	23.73	144	30.51
101 to 250 feet	147	31.14	291	61.65
251 to 500 feet	45	9.53	336	71.19
More than 500 feet	6	1.27	342	72.46
Don't know	123	26.06	465	98.52
No response	7	1.48	472	100.00
Frequency Missing = 102				

Groundwater in Harney Basin
A questionnaire for residential well users in Harney Basin
Harney County Watershed Council
Basic Frequencies

Question 12. How deep is this well?
(Respondents who answered 'Yes' to question 5)

The FREQ Procedure

Q12	Frequency	Percent	Cumulative Frequency	Cumulative Percent
50 feet or less	10	7.35	10	7.35
51 to 100 feet	35	25.74	45	33.09
101 to 250 feet	46	33.82	91	66.91
251 to 500 feet	11	8.09	102	75.00
More than 500 feet	5	3.68	107	78.68
Don't know	28	20.59	135	99.26
No response	1	0.74	136	100.00

Groundwater in Harney Basin
A questionnaire for residential well users in Harney Basin
Harney County Watershed Council
Basic Frequencies

Question 13. Have you brought in water for household or outdoor use from another source in the last 10 years? For example, hauling water from another source or from a secondary well.

The FREQ Procedure

Q13	Frequency	Percent	Cumulative Frequency	Cumulative Percent
Yes	130	27.54	130	27.54
No	329	69.70	459	97.25
Don't know	11	2.33	470	99.58
No response	2	0.42	472	100.00
Frequency Missing = 102				

Groundwater in Harney Basin
A questionnaire for residential well users in Harney Basin
Harney County Watershed Council
Basic Frequencies

***Question 13. Have you brought in water for household or outdoor use from another source in the last 10 years? For example, hauling water from another source or from a secondary well.
(Respondents who answered 'No' to question 4 or 'Yes' to question 5)***

The FREQ Procedure

Q13	Frequency	Percent	Cumulative Frequency	Cumulative Percent
Yes	71	49.65	71	49.65
No	71	49.65	142	99.30
No response	1	0.70	143	100.00

Groundwater in Harney Basin
A questionnaire for residential well users in Harney Basin
Harney County Watershed Council
Basic Frequencies

Question 13. Have you brought in water for household or outdoor use from another source in the last 10 years? For example, hauling water from another source or from a secondary well.
(Respondents who answered No' to question 4)

The FREQ Procedure

Q13	Frequency	Percent	Cumulative Frequency	Cumulative Percent
Yes	29	70.73	29	70.73
No	12	29.27	41	100.00

Groundwater in Harney Basin
A questionnaire for residential well users in Harney Basin
Harney County Watershed Council
Basic Frequencies

Question 13. Have you brought in water for household or outdoor use from another source in the last 10 years? For example, hauling water from another source or from a secondary well.
(Respondents who answered 'Yes' to question 5)

The FREQ Procedure

Q13	Frequency	Percent	Cumulative Frequency	Cumulative Percent
Yes	67	49.26	67	49.26
No	68	50.00	135	99.26
No response	1	0.74	136	100.00

Groundwater in Harney Basin
A questionnaire for residential well users in Harney Basin
Harney County Watershed Council
Basic Frequencies

Question 13a. Please indicate whether or not you brought in water from another source for each of the following purposes.

The FREQ Procedure

Drinking/cooking				
Q13a_1	Frequency	Percent	Cumulative Frequency	Cumulative Percent
Yes, brought in for this	118	90.77	118	90.77
No, not brought in for this	4	3.08	122	93.85
No response	8	6.15	130	100.00
Frequency Missing = 444				

Other indoor use				
Q13a_2	Frequency	Percent	Cumulative Frequency	Cumulative Percent
Yes, brought in for this	35	26.92	35	26.92
No, not brought in for this	74	56.92	109	83.85
No response	21	16.15	130	100.00
Frequency Missing = 444				

Irrigation of any lawn or noncommercial garden of 1/2 acre or less				
Q13a_3	Frequency	Percent	Cumulative Frequency	Cumulative Percent
Yes, brought in for this	21	16.15	21	16.15
No, not brought in for this	89	68.46	110	84.62
No response	20	15.38	130	100.00
Frequency Missing = 444				

Groundwater in Harney Basin
A questionnaire for residential well users in Harney Basin
Harney County Watershed Council
Basic Frequencies

Question 13a. Please indicate whether or not you brought in water from another source for each of the following purposes.

The FREQ Procedure

Livestock				
Q13a_4	Frequency	Percent	Cumulative Frequency	Cumulative Percent
Yes, brought in for this	28	21.54	28	21.54
No, not brought in for this	84	64.62	112	86.15
No response	18	13.85	130	100.00
Frequency Missing = 444				

Other				
Q13a_5	Frequency	Percent	Cumulative Frequency	Cumulative Percent
Yes, brought in for this	10	7.69	10	7.69
No response	120	92.31	130	100.00
Frequency Missing = 444				

Groundwater in Harney Basin
A questionnaire for residential well users in Harney Basin
Harney County Watershed Council
Basic Frequencies

Question 14. Do you have an additional functioning residential well on this property?

The FREQ Procedure

Q14	Frequency	Percent	Cumulative Frequency	Cumulative Percent
Yes	75	15.89	75	15.89
No	388	82.20	463	98.09
Don't know	4	0.85	467	98.94
No response	5	1.06	472	100.00
Frequency Missing = 102				

Groundwater in Harney Basin
A questionnaire for residential well users in Harney Basin
Harney County Watershed Council
Basic Frequencies

Question 14a. Please indicate whether or not this well is used for each of the following purposes.

The FREQ Procedure

Drinking/cooking				
Q14a_1	Frequency	Percent	Cumulative Frequency	Cumulative Percent
Yes, used for this	31	41.33	31	41.33
No, not used for this	21	28.00	52	69.33
No response	23	30.67	75	100.00
Frequency Missing = 499				

Other indoor use				
Q14a_2	Frequency	Percent	Cumulative Frequency	Cumulative Percent
Yes, used for this	29	38.67	29	38.67
No, not used for this	22	29.33	51	68.00
No response	24	32.00	75	100.00
Frequency Missing = 499				

Irrigation of any lawn or noncommercial garden of 1/2 acre or less				
Q14a_3	Frequency	Percent	Cumulative Frequency	Cumulative Percent
Yes, used for this	46	61.33	46	61.33
No, not used for this	12	16.00	58	77.33
No response	17	22.67	75	100.00
Frequency Missing = 499				

Groundwater in Harney Basin
A questionnaire for residential well users in Harney Basin
Harney County Watershed Council
Basic Frequencies

Question 14a. Please indicate whether or not this well is used for each of the following purposes.

The FREQ Procedure

Livestock				
Q14a_4	Frequency	Percent	Cumulative Frequency	Cumulative Percent
Yes, used for this	50	66.67	50	66.67
No, not used for this	11	14.67	61	81.33
No response	14	18.67	75	100.00
Frequency Missing = 499				

Other				
Q14a_5	Frequency	Percent	Cumulative Frequency	Cumulative Percent
Yes, used for this	8	10.67	8	10.67
No response	67	89.33	75	100.00
Frequency Missing = 499				

Groundwater in Harney Basin
A questionnaire for residential well users in Harney Basin
Harney County Watershed Council
Basic Frequencies

Question 14b. Thinking about the last 10 years, has this additional residential well experienced a decline in yield (volume pumped) or rate (e.g., gallons per minute)? Evidence of this could include sucking air or sand.

The FREQ Procedure

Q14b	Frequency	Percent	Cumulative Frequency	Cumulative Percent
Yes	15	20.00	15	20.00
No	47	62.67	62	82.67
Don't know	13	17.33	75	100.00
Frequency Missing = 499				

APPENDIX C-2: CLOSED-ENDED QUESTION RESPONSE FREQUENCIES, CROSS-TABULATIONS BY SUB-BASIN

***Groundwater in Harney Basin
A questionnaire for residential well users in Harney Basin
Harney County Watershed Council
Sub-basin Crosstabs***

Disposition by Sub-basin for all questionnaires

The FREQ Procedure

Table of DISP by SUB_BASIN					
DISP	SUB_BASIN				
Frequency Percent Row Pct Col Pct	Silvies	Harney-Malheur Lakes	Donner and Blitzen	Silver Creek	Total
Not returned	240 19.22 39.93 48.10	304 24.34 50.58 48.25	27 2.16 4.49 50.00	30 2.40 4.99 45.45	601 48.12
Completed	225 18.01 39.20 45.09	296 23.70 51.57 46.98	19 1.52 3.31 35.19	34 2.72 5.92 51.52	574 45.96
Refusal	15 1.20 39.47 3.01	16 1.28 42.11 2.54	5 0.40 13.16 9.26	2 0.16 5.26 3.03	38 3.04
Undeliverable	14 1.12 58.33 2.81	10 0.80 41.67 1.59	0 0.00 0.00 0.00	0 0.00 0.00 0.00	24 1.92
Deceased	2 0.16 25.00 0.40	3 0.24 37.50 0.48	3 0.24 37.50 5.56	0 0.00 0.00 0.00	8 0.64
Other (outside sampling/population frame: duplicate, invalid property, etc)	3 0.24 75.00 0.60	1 0.08 25.00 0.16	0 0.00 0.00 0.00	0 0.00 0.00 0.00	4 0.32
Total	499 39.95	630 50.44	54 4.32	66 5.28	1249 100.00

***Groundwater in Harney Basin
A questionnaire for residential well users in Harney Basin
Harney County Watershed Council
Sub-basin Crosstabs***

Wave by Sub-basin for all questionnaires

The FREQ Procedure

Table of WAVE by SUB_BASIN					
WAVE	SUB_BASIN				
Frequency Percent Row Pct Col Pct	Silvies	Harney-Malheur Lakes	Donner and Blitzen	Silver Creek	Total
First mailing wave	188	230	22	14	454
	15.05	18.41	1.76	1.12	36.35
	41.41	50.66	4.85	3.08	
	37.68	36.51	40.74	21.21	
Second mailing wave	71	96	5	22	194
	5.68	7.69	0.40	1.76	15.53
	36.60	49.48	2.58	11.34	
	14.23	15.24	9.26	33.33	
Not applicable	240	304	27	30	601
	19.22	24.34	2.16	2.40	48.12
	39.93	50.58	4.49	4.99	
	48.10	48.25	50.00	45.45	
Total	499	630	54	66	1249
	39.95	50.44	4.32	5.28	100.00

***Groundwater in Harney Basin
A questionnaire for residential well users in Harney Basin
Harney County Watershed Council
Sub-basin Crosstabs***

Wave by Sub-basin for completed questionnaires

The FREQ Procedure

Table of WAVE by SUB_BASIN					
WAVE	SUB_BASIN				
Frequency Percent Row Pct Col Pct	Silvies	Harney-Malheur Lakes	Donner and Blitzen	Silver Creek	Total
First mailing wave	161	211	14	12	398
	28.05	36.76	2.44	2.09	69.34
	40.45	53.02	3.52	3.02	
	71.56	71.28	73.68	35.29	
Second mailing wave	64	85	5	22	176
	11.15	14.81	0.87	3.83	30.66
	36.36	48.30	2.84	12.50	
	28.44	28.72	26.32	64.71	
Total	225	296	19	34	574
	39.20	51.57	3.31	5.92	100.00

Groundwater in Harney Basin
A questionnaire for residential well users in Harney Basin
Harney County Watershed Council
Sub-basin Crosstabs

**Question 1. Does the property indicated on the cover letter currently have a
residential well on site?**

The *FREQ* Procedure

Table of Q1 by SUB_BASIN					
Q1	SUB_BASIN				
Frequency Percent Row Pct Col Pct	Silvies	Harney-Malheur Lakes	Donner and Blitzen	Silver Creek	Total
Yes	157 27.35 33.26 69.78	274 47.74 58.05 92.57	16 2.79 3.39 84.21	25 4.36 5.30 73.53	472 82.23
No	63 10.98 64.95 28.00	22 3.83 22.68 7.43	3 0.52 3.09 15.79	9 1.57 9.28 26.47	97 16.90
Don't know	5 0.87 100.00 2.22	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	5 0.87
Total	225 39.20	296 51.57	19 3.31	34 5.92	574 100.00

Groundwater in Harney Basin
A questionnaire for residential well users in Harney Basin
Harney County Watershed Council
Sub-basin Crosstabs

**Question 2. About how many people rely on the primary residential well at this property
for general household and outdoor use?**

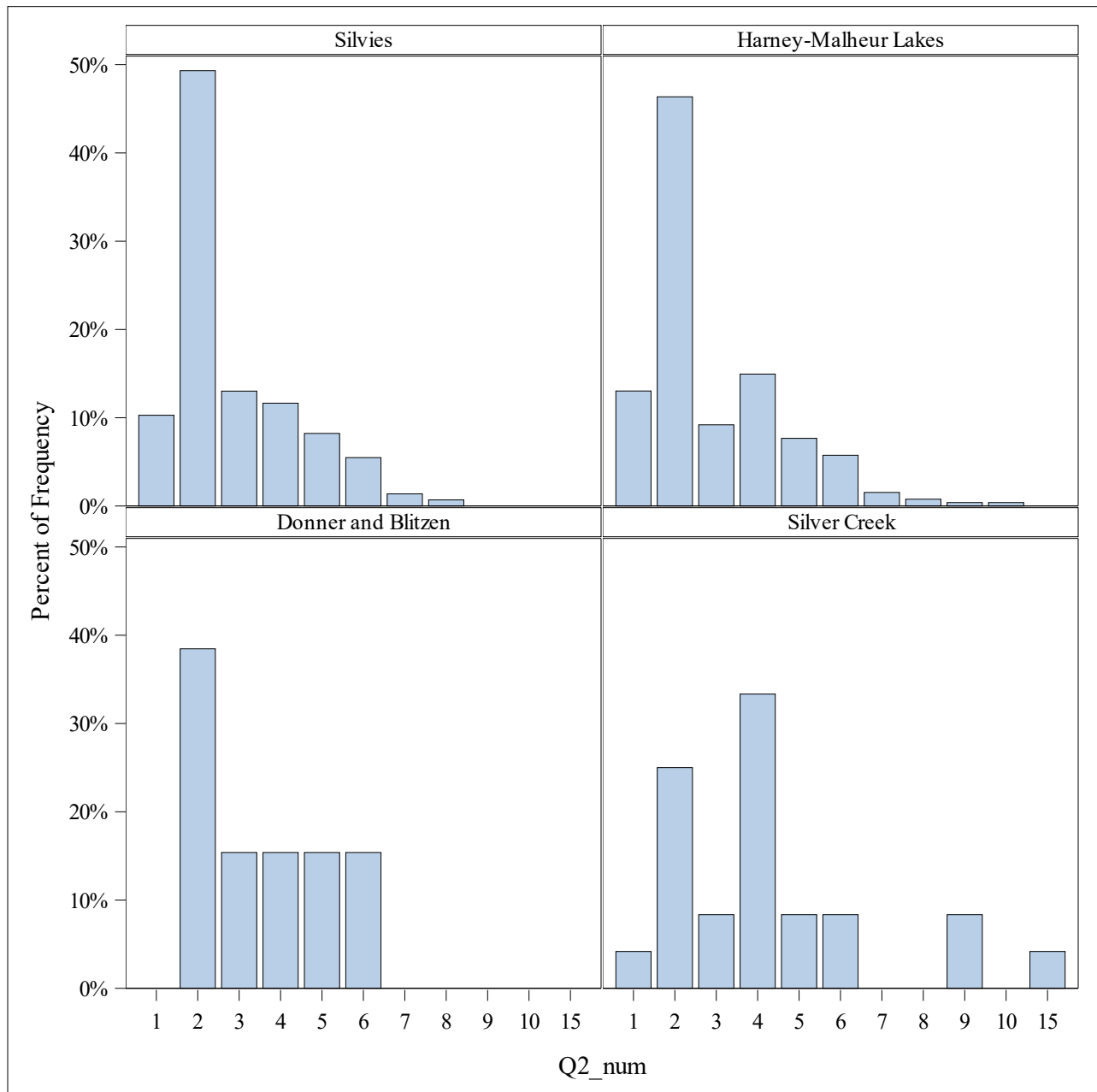
The FREQ Procedure

Table of Q2 by SUB_BASIN					
Q2	SUB_BASIN				
Frequency Percent Row Pct Col Pct	Silvies	Harney-Malheur Lakes	Donner and Blitzen	Silver Creek	Total
Don't know	7 1.48 53.85 4.46	6 1.27 46.15 2.19	0 0.00 0.00 0.00	0 0.00 0.00 0.00	13 2.75
1	15 3.18 30.00 9.55	34 7.20 68.00 12.41	0 0.00 0.00 0.00	1 0.21 2.00 4.00	50 10.59
2	72 15.25 35.29 45.86	121 25.64 59.31 44.16	5 1.06 2.45 31.25	6 1.27 2.94 24.00	204 43.22
3	19 4.03 40.43 12.10	24 5.08 51.06 8.76	2 0.42 4.26 12.50	2 0.42 4.26 8.00	47 9.96
4	17 3.60 25.76 10.83	39 8.26 59.09 14.23	2 0.42 3.03 12.50	8 1.69 12.12 32.00	66 13.98
5	12 2.54 33.33 7.64	20 4.24 55.56 7.30	2 0.42 5.56 12.50	2 0.42 5.56 8.00	36 7.63
6	8 1.69 29.63 5.10	15 3.18 55.56 5.47	2 0.42 7.41 12.50	2 0.42 7.41 8.00	27 5.72
7	2 0.42 33.33 1.27	4 0.85 66.67 1.46	0 0.00 0.00 0.00	0 0.00 0.00 0.00	6 1.27

Table of Q2 by SUB_BASIN					
Q2	SUB_BASIN				
Frequency Percent Row Pct Col Pct	Silvies	Harney-Malheur Lakes	Donner and Blitzen	Silver Creek	Total
8	1 0.21 33.33 0.64	2 0.42 66.67 0.73	0 0.00 0.00 0.00	0 0.00 0.00 0.00	3 0.64
9	0 0.00 0.00 0.00	1 0.21 33.33 0.36	0 0.00 0.00 0.00	2 0.42 66.67 8.00	3 0.64
10	0 0.00 0.00 0.00	1 0.21 100.00 0.36	0 0.00 0.00 0.00	0 0.00 0.00 0.00	1 0.21
15	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	1 0.21 100.00 4.00	1 0.21
No response	4 0.85 26.67 2.55	7 1.48 46.67 2.55	3 0.64 20.00 18.75	1 0.21 6.67 4.00	15 3.18
Total	157 33.26	274 58.05	16 3.39	25 5.30	472 100.00
Frequency Missing = 102					

Groundwater in Harney Basin
A questionnaire for residential well users in Harney Basin
Harney County Watershed Council
Sub-basin Crosstabs

Question 2. About how many people rely on the primary residential well at this property for general household and outdoor use?



Groundwater in Harney Basin
A questionnaire for residential well users in Harney Basin
Harney County Watershed Council
Sub-basin Crosstabs

Question 3. Please indicate whether or not this well is used for each of the following purposes.

The FREQ Procedure

Table of Q3_1 by SUB_BASIN					
Q3_1(Drinking/cooking)	SUB_BASIN				
Frequency Percent Row Pct Col Pct	Silvies	Harney-Malheur Lakes	Donner and Blitzen	Silver Creek	Total
Yes, used for this	144 30.51 33.57 91.72	245 51.91 57.11 89.42	16 3.39 3.73 100.00	24 5.08 5.59 96.00	429 90.89
No, not used for this	13 2.75 31.71 8.28	27 5.72 65.85 9.85	0 0.00 0.00 0.00	1 0.21 2.44 4.00	41 8.69
No response	0 0.00 0.00 0.00	2 0.42 100.00 0.73	0 0.00 0.00 0.00	0 0.00 0.00 0.00	2 0.42
Total	157 33.26	274 58.05	16 3.39	25 5.30	472 100.00
Frequency Missing = 102					

Groundwater in Harney Basin
A questionnaire for residential well users in Harney Basin
Harney County Watershed Council
Sub-basin Crosstabs

Question 3. Please indicate whether or not this well is used for each of the following purposes.

The FREQ Procedure

Table of Q3_2 by SUB_BASIN					
Q3_2(Other indoor use)	SUB_BASIN				
Frequency Percent Row Pct Col Pct	Silvies	Harney-Malheur Lakes	Donner and Blitzen	Silver Creek	Total
Yes, used for this	149 31.57 33.11 94.90	260 55.08 57.78 94.89	16 3.39 3.56 100.00	25 5.30 5.56 100.00	450 95.34
No, not used for this	3 0.64 33.33 1.91	6 1.27 66.67 2.19	0 0.00 0.00 0.00	0 0.00 0.00 0.00	9 1.91
No response	5 1.06 38.46 3.18	8 1.69 61.54 2.92	0 0.00 0.00 0.00	0 0.00 0.00 0.00	13 2.75
Total	157 33.26	274 58.05	16 3.39	25 5.30	472 100.00
Frequency Missing = 102					

Groundwater in Harney Basin
A questionnaire for residential well users in Harney Basin
Harney County Watershed Council
Sub-basin Crosstabs

Question 3. Please indicate whether or not this well is used for each of the following purposes.

The FREQ Procedure

Table of Q3_3 by SUB_BASIN					
Q3_3(Irrigation of any lawn or noncommercial garden of 1/2 acre or less)	SUB_BASIN				
Frequency Percent Row Pct Col Pct	Silvies	Harney-Malheur Lakes	Donner and Blitzen	Silver Creek	Total
Yes, used for this	137 29.03 32.62 87.26	245 51.91 58.33 89.42	15 3.18 3.57 93.75	23 4.87 5.48 92.00	420 88.98
No, not used for this	16 3.39 39.02 10.19	22 4.66 53.66 8.03	1 0.21 2.44 6.25	2 0.42 4.88 8.00	41 8.69
No response	4 0.85 36.36 2.55	7 1.48 63.64 2.55	0 0.00 0.00 0.00	0 0.00 0.00 0.00	11 2.33
Total	157 33.26	274 58.05	16 3.39	25 5.30	472 100.00
Frequency Missing = 102					

Groundwater in Harney Basin
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Harney County Watershed Council
Sub-basin Crosstabs

Question 3. Please indicate whether or not this well is used for each of the following purposes.

The FREQ Procedure

Table of Q3_4 by SUB_BASIN					
Q3_4(Livestock)	SUB_BASIN				
Frequency Percent Row Pct Col Pct	Silvies	Harney-Malheur Lakes	Donner and Blitzen	Silver Creek	Total
Yes, used for this	111 23.52 33.84 70.70	196 41.53 59.76 71.53	7 1.48 2.13 43.75	14 2.97 4.27 56.00	328 69.49
No, not used for this	37 7.84 35.92 23.57	49 10.38 47.57 17.88	7 1.48 6.80 43.75	10 2.12 9.71 40.00	103 21.82
No response	9 1.91 21.95 5.73	29 6.14 70.73 10.58	2 0.42 4.88 12.50	1 0.21 2.44 4.00	41 8.69
Total	157 33.26	274 58.05	16 3.39	25 5.30	472 100.00
Frequency Missing = 102					

Groundwater in Harney Basin
A questionnaire for residential well users in Harney Basin
Harney County Watershed Council
Sub-basin Crosstabs

Question 3. Please indicate whether or not this well is used for each of the following purposes.

The FREQ Procedure

Table of Q3_5 by SUB_BASIN					
Q3_5(Other)	SUB_BASIN				
Frequency Percent Row Pct Col Pct	Silvies	Harney-Malheur Lakes	Donner and Blitzen	Silver Creek	Total
Yes, used for this	2 0.42 16.67 1.27	10 2.12 83.33 3.65	0 0.00 0.00 0.00	0 0.00 0.00 0.00	12 2.54
No response	155 32.84 33.70 98.73	264 55.93 57.39 96.35	16 3.39 3.48 100.00	25 5.30 5.43 100.00	460 97.46
Total	157 33.26	274 58.05	16 3.39	25 5.30	472 100.00
Frequency Missing = 102					

Groundwater in Harney Basin
A questionnaire for residential well users in Harney Basin
Harney County Watershed Council
Sub-basin Crosstabs

Question 4. Does this well provide enough water to meet the needs indicated in question 3?

The FREQ Procedure

Table of Q4 by SUB_BASIN					
Q4	SUB_BASIN				
Frequency Percent Row Pct Col Pct	Silvies	Harney-Malheur Lakes	Donner and Blitzen	Silver Creek	Total
Yes	145 30.72 34.44 92.36	235 49.79 55.82 85.77	16 3.39 3.80 100.00	25 5.30 5.94 100.00	421 89.19
No	8 1.69 19.51 5.10	33 6.99 80.49 12.04	0 0.00 0.00 0.00	0 0.00 0.00 0.00	41 8.69
Don't know	4 0.85 44.44 2.55	5 1.06 55.56 1.82	0 0.00 0.00 0.00	0 0.00 0.00 0.00	9 1.91
No response	0 0.00 0.00 0.00	1 0.21 100.00 0.36	0 0.00 0.00 0.00	0 0.00 0.00 0.00	1 0.21
Total	157 33.26	274 58.05	16 3.39	25 5.30	472 100.00
Frequency Missing = 102					

Groundwater in Harney Basin
A questionnaire for residential well users in Harney Basin
Harney County Watershed Council
Sub-basin Crosstabs

Question 5. Thinking about the last 10 years, has this residential well experienced a decline in yield (volume pumped) or rate (e.g., gallons per minute)? Evidence of this could include sucking air or sand.

The FREQ Procedure

Table of Q5 by SUB_BASIN					
Q5	SUB_BASIN				
Frequency Percent Row Pct Col Pct	Silvies	Harney-Malheur Lakes	Donner and Blitzen	Silver Creek	Total
Yes	37 7.84 27.21 23.57	95 20.13 69.85 34.67	1 0.21 0.74 6.25	3 0.64 2.21 12.00	136 28.81
No	91 19.28 34.08 57.96	142 30.08 53.18 51.82	13 2.75 4.87 81.25	21 4.45 7.87 84.00	267 56.57
Don't know	27 5.72 40.91 17.20	36 7.63 54.55 13.14	2 0.42 3.03 12.50	1 0.21 1.52 4.00	66 13.98
No response	2 0.42 66.67 1.27	1 0.21 33.33 0.36	0 0.00 0.00 0.00	0 0.00 0.00 0.00	3 0.64
Total	157 33.26	274 58.05	16 3.39	25 5.30	472 100.00
Frequency Missing = 102					

Groundwater in Harney Basin
A questionnaire for residential well users in Harney Basin
Harney County Watershed Council
Sub-basin Crosstabs

Question 5a. Has this decline been experienced seasonally (e.g., during summer or fall) or constantly (yield has steadily declined over time)?

The FREQ Procedure

Table of Q5a by SUB_BASIN					
Q5a	SUB_BASIN				
Frequency Percent Row Pct Col Pct	Silvies	Harney-Malheur Lakes	Donner and Blitzen	Silver Creek	Total
Seasonally (during summer or fall)	16 11.76 21.92 43.24	56 41.18 76.71 58.95	1 0.74 1.37 100.00	0 0.00 0.00 0.00	73 53.68
Constantly (steady decline over time)	12 8.82 27.91 32.43	30 22.06 69.77 31.58	0 0.00 0.00 0.00	1 0.74 2.33 33.33	43 31.62
Don't know	3 2.21 33.33 8.11	5 3.68 55.56 5.26	0 0.00 0.00 0.00	1 0.74 11.11 33.33	9 6.62
Both Seasonally and Constantly	1 0.74 20.00 2.70	4 2.94 80.00 4.21	0 0.00 0.00 0.00	0 0.00 0.00 0.00	5 3.68
No response	5 3.68 83.33 13.51	0 0.00 0.00 0.00	0 0.00 0.00 0.00	1 0.74 16.67 33.33	6 4.41
Total	37 27.21	95 69.85	1 0.74	3 2.21	136 100.00
Frequency Missing = 438					

Groundwater in Harney Basin
A questionnaire for residential well users in Harney Basin
Harney County Watershed Council
Sub-basin Crosstabs

Question 6. Please indicate whether or not you have made any of the following changes/improvements to this well in the last 10 years to serve this property due to change in well performance?

The FREQ Procedure

Table of Q6_1 by SUB_BASIN					
Q6_1(Deepened well)	SUB_BASIN				
Frequency Percent Row Pct Col Pct	Silvies	Harney-Malheur Lakes	Donner and Blitzen	Silver Creek	Total
Yes, made this change	5 1.06 27.78 3.18	12 2.54 66.67 4.38	0 0.00 0.00 0.00	1 0.21 5.56 4.00	18 3.81
No, did not make this change	131 27.75 34.29 83.44	220 46.61 57.59 80.29	12 2.54 3.14 75.00	19 4.03 4.97 76.00	382 80.93
Don't know	6 1.27 31.58 3.82	12 2.54 63.16 4.38	0 0.00 0.00 0.00	1 0.21 5.26 4.00	19 4.03
No response	15 3.18 28.30 9.55	30 6.36 56.60 10.95	4 0.85 7.55 25.00	4 0.85 7.55 16.00	53 11.23
Total	157 33.26	274 58.05	16 3.39	25 5.30	472 100.00
Frequency Missing = 102					

Groundwater in Harney Basin
A questionnaire for residential well users in Harney Basin
Harney County Watershed Council
Sub-basin Crosstabs

Question 6. Please indicate whether or not you have made any of the following changes/improvements to this well in the last 10 years to serve this property due to change in well performance?

The FREQ Procedure

Table of Q6_2 by SUB_BASIN					
Q6_2(Lowered pump)	SUB_BASIN				
Frequency Percent Row Pct Col Pct	Silvies	Harney-Malheur Lakes	Donner and Blitzen	Silver Creek	Total
Yes, made this change	29 6.14 29.00 18.47	70 14.83 70.00 25.55	1 0.21 1.00 6.25	0 0.00 0.00 0.00	100 21.19
No, did not make this change	113 23.94 35.65 71.97	173 36.65 54.57 63.14	11 2.33 3.47 68.75	20 4.24 6.31 80.00	317 67.16
Don't know	7 1.48 33.33 4.46	13 2.75 61.90 4.74	0 0.00 0.00 0.00	1 0.21 4.76 4.00	21 4.45
No response	8 1.69 23.53 5.10	18 3.81 52.94 6.57	4 0.85 11.76 25.00	4 0.85 11.76 16.00	34 7.20
Total	157 33.26	274 58.05	16 3.39	25 5.30	472 100.00
Frequency Missing = 102					

Groundwater in Harney Basin
A questionnaire for residential well users in Harney Basin
Harney County Watershed Council
Sub-basin Crosstabs

Question 6. Please indicate whether or not you have made any of the following changes/improvements to this well in the last 10 years to serve this property due to change in well performance?

The FREQ Procedure

Table of Q6_3 by SUB_BASIN					
Q6_3(Cleaned well screen)	SUB_BASIN				
Frequency Percent Row Pct Col Pct	Silvies	Harney-Malheur Lakes	Donner and Blitzen	Silver Creek	Total
Yes, made this change	24 5.08 34.78 15.29	43 9.11 62.32 15.69	0 0.00 0.00 0.00	2 0.42 2.90 8.00	69 14.62
No, did not make this change	103 21.82 32.80 65.61	180 38.14 57.32 65.69	12 2.54 3.82 75.00	19 4.03 6.05 76.00	314 66.53
Don't know	15 3.18 40.54 9.55	21 4.45 56.76 7.66	0 0.00 0.00 0.00	1 0.21 2.70 4.00	37 7.84
No response	15 3.18 28.85 9.55	30 6.36 57.69 10.95	4 0.85 7.69 25.00	3 0.64 5.77 12.00	52 11.02
Total	157 33.26	274 58.05	16 3.39	25 5.30	472 100.00
Frequency Missing = 102					

Groundwater in Harney Basin
A questionnaire for residential well users in Harney Basin
Harney County Watershed Council
Sub-basin Crosstabs

Question 6. Please indicate whether or not you have made any of the following changes/improvements to this well in the last 10 years to serve this property due to change in well performance?

The FREQ Procedure

Table of Q6_4 by SUB_BASIN					
Q6_4(Restored casing)	SUB_BASIN				
Frequency Percent Row Pct Col Pct	Silvies	Harney-Malheur Lakes	Donner and Blitzen	Silver Creek	Total
Yes, made this change	6 1.27 27.27 3.82	14 2.97 63.64 5.11	1 0.21 4.55 6.25	1 0.21 4.55 4.00	22 4.66
No, did not make this change	124 26.27 33.88 78.98	211 44.70 57.65 77.01	11 2.33 3.01 68.75	20 4.24 5.46 80.00	366 77.54
Don't know	8 1.69 34.78 5.10	14 2.97 60.87 5.11	0 0.00 0.00 0.00	1 0.21 4.35 4.00	23 4.87
No response	19 4.03 31.15 12.10	35 7.42 57.38 12.77	4 0.85 6.56 25.00	3 0.64 4.92 12.00	61 12.92
Total	157 33.26	274 58.05	16 3.39	25 5.30	472 100.00
Frequency Missing = 102					

Groundwater in Harney Basin
A questionnaire for residential well users in Harney Basin
Harney County Watershed Council
Sub-basin Crosstabs

Question 6. Please indicate whether or not you have made any of the following changes/improvements to this well in the last 10 years to serve this property due to change in well performance?

The FREQ Procedure

Table of Q6_5 by SUB_BASIN					
Q6_5(Dug/installed a new well to serve this property)	SUB_BASIN				
Frequency Percent Row Pct Col Pct	Silvies	Harney-Malheur Lakes	Donner and Blitzen	Silver Creek	Total
Yes, made this change	13 2.75 25.49 8.28	34 7.20 66.67 12.41	2 0.42 3.92 12.50	2 0.42 3.92 8.00	51 10.81
No, did not make this change	121 25.64 34.47 77.07	199 42.16 56.70 72.63	12 2.54 3.42 75.00	19 4.03 5.41 76.00	351 74.36
Don't know	4 0.85 26.67 2.55	10 2.12 66.67 3.65	0 0.00 0.00 0.00	1 0.21 6.67 4.00	15 3.18
No response	19 4.03 34.55 12.10	31 6.57 56.36 11.31	2 0.42 3.64 12.50	3 0.64 5.45 12.00	55 11.65
Total	157 33.26	274 58.05	16 3.39	25 5.30	472 100.00
Frequency Missing = 102					

Groundwater in Harney Basin
A questionnaire for residential well users in Harney Basin
Harney County Watershed Council
Sub-basin Crosstabs

Question 6. Please indicate whether or not you have made any of the following changes/improvements to this well in the last 10 years to serve this property due to change in well performance?

The FREQ Procedure

Table of Q6_6 by SUB_BASIN					
Q6_6(Other)	SUB_BASIN				
Frequency Percent Row Pct Col Pct	Silvies	Harney-Malheur Lakes	Donner and Blitzen	Silver Creek	Total
Yes, made this change	13 2.75 38.24 8.28	17 3.60 50.00 6.20	2 0.42 5.88 12.50	2 0.42 5.88 8.00	34 7.20
No response	144 30.51 32.88 91.72	257 54.45 58.68 93.80	14 2.97 3.20 87.50	23 4.87 5.25 92.00	438 92.80
Total	157 33.26	274 58.05	16 3.39	25 5.30	472 100.00
Frequency Missing = 102					

Groundwater in Harney Basin
A questionnaire for residential well users in Harney Basin
Harney County Watershed Council
Sub-basin Crosstabs

The number of changes/improvements made to this well listed in question 6.

The FREQ Procedure

Table of sumchange by SUB_BASIN					
sumchange	SUB_BASIN				
Frequency Percent Row Pct Col Pct		Harney-Malheur Lakes	Donner and Blitzen	Silver Creek	Total
Silvies					
0	105 22.25 36.08 66.88	157 33.26 53.95 57.30	11 2.33 3.78 68.75	18 3.81 6.19 72.00	291 61.65
1	26 5.51 24.53 16.56	70 14.83 66.04 25.55	4 0.85 3.77 25.00	6 1.27 5.66 24.00	106 22.46
2	17 3.60 34.69 10.83	30 6.36 61.22 10.95	1 0.21 2.04 6.25	1 0.21 2.04 4.00	49 10.38
3	6 1.27 37.50 3.82	10 2.12 62.50 3.65	0 0.00 0.00 0.00	0 0.00 0.00 0.00	16 3.39
4	3 0.64 37.50 1.91	5 1.06 62.50 1.82	0 0.00 0.00 0.00	0 0.00 0.00 0.00	8 1.69
5	0 0.00 0.00 0.00	2 0.42 100.00 0.73	0 0.00 0.00 0.00	0 0.00 0.00 0.00	2 0.42
Total	157 33.26	274 58.05	16 3.39	25 5.30	472 100.00
Frequency Missing = 102					

Groundwater in Harney Basin
A questionnaire for residential well users in Harney Basin
Harney County Watershed Council
Sub-basin Crosstabs

Question 6. Please indicate whether or not you have made any of the following changes/improvements to this well in the last 10 years to serve this property due to change in well performance?
(Respondents who answered 'Yes' to question 5)

The FREQ Procedure

Table of Q6_1 by SUB_BASIN					
Q6_1(Deepened well)	SUB_BASIN				
Frequency Percent Row Pct Col Pct	Silvies	Harney-Malheur Lakes	Donner and Blitzen	Silver Creek	Total
Yes, made this change	4 2.94 30.77 10.81	9 6.62 69.23 9.47	0 0.00 0.00 0.00	0 0.00 0.00 0.00	13 9.56
No, did not make this change	29 21.32 29.59 78.38	68 50.00 69.39 71.58	0 0.00 0.00 0.00	1 0.74 1.02 33.33	98 72.06
Don't know	0 0.00 0.00 0.00	3 2.21 100.00 3.16	0 0.00 0.00 0.00	0 0.00 0.00 0.00	3 2.21
No response	4 2.94 18.18 10.81	15 11.03 68.18 15.79	1 0.74 4.55 100.00	2 1.47 9.09 66.67	22 16.18
Total	37 27.21	95 69.85	1 0.74	3 2.21	136 100.00

Groundwater in Harney Basin
A questionnaire for residential well users in Harney Basin
Harney County Watershed Council
Sub-basin Crosstabs

Question 6. Please indicate whether or not you have made any of the following changes/improvements to this well in the last 10 years to serve this property due to change in well performance?
(Respondents who answered 'Yes' to question 5)

The FREQ Procedure

Table of Q6_2 by SUB_BASIN					
Q6_2(Lowered pump)	SUB_BASIN				
Frequency Percent Row Pct Col Pct	Silvies	Harney-Malheur Lakes	Donner and Blitzen	Silver Creek	Total
Yes, made this change	19 13.97 26.76 51.35	52 38.24 73.24 54.74	0 0.00 0.00 0.00	0 0.00 0.00 0.00	71 52.21
No, did not make this change	17 12.50 33.33 45.95	33 24.26 64.71 34.74	0 0.00 0.00 0.00	1 0.74 1.96 33.33	51 37.50
Don't know	0 0.00 0.00 0.00	4 2.94 100.00 4.21	0 0.00 0.00 0.00	0 0.00 0.00 0.00	4 2.94
No response	1 0.74 10.00 2.70	6 4.41 60.00 6.32	1 0.74 10.00 100.00	2 1.47 20.00 66.67	10 7.35
Total	37 27.21	95 69.85	1 0.74	3 2.21	136 100.00

Groundwater in Harney Basin
A questionnaire for residential well users in Harney Basin
Harney County Watershed Council
Sub-basin Crosstabs

Question 6. Please indicate whether or not you have made any of the following changes/improvements to this well in the last 10 years to serve this property due to change in well performance?
(Respondents who answered 'Yes' to question 5)

The FREQ Procedure

Table of Q6_3 by SUB_BASIN					
Q6_3(Cleaned well screen)	SUB_BASIN				
Frequency Percent Row Pct Col Pct	Silvies	Harney-Malheur Lakes	Donner and Blitzen	Silver Creek	Total
Yes, made this change	14 10.29 28.00 37.84	34 25.00 68.00 35.79	0 0.00 0.00 0.00	2 1.47 4.00 66.67	50 36.76
No, did not make this change	15 11.03 26.32 40.54	42 30.88 73.68 44.21	0 0.00 0.00 0.00	0 0.00 0.00 0.00	57 41.91
Don't know	3 2.21 30.00 8.11	7 5.15 70.00 7.37	0 0.00 0.00 0.00	0 0.00 0.00 0.00	10 7.35
No response	5 3.68 26.32 13.51	12 8.82 63.16 12.63	1 0.74 5.26 100.00	1 0.74 5.26 33.33	19 13.97
Total	37 27.21	95 69.85	1 0.74	3 2.21	136 100.00

Groundwater in Harney Basin
A questionnaire for residential well users in Harney Basin
Harney County Watershed Council
Sub-basin Crosstabs

Question 6. Please indicate whether or not you have made any of the following changes/improvements to this well in the last 10 years to serve this property due to change in well performance?
(Respondents who answered 'Yes' to question 5)

The FREQ Procedure

Table of Q6_4 by SUB_BASIN					
Q6_4(Restored casing)	SUB_BASIN				
Frequency Percent Row Pct Col Pct	Silvies	Harney-Malheur Lakes	Donner and Blitzen	Silver Creek	Total
Yes, made this change	3 2.21 23.08 8.11	9 6.62 69.23 9.47	0 0.00 0.00 0.00	1 0.74 7.69 33.33	13 9.56
No, did not make this change	26 19.12 28.26 70.27	65 47.79 70.65 68.42	0 0.00 0.00 0.00	1 0.74 1.09 33.33	92 67.65
Don't know	2 1.47 33.33 5.41	4 2.94 66.67 4.21	0 0.00 0.00 0.00	0 0.00 0.00 0.00	6 4.41
No response	6 4.41 24.00 16.22	17 12.50 68.00 17.89	1 0.74 4.00 100.00	1 0.74 4.00 33.33	25 18.38
Total	37 27.21	95 69.85	1 0.74	3 2.21	136 100.00

Groundwater in Harney Basin
A questionnaire for residential well users in Harney Basin
Harney County Watershed Council
Sub-basin Crosstabs

Question 6. Please indicate whether or not you have made any of the following changes/improvements to this well in the last 10 years to serve this property due to change in well performance?
(Respondents who answered 'Yes' to question 5)

The FREQ Procedure

Table of Q6_5 by SUB_BASIN					
Q6_5(Dug/installed a new well to serve this property)	SUB_BASIN				
Frequency Percent Row Pct Col Pct	Silvies	Harney-Malheur Lakes	Donner and Blitzen	Silver Creek	Total
Yes, made this change	6 4.41 21.43 16.22	20 14.71 71.43 21.05	1 0.74 3.57 100.00	1 0.74 3.57 33.33	28 20.59
No, did not make this change	27 19.85 31.40 72.97	59 43.38 68.60 62.11	0 0.00 0.00 0.00	0 0.00 0.00 0.00	86 63.24
Don't know	0 0.00 0.00 0.00	4 2.94 100.00 4.21	0 0.00 0.00 0.00	0 0.00 0.00 0.00	4 2.94
No response	4 2.94 22.22 10.81	12 8.82 66.67 12.63	0 0.00 0.00 0.00	2 1.47 11.11 66.67	18 13.24
Total	37 27.21	95 69.85	1 0.74	3 2.21	136 100.00

Groundwater in Harney Basin
A questionnaire for residential well users in Harney Basin
Harney County Watershed Council
Sub-basin Crosstabs

Question 6. Please indicate whether or not you have made any of the following changes/improvements to this well in the last 10 years to serve this property due to change in well performance?
(Respondents who answered 'Yes' to question 5)

The FREQ Procedure

Table of Q6_6 by SUB_BASIN					
Q6_6(Other)	SUB_BASIN				
Frequency Percent Row Pct Col Pct	Silvies	Harney-Malheur Lakes	Donner and Blitzen	Silver Creek	Total
Yes, made this change	3 2.21 30.00 8.11	7 5.15 70.00 7.37	0 0.00 0.00 0.00	0 0.00 0.00 0.00	10 7.35
No response	34 25.00 26.98 91.89	88 64.71 69.84 92.63	1 0.74 0.79 100.00	3 2.21 2.38 100.00	126 92.65
Total	37 27.21	95 69.85	1 0.74	3 2.21	136 100.00

Groundwater in Harney Basin
A questionnaire for residential well users in Harney Basin
Harney County Watershed Council
Sub-basin Crosstabs

The number of changes/improvements made to this well listed in question 6.
(Respondents who answered 'Yes' to question 5)

The *FREQ* Procedure

Table of sumchange by SUB_BASIN					
sumchange	SUB_BASIN				
Frequency Percent Row Pct Col Pct					
	Silvies	Harney-Malheur Lakes	Donner and Blitzen	Silver Creek	Total
0	11 8.09 31.43 29.73	24 17.65 68.57 25.26	0 0.00 0.00 0.00	0 0.00 0.00 0.00	35 25.74
1	11 8.09 22.92 29.73	34 25.00 70.83 35.79	1 0.74 2.08 100.00	2 1.47 4.17 66.67	48 35.29
2	9 6.62 28.13 24.32	22 16.18 68.75 23.16	0 0.00 0.00 0.00	1 0.74 3.13 33.33	32 23.53
3	4 2.94 30.77 10.81	9 6.62 69.23 9.47	0 0.00 0.00 0.00	0 0.00 0.00 0.00	13 9.56
4	2 1.47 33.33 5.41	4 2.94 66.67 4.21	0 0.00 0.00 0.00	0 0.00 0.00 0.00	6 4.41
5	0 0.00 0.00 0.00	2 1.47 100.00 2.11	0 0.00 0.00 0.00	0 0.00 0.00 0.00	2 1.47
Total	37 27.21	95 69.85	1 0.74	3 2.21	136 100.00

Groundwater in Harney Basin
A questionnaire for residential well users in Harney Basin
Harney County Watershed Council
Sub-basin Crosstabs

Question 7. Is the water pumped from this well potable (safe to drink)?

The FREQ Procedure

Table of Q7 by SUB_BASIN					
Q7	SUB_BASIN				
Frequency Percent Row Pct Col Pct	Silvies	Harney-Malheur Lakes	Donner and Blitzen	Silver Creek	Total
Yes	130 27.54 33.51 82.80	219 46.40 56.44 79.93	16 3.39 4.12 100.00	23 4.87 5.93 92.00	388 82.20
No	11 2.33 22.92 7.01	35 7.42 72.92 12.77	0 0.00 0.00 0.00	2 0.42 4.17 8.00	48 10.17
Don't know	15 3.18 45.45 9.55	18 3.81 54.55 6.57	0 0.00 0.00 0.00	0 0.00 0.00 0.00	33 6.99
No response	1 0.21 33.33 0.64	2 0.42 66.67 0.73	0 0.00 0.00 0.00	0 0.00 0.00 0.00	3 0.64
Total	157 33.26	274 58.05	16 3.39	25 5.30	472 100.00
Frequency Missing = 102					

Groundwater in Harney Basin
A questionnaire for residential well users in Harney Basin
Harney County Watershed Council
Sub-basin Crosstabs

Question 8. Have you noticed a change in water quality in this well in the last 10 years?

The FREQ Procedure

Table of Q8 by SUB_BASIN					
Q8	SUB_BASIN				
Frequency Percent Row Pct Col Pct	Silvies	Harney-Malheur Lakes	Donner and Blitzen	Silver Creek	Total
Yes	22 4.66 26.51 14.01	60 12.71 72.29 21.90	1 0.21 1.20 6.25	0 0.00 0.00 0.00	83 17.58
No	114 24.15 34.55 72.61	178 37.71 53.94 64.96	14 2.97 4.24 87.50	24 5.08 7.27 96.00	330 69.92
Don't know	19 4.03 36.54 12.10	31 6.57 59.62 11.31	1 0.21 1.92 6.25	1 0.21 1.92 4.00	52 11.02
No response	2 0.42 28.57 1.27	5 1.06 71.43 1.82	0 0.00 0.00 0.00	0 0.00 0.00 0.00	7 1.48
Total	157 33.26	274 58.05	16 3.39	25 5.30	472 100.00
Frequency Missing = 102					

Groundwater in Harney Basin
A questionnaire for residential well users in Harney Basin
Harney County Watershed Council
Sub-basin Crosstabs

Question 9. Have you had the water quality of this well tested in the last 10 years?

The FREQ Procedure

Table of Q9 by SUB_BASIN					
Q9	SUB_BASIN				
Frequency Percent Row Pct Col Pct	Silvies	Harney-Malheur Lakes	Donner and Blitzen	Silver Creek	Total
Yes, tested once	54 11.44 34.84 34.39	87 18.43 56.13 31.75	4 0.85 2.58 25.00	10 2.12 6.45 40.00	155 32.84
Yes, tested more than once	19 4.03 27.94 12.10	44 9.32 64.71 16.06	3 0.64 4.41 18.75	2 0.42 2.94 8.00	68 14.41
No	78 16.53 34.82 49.68	126 26.69 56.25 45.99	9 1.91 4.02 56.25	11 2.33 4.91 44.00	224 47.46
Don't know	6 1.27 25.00 3.82	16 3.39 66.67 5.84	0 0.00 0.00 0.00	2 0.42 8.33 8.00	24 5.08
No response	0 0.00 0.00 0.00	1 0.21 100.00 0.36	0 0.00 0.00 0.00	0 0.00 0.00 0.00	1 0.21
Total	157 33.26	274 58.05	16 3.39	25 5.30	472 100.00
Frequency Missing = 102					

Groundwater in Harney Basin
A questionnaire for residential well users in Harney Basin
Harney County Watershed Council
Sub-basin Crosstabs

Question 9a. Please indicate whether each of the following was detected or not in any of tests and provide the concentration amount, if known.

The FREQ Procedure

Table of Q9a_1 by SUB_BASIN					
Q9a_1(Iron)	SUB_BASIN				
Frequency Percent Row Pct Col Pct	Silvies	Harney-Malheur Lakes	Donner and Blitzen	Silver Creek	Total
Not detected	21 9.42 26.58 28.77	47 21.08 59.49 35.88	3 1.35 3.80 42.86	8 3.59 10.13 66.67	79 35.43
Detected	23 10.31 38.98 31.51	35 15.70 59.32 26.72	1 0.45 1.69 14.29	0 0.00 0.00 0.00	59 26.46
No response	29 13.00 34.12 39.73	49 21.97 57.65 37.40	3 1.35 3.53 42.86	4 1.79 4.71 33.33	85 38.12
Total	73 32.74	131 58.74	7 3.14	12 5.38	223 100.00
Frequency Missing = 351					

Groundwater in Harney Basin
A questionnaire for residential well users in Harney Basin
Harney County Watershed Council
Sub-basin Crosstabs

Question 9a. Please indicate whether each of the following was detected or not in any of tests and provide the concentration amount, if known.

The FREQ Procedure

Table of Q9a_2 by SUB_BASIN					
Q9a_2(Nitrates)	SUB_BASIN				
Frequency Percent Row Pct Col Pct	Silvies	Harney-Malheur Lakes	Donner and Blitzen	Silver Creek	Total
Not detected	32 14.35 31.37 43.84	58 26.01 56.86 44.27	4 1.79 3.92 57.14	8 3.59 7.84 66.67	102 45.74
Detected	14 6.28 34.15 19.18	27 12.11 65.85 20.61	0 0.00 0.00 0.00	0 0.00 0.00 0.00	41 18.39
No response	27 12.11 33.75 36.99	46 20.63 57.50 35.11	3 1.35 3.75 42.86	4 1.79 5.00 33.33	80 35.87
Total	73 32.74	131 58.74	7 3.14	12 5.38	223 100.00
Frequency Missing = 351					

Groundwater in Harney Basin
A questionnaire for residential well users in Harney Basin
Harney County Watershed Council
Sub-basin Crosstabs

Question 9a. Please indicate whether each of the following was detected or not in any of tests and provide the concentration amount, if known.

The FREQ Procedure

Table of Q9a_3 by SUB_BASIN					
Q9a_3(Arsenic)	SUB_BASIN				
Frequency Percent Row Pct Col Pct	Silvies	Harney-Malheur Lakes	Donner and Blitzen	Silver Creek	Total
Not detected	29 13.00 33.72 39.73	45 20.18 52.33 34.35	3 1.35 3.49 42.86	9 4.04 10.47 75.00	86 38.57
Detected	23 10.31 26.14 31.51	62 27.80 70.45 47.33	1 0.45 1.14 14.29	2 0.90 2.27 16.67	88 39.46
No response	21 9.42 42.86 28.77	24 10.76 48.98 18.32	3 1.35 6.12 42.86	1 0.45 2.04 8.33	49 21.97
Total	73 32.74	131 58.74	7 3.14	12 5.38	223 100.00
Frequency Missing = 351					

Groundwater in Harney Basin
A questionnaire for residential well users in Harney Basin
Harney County Watershed Council
Sub-basin Crosstabs

Question 9a. Please indicate whether each of the following was detected or not in any of tests and provide the concentration amount, if known.

The FREQ Procedure

Table of Q9a_4 by SUB_BASIN					
Q9a_4(Other)	SUB_BASIN				
Frequency Percent Row Pct Col Pct	Silvies	Harney-Malheur Lakes	Donner and Blitzen	Silver Creek	Total
Detected	11 4.93 37.93 15.07	17 7.62 58.62 12.98	0 0.00 0.00 0.00	1 0.45 3.45 8.33	29 13.00
No response	62 27.80 31.96 84.93	114 51.12 58.76 87.02	7 3.14 3.61 100.00	11 4.93 5.67 91.67	194 87.00
Total	73 32.74	131 58.74	7 3.14	12 5.38	223 100.00
Frequency Missing = 351					

Groundwater in Harney Basin
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Question 9. Have you had the water quality of this well tested in the last 10 years?
(Respondents who answered 'Yes' to question 8)

The FREQ Procedure

Table of Q9 by SUB_BASIN				
Q9	SUB_BASIN			
Frequency Percent Row Pct Col Pct	Silvies	Harney-Malheur Lakes	Donner and Blitzen	Total
Yes, tested once	6 7.23 28.57 27.27	15 18.07 71.43 25.00	0 0.00 0.00 0.00	21 25.30
Yes, tested more than once	3 3.61 13.04 13.64	19 22.89 82.61 31.67	1 1.20 4.35 100.00	23 27.71
No	12 14.46 32.43 54.55	25 30.12 67.57 41.67	0 0.00 0.00 0.00	37 44.58
Don't know	1 1.20 50.00 4.55	1 1.20 50.00 1.67	0 0.00 0.00 0.00	2 2.41
Total	22 26.51	60 72.29	1 1.20	83 100.00

Groundwater in Harney Basin
A questionnaire for residential well users in Harney Basin
Harney County Watershed Council
Sub-basin Crosstabs

Question 9a. Please indicate whether each of the following was detected or not in any of tests and provide the concentration amount, if known.
(Respondents who answered 'Yes' to question 8)

The FREQ Procedure

Table of Q9a_1 by SUB_BASIN				
Q9a_1(Iron)	SUB_BASIN			
Frequency Percent Row Pct Col Pct	Silvies	Harney-Malheur Lakes	Donner and Blitzen	Total
Not detected	2 4.55 22.22 22.22	7 15.91 77.78 20.59	0 0.00 0.00 0.00	9 20.45
Detected	5 11.36 26.32 55.56	13 29.55 68.42 38.24	1 2.27 5.26 100.00	19 43.18
No response	2 4.55 12.50 22.22	14 31.82 87.50 41.18	0 0.00 0.00 0.00	16 36.36
Total	9 20.45	34 77.27	1 2.27	44 100.00
Frequency Missing = 39				

Groundwater in Harney Basin
A questionnaire for residential well users in Harney Basin
Harney County Watershed Council
Sub-basin Crosstabs

Question 9a. Please indicate whether each of the following was detected or not in any of tests and provide the concentration amount, if known.
(Respondents who answered 'Yes' to question 8)

The FREQ Procedure

Table of Q9a_2 by SUB_BASIN				
Q9a_2(Nitrates)	SUB_BASIN			
Frequency Percent Row Pct Col Pct	Silvies	Harney-Malheur Lakes	Donner and Blitzen	Total
Not detected	5 11.36 45.45 55.56	5 11.36 45.45 14.71	1 2.27 9.09 100.00	11 25.00
Detected	1 2.27 7.14 11.11	13 29.55 92.86 38.24	0 0.00 0.00 0.00	14 31.82
No response	3 6.82 15.79 33.33	16 36.36 84.21 47.06	0 0.00 0.00 0.00	19 43.18
Total	9 20.45	34 77.27	1 2.27	44 100.00
Frequency Missing = 39				

Groundwater in Harney Basin
A questionnaire for residential well users in Harney Basin
Harney County Watershed Council
Sub-basin Crosstabs

Question 9a. Please indicate whether each of the following was detected or not in any of tests and provide the concentration amount, if known.
(Respondents who answered 'Yes' to question 8)

The FREQ Procedure

Table of Q9a_3 by SUB_BASIN				
Q9a_3(Arsenic)	SUB_BASIN			
Frequency Percent Row Pct Col Pct	Silvies	Harney-Malheur Lakes	Donner and Blitzen	Total
Not detected	4 9.09 36.36 44.44	6 13.64 54.55 17.65	1 2.27 9.09 100.00	11 25.00
Detected	3 6.82 13.04 33.33	20 45.45 86.96 58.82	0 0.00 0.00 0.00	23 52.27
No response	2 4.55 20.00 22.22	8 18.18 80.00 23.53	0 0.00 0.00 0.00	10 22.73
Total	9 20.45	34 77.27	1 2.27	44 100.00
Frequency Missing = 39				

Groundwater in Harney Basin
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Question 9a. Please indicate whether each of the following was detected or not in any of tests and provide the concentration amount, if known.
(Respondents who answered 'Yes' to question 8)

The FREQ Procedure

Table of Q9a_4 by SUB_BASIN				
Q9a_4(Other)	SUB_BASIN			
Frequency Percent Row Pct Col Pct	Silvies	Harney-Malheur Lakes	Donner and Blitzen	Total
Detected	3 6.82 21.43 33.33	11 25.00 78.57 32.35	0 0.00 0.00 0.00	14 31.82
No response	6 13.64 20.00 66.67	23 52.27 76.67 67.65	1 2.27 3.33 100.00	30 68.18
Total	9 20.45	34 77.27	1 2.27	44 100.00
Frequency Missing = 39				

Groundwater in Harney Basin
A questionnaire for residential well users in Harney Basin
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Question 10. Have you done anything to address water quality concerns (e.g., chemical or filtration treatment, reverse osmosis system)?

The *FREQ* Procedure

Table of Q10 by SUB_BASIN					
Q10	SUB_BASIN				
Frequency Percent Row Pct Col Pct	Silvies	Harney-Malheur Lakes	Donner and Blitzen	Silver Creek	Total
Yes	39 8.26 32.23 24.84	77 16.31 63.64 28.10	2 0.42 1.65 12.50	3 0.64 2.48 12.00	121 25.64
No	116 24.58 34.02 73.89	189 40.04 55.43 68.98	14 2.97 4.11 87.50	22 4.66 6.45 88.00	341 72.25
Don't know	1 0.21 14.29 0.64	6 1.27 85.71 2.19	0 0.00 0.00 0.00	0 0.00 0.00 0.00	7 1.48
No response	1 0.21 33.33 0.64	2 0.42 66.67 0.73	0 0.00 0.00 0.00	0 0.00 0.00 0.00	3 0.64
Total	157 33.26	274 58.05	16 3.39	25 5.30	472 100.00
Frequency Missing = 102					

Groundwater in Harney Basin
A questionnaire for residential well users in Harney Basin
Harney County Watershed Council
Sub-basin Crosstabs

Question 10. Have you done anything to address water quality concerns (e.g., chemical or filtration treatment, reverse osmosis system)?
(Respondents who answered 'No' to question 7 or 'Yes' to question 8)

The FREQ Procedure

Table of Q10 by SUB_BASIN					
Q10	SUB_BASIN				
Frequency Percent Row Pct Col Pct	Silvies	Harney-Malheur Lakes	Donner and Blitzen	Silver Creek	Total
Yes	14 12.73 22.95 50.00	44 40.00 72.13 55.70	1 0.91 1.64 100.00	2 1.82 3.28 100.00	61 55.45
No	14 12.73 29.17 50.00	34 30.91 70.83 43.04	0 0.00 0.00 0.00	0 0.00 0.00 0.00	48 43.64
No response	0 0.00 0.00 0.00	1 0.91 100.00 1.27	0 0.00 0.00 0.00	0 0.00 0.00 0.00	1 0.91
Total	28 25.45	79 71.82	1 0.91	2 1.82	110 100.00

Groundwater in Harney Basin
A questionnaire for residential well users in Harney Basin
Harney County Watershed Council
Sub-basin Crosstabs

Question 10. Have you done anything to address water quality concerns (e.g., chemical or filtration treatment, reverse osmosis system)?
(Respondents who answered 'No' to question 7)

The FREQ Procedure

Table of Q10 by SUB_BASIN				
Q10	SUB_BASIN			
Frequency Percent Row Pct Col Pct	Silvies	Harney-Malheur Lakes	Silver Creek	Total
Yes	4 8.33 12.50 36.36	26 54.17 81.25 74.29	2 4.17 6.25 100.00	32 66.67
No	7 14.58 46.67 63.64	8 16.67 53.33 22.86	0 0.00 0.00 0.00	15 31.25
No response	0 0.00 0.00 0.00	1 2.08 100.00 2.86	0 0.00 0.00 0.00	1 2.08
Total	11 22.92	35 72.92	2 4.17	48 100.00

Groundwater in Harney Basin
A questionnaire for residential well users in Harney Basin
Harney County Watershed Council
Sub-basin Crosstabs

Question 10. Have you done anything to address water quality concerns (e.g., chemical or filtration treatment, reverse osmosis system)?
(Respondents who answered 'Yes' to question 8)

The FREQ Procedure

Table of Q10 by SUB_BASIN				
Q10	SUB_BASIN			
Frequency Percent Row Pct Col Pct	Silvies	Harney-Malheur Lakes	Donner and Blitzen	Total
Yes	12 14.46 27.27 54.55	31 37.35 70.45 51.67	1 1.20 2.27 100.00	44 53.01
No	10 12.05 25.64 45.45	29 34.94 74.36 48.33	0 0.00 0.00 0.00	39 46.99
Total	22 26.51	60 72.29	1 1.20	83 100.00

Groundwater in Harney Basin
A questionnaire for residential well users in Harney Basin
Harney County Watershed Council
Sub-basin Crosstabs

Question 11. What year was this primary residential well installed? (Please mark Don't Know if you are unsure)

The FREQ Procedure

Table of Q11 by SUB_BASIN					
Q11	SUB_BASIN				
Frequency Percent Row Pct Col Pct	Silvies	Harney-Malheur Lakes	Donner and Blitzen	Silver Creek	Total
Don't know	93 19.70 34.44 59.24	154 32.63 57.04 56.20	8 1.69 2.96 50.00	15 3.18 5.56 60.00	270 57.20
1910	1 0.21 100.00 0.64	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	1 0.21
1945	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	1 0.21 100.00 4.00	1 0.21
1952	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	1 0.21 100.00 4.00	1 0.21
1956	1 0.21 100.00 0.64	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	1 0.21
1960	0 0.00 0.00 0.00	2 0.42 66.67 0.73	0 0.00 0.00 0.00	1 0.21 33.33 4.00	3 0.64
1963	2 0.42 66.67 1.27	0 0.00 0.00 0.00	0 0.00 0.00 0.00	1 0.21 33.33 4.00	3 0.64
1967	1 0.21 100.00 0.64	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	1 0.21

Table of Q11 by SUB_BASIN					
Q11	SUB_BASIN				
Frequency Percent Row Pct Col Pct	Silvies	Harney-Malheur Lakes	Donner and Blitzen	Silver Creek	Total
1968	1 0.21 33.33 0.64	2 0.42 66.67 0.73	0 0.00 0.00 0.00	0 0.00 0.00 0.00	3 0.64
1969	0 0.00 0.00 0.00	2 0.42 100.00 0.73	0 0.00 0.00 0.00	0 0.00 0.00 0.00	2 0.42
1970	1 0.21 50.00 0.64	1 0.21 50.00 0.36	0 0.00 0.00 0.00	0 0.00 0.00 0.00	2 0.42
1971	0 0.00 0.00 0.00	1 0.21 100.00 0.36	0 0.00 0.00 0.00	0 0.00 0.00 0.00	1 0.21
1972	0 0.00 0.00 0.00	2 0.42 100.00 0.73	0 0.00 0.00 0.00	0 0.00 0.00 0.00	2 0.42
1973	1 0.21 16.67 0.64	3 0.64 50.00 1.09	2 0.42 33.33 12.50	0 0.00 0.00 0.00	6 1.27
1974	0 0.00 0.00 0.00	5 1.06 100.00 1.82	0 0.00 0.00 0.00	0 0.00 0.00 0.00	5 1.06
1975	2 0.42 33.33 1.27	3 0.64 50.00 1.09	1 0.21 16.67 6.25	0 0.00 0.00 0.00	6 1.27
1976	1 0.21 25.00 0.64	3 0.64 75.00 1.09	0 0.00 0.00 0.00	0 0.00 0.00 0.00	4 0.85
1977	0 0.00 0.00 0.00	2 0.42 100.00 0.73	0 0.00 0.00 0.00	0 0.00 0.00 0.00	2 0.42
1978	0 0.00 0.00 0.00	1 0.21 100.00 0.36	0 0.00 0.00 0.00	0 0.00 0.00 0.00	1 0.21

Table of Q11 by SUB_BASIN					
Q11	SUB_BASIN				
Frequency Percent Row Pct Col Pct	Silvies	Harney-Malheur Lakes	Donner and Blitzen	Silver Creek	Total
1979	4 0.85 57.14 2.55	2 0.42 28.57 0.73	1 0.21 14.29 6.25	0 0.00 0.00 0.00	7 1.48
1980	2 0.42 50.00 1.27	1 0.21 25.00 0.36	0 0.00 0.00 0.00	1 0.21 25.00 4.00	4 0.85
1981	1 0.21 20.00 0.64	3 0.64 60.00 1.09	0 0.00 0.00 0.00	1 0.21 20.00 4.00	5 1.06
1982	1 0.21 100.00 0.64	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	1 0.21
1983	0 0.00 0.00 0.00	1 0.21 100.00 0.36	0 0.00 0.00 0.00	0 0.00 0.00 0.00	1 0.21
1986	0 0.00 0.00 0.00	1 0.21 100.00 0.36	0 0.00 0.00 0.00	0 0.00 0.00 0.00	1 0.21
1987	1 0.21 50.00 0.64	1 0.21 50.00 0.36	0 0.00 0.00 0.00	0 0.00 0.00 0.00	2 0.42
1989	2 0.42 66.67 1.27	1 0.21 33.33 0.36	0 0.00 0.00 0.00	0 0.00 0.00 0.00	3 0.64
1990	0 0.00 0.00 0.00	1 0.21 100.00 0.36	0 0.00 0.00 0.00	0 0.00 0.00 0.00	1 0.21
1991	0 0.00 0.00 0.00	1 0.21 100.00 0.36	0 0.00 0.00 0.00	0 0.00 0.00 0.00	1 0.21
1992	1 0.21 100.00 0.64	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	1 0.21

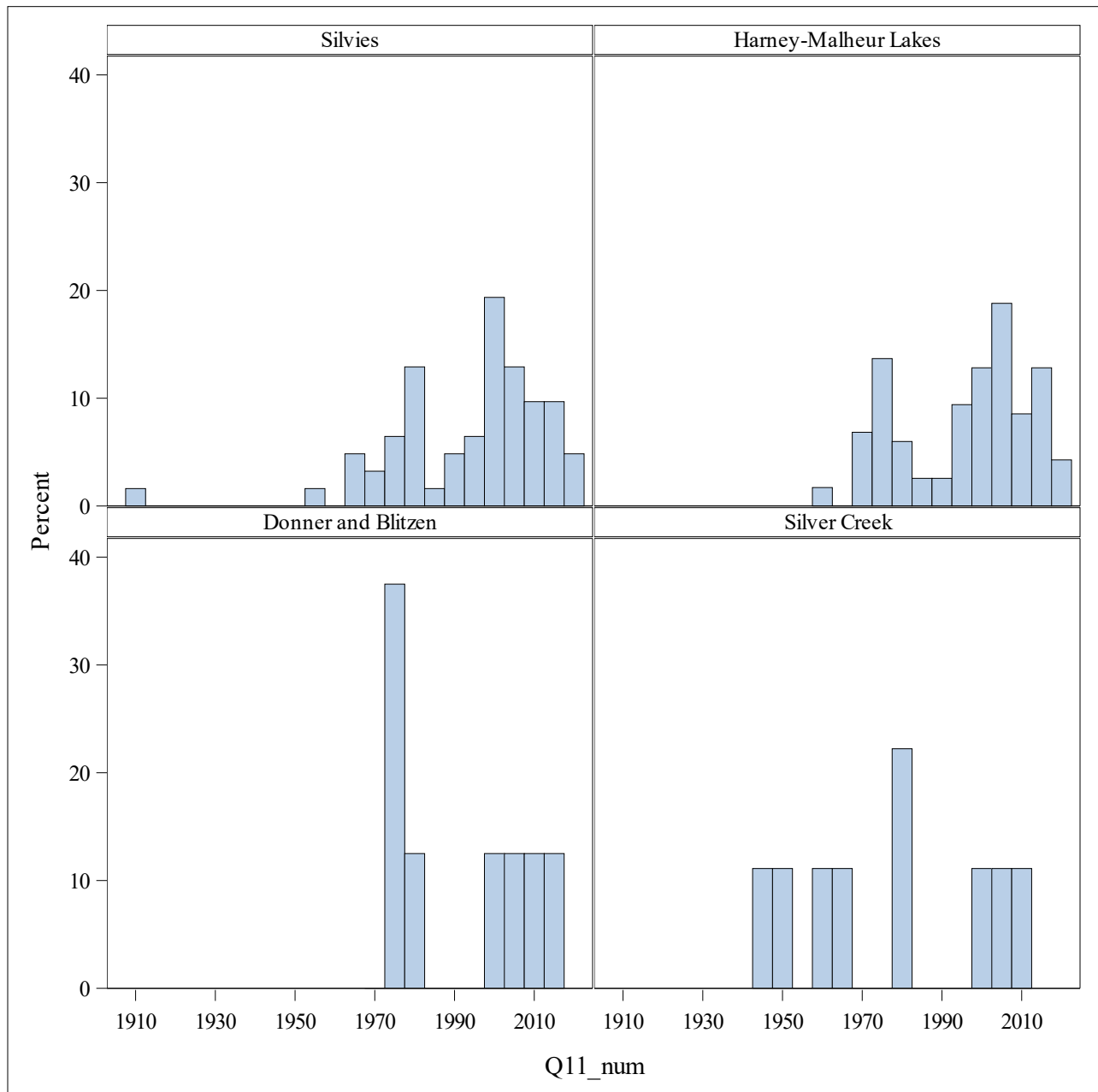
Table of Q11 by SUB_BASIN					
Q11	SUB_BASIN				
Frequency Percent Row Pct Col Pct	Silvies	Harney-Malheur Lakes	Donner and Blitzen	Silver Creek	Total
1994	1 0.21 100.00 0.64	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	1 0.21
1995	0 0.00 0.00 0.00	3 0.64 100.00 1.09	0 0.00 0.00 0.00	0 0.00 0.00 0.00	3 0.64
1996	1 0.21 33.33 0.64	2 0.42 66.67 0.73	0 0.00 0.00 0.00	0 0.00 0.00 0.00	3 0.64
1997	2 0.42 25.00 1.27	6 1.27 75.00 2.19	0 0.00 0.00 0.00	0 0.00 0.00 0.00	8 1.69
1998	3 0.64 33.33 1.91	4 0.85 44.44 1.46	1 0.21 11.11 6.25	1 0.21 11.11 4.00	9 1.91
1999	4 0.85 40.00 2.55	6 1.27 60.00 2.19	0 0.00 0.00 0.00	0 0.00 0.00 0.00	10 2.12
2000	3 0.64 50.00 1.91	3 0.64 50.00 1.09	0 0.00 0.00 0.00	0 0.00 0.00 0.00	6 1.27
2001	1 0.21 100.00 0.64	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	1 0.21
2002	1 0.21 33.33 0.64	2 0.42 66.67 0.73	0 0.00 0.00 0.00	0 0.00 0.00 0.00	3 0.64
2003	0 0.00 0.00 0.00	1 0.21 100.00 0.36	0 0.00 0.00 0.00	0 0.00 0.00 0.00	1 0.21
2004	0 0.00 0.00 0.00	4 0.85 66.67 1.46	1 0.21 16.67 6.25	1 0.21 16.67 4.00	6 1.27

Table of Q11 by SUB_BASIN					
Q11	SUB_BASIN				
Frequency Percent Row Pct Col Pct	Silvies	Harney-Malheur Lakes	Donner and Blitzen	Silver Creek	Total
2005	0 0.00 0.00 0.00	8 1.69 100.00 2.92	0 0.00 0.00 0.00	0 0.00 0.00 0.00	8 1.69
2006	2 0.42 33.33 1.27	4 0.85 66.67 1.46	0 0.00 0.00 0.00	0 0.00 0.00 0.00	6 1.27
2007	6 1.27 54.55 3.82	5 1.06 45.45 1.82	0 0.00 0.00 0.00	0 0.00 0.00 0.00	11 2.33
2008	1 0.21 33.33 0.64	1 0.21 33.33 0.36	0 0.00 0.00 0.00	1 0.21 33.33 4.00	3 0.64
2009	3 0.64 42.86 1.91	4 0.85 57.14 1.46	0 0.00 0.00 0.00	0 0.00 0.00 0.00	7 1.48
2010	0 0.00 0.00 0.00	1 0.21 50.00 0.36	1 0.21 50.00 6.25	0 0.00 0.00 0.00	2 0.42
2011	0 0.00 0.00 0.00	2 0.42 100.00 0.73	0 0.00 0.00 0.00	0 0.00 0.00 0.00	2 0.42
2012	2 0.42 50.00 1.27	2 0.42 50.00 0.73	0 0.00 0.00 0.00	0 0.00 0.00 0.00	4 0.85
2013	1 0.21 33.33 0.64	2 0.42 66.67 0.73	0 0.00 0.00 0.00	0 0.00 0.00 0.00	3 0.64
2014	0 0.00 0.00 0.00	5 1.06 100.00 1.82	0 0.00 0.00 0.00	0 0.00 0.00 0.00	5 1.06
2015	2 0.42 25.00 1.27	6 1.27 75.00 2.19	0 0.00 0.00 0.00	0 0.00 0.00 0.00	8 1.69

Table of Q11 by SUB_BASIN					
Q11	SUB_BASIN				
Frequency Percent Row Pct Col Pct	Silvies	Harney-Malheur Lakes	Donner and Blitzen	Silver Creek	Total
2016	2 0.42 40.00 1.27	2 0.42 40.00 0.73	1 0.21 20.00 6.25	0 0.00 0.00 0.00	5 1.06
2017	1 0.21 100.00 0.64	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	1 0.21
2018	1 0.21 20.00 0.64	4 0.85 80.00 1.46	0 0.00 0.00 0.00	0 0.00 0.00 0.00	5 1.06
2019	2 0.42 66.67 1.27	1 0.21 33.33 0.36	0 0.00 0.00 0.00	0 0.00 0.00 0.00	3 0.64
No response	2 0.42 33.33 1.27	3 0.64 50.00 1.09	0 0.00 0.00 0.00	1 0.21 16.67 4.00	6 1.27
Total	157 33.26	274 58.05	16 3.39	25 5.30	472 100.00
Frequency Missing = 102					

Groundwater in Harney Basin
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Harney County Watershed Council
Sub-basin Crosstabs

Question 11. What year was this primary residential well installed? (Please mark Don't Know if you are unsure)



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Question 11. What year was this primary residential well installed? (Please mark Don't Know if you are unsure)
(Respondents who answered 'No' to question 4 or 'Yes' to question 5)

The FREQ Procedure

Table of Q11 by SUB_BASIN					
Q11	SUB_BASIN				
Frequency Percent Row Pct Col Pct	Silvies	Harney-Malheur Lakes	Donner and Blitzen	Silver Creek	Total
Don't know	26 18.18 30.59 68.42	57 39.86 67.06 56.44	0 0.00 0.00 0.00	2 1.40 2.35 66.67	85 59.44
1910	1 0.70 100.00 2.63	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	1 0.70
1960	0 0.00 0.00 0.00	1 0.70 100.00 0.99	0 0.00 0.00 0.00	0 0.00 0.00 0.00	1 0.70
1963	1 0.70 100.00 2.63	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	1 0.70
1969	0 0.00 0.00 0.00	2 1.40 100.00 1.98	0 0.00 0.00 0.00	0 0.00 0.00 0.00	2 1.40
1970	0 0.00 0.00 0.00	1 0.70 100.00 0.99	0 0.00 0.00 0.00	0 0.00 0.00 0.00	1 0.70
1974	0 0.00 0.00 0.00	4 2.80 100.00 3.96	0 0.00 0.00 0.00	0 0.00 0.00 0.00	4 2.80

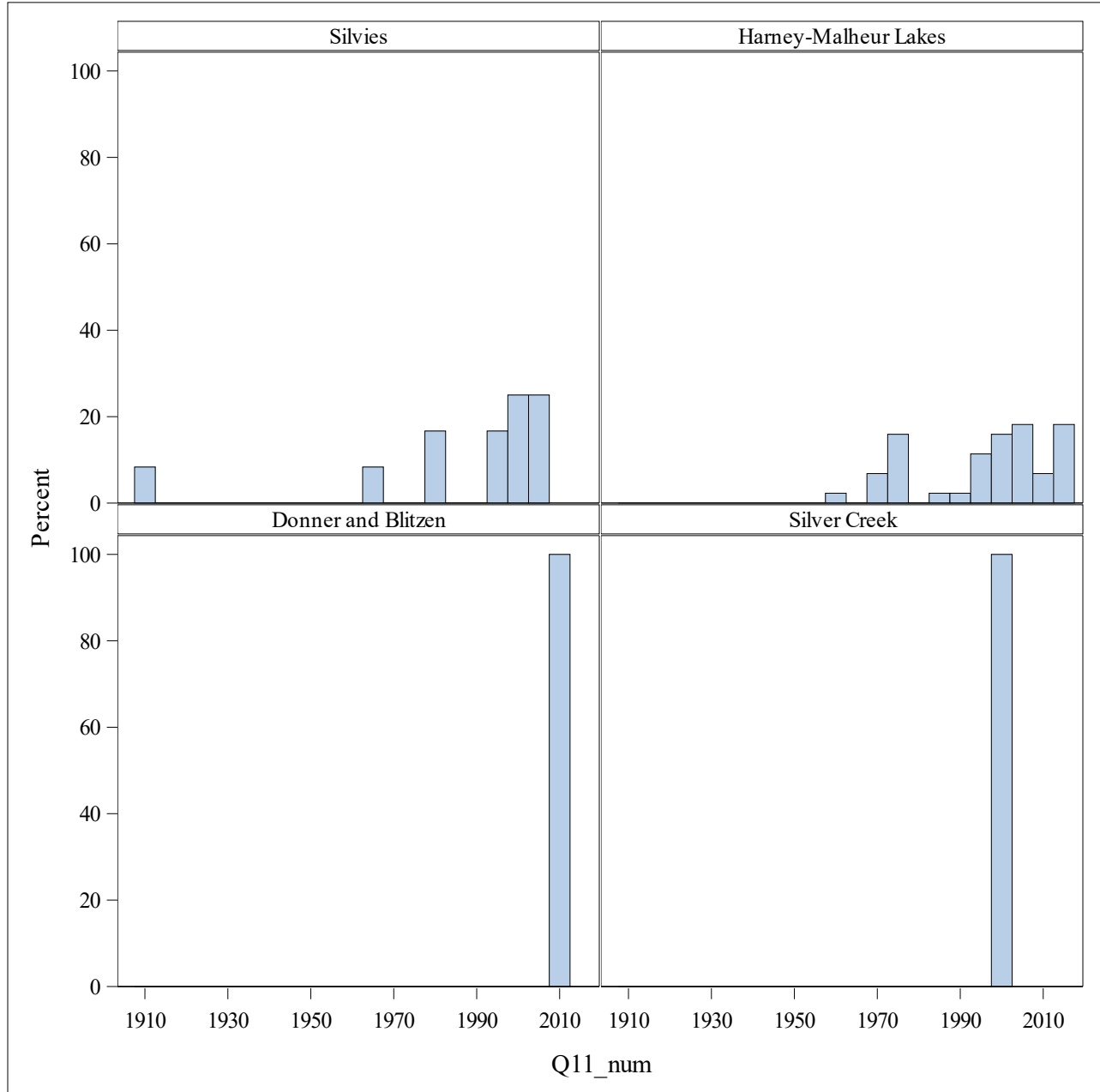
Table of Q11 by SUB_BASIN					
Q11	SUB_BASIN				
Frequency Percent Row Pct Col Pct	Silvies	Harney-Malheur Lakes	Donner and Blitzen	Silver Creek	Total
1975	0 0.00 0.00 0.00	1 0.70 100.00 0.99	0 0.00 0.00 0.00	0 0.00 0.00 0.00	1 0.70
1976	0 0.00 0.00 0.00	1 0.70 100.00 0.99	0 0.00 0.00 0.00	0 0.00 0.00 0.00	1 0.70
1977	0 0.00 0.00 0.00	1 0.70 100.00 0.99	0 0.00 0.00 0.00	0 0.00 0.00 0.00	1 0.70
1979	1 0.70 100.00 2.63	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	1 0.70
1981	1 0.70 100.00 2.63	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	1 0.70
1983	0 0.00 0.00 0.00	1 0.70 100.00 0.99	0 0.00 0.00 0.00	0 0.00 0.00 0.00	1 0.70
1990	0 0.00 0.00 0.00	1 0.70 100.00 0.99	0 0.00 0.00 0.00	0 0.00 0.00 0.00	1 0.70
1994	1 0.70 100.00 2.63	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	1 0.70
1997	1 0.70 16.67 2.63	5 3.50 83.33 4.95	0 0.00 0.00 0.00	0 0.00 0.00 0.00	6 4.20
1998	1 0.70 25.00 2.63	2 1.40 50.00 1.98	0 0.00 0.00 0.00	1 0.70 25.00 33.33	4 2.80
1999	0 0.00 0.00 0.00	2 1.40 100.00 1.98	0 0.00 0.00 0.00	0 0.00 0.00 0.00	2 1.40

Table of Q11 by SUB_BASIN					
Q11	SUB_BASIN				
Frequency Percent Row Pct Col Pct	Silvies	Harney-Malheur Lakes	Donner and Blitzen	Silver Creek	Total
2000	2 1.40 50.00 5.26	2 1.40 50.00 1.98	0 0.00 0.00 0.00	0 0.00 0.00 0.00	4 2.80
2002	0 0.00 0.00 0.00	1 0.70 100.00 0.99	0 0.00 0.00 0.00	0 0.00 0.00 0.00	1 0.70
2003	0 0.00 0.00 0.00	1 0.70 100.00 0.99	0 0.00 0.00 0.00	0 0.00 0.00 0.00	1 0.70
2005	0 0.00 0.00 0.00	1 0.70 100.00 0.99	0 0.00 0.00 0.00	0 0.00 0.00 0.00	1 0.70
2006	0 0.00 0.00 0.00	3 2.10 100.00 2.97	0 0.00 0.00 0.00	0 0.00 0.00 0.00	3 2.10
2007	3 2.10 50.00 7.89	3 2.10 50.00 2.97	0 0.00 0.00 0.00	0 0.00 0.00 0.00	6 4.20
2009	0 0.00 0.00 0.00	3 2.10 100.00 2.97	0 0.00 0.00 0.00	0 0.00 0.00 0.00	3 2.10
2010	0 0.00 0.00 0.00	0 0.00 0.00 0.00	1 0.70 100.00 100.00	0 0.00 0.00 0.00	1 0.70
2013	0 0.00 0.00 0.00	2 1.40 100.00 1.98	0 0.00 0.00 0.00	0 0.00 0.00 0.00	2 1.40
2014	0 0.00 0.00 0.00	3 2.10 100.00 2.97	0 0.00 0.00 0.00	0 0.00 0.00 0.00	3 2.10
2015	0 0.00 0.00 0.00	2 1.40 100.00 1.98	0 0.00 0.00 0.00	0 0.00 0.00 0.00	2 1.40

Table of Q11 by SUB_BASIN					
Q11	SUB_BASIN				
Frequency Percent Row Pct Col Pct	Silvies	Harney-Malheur Lakes	Donner and Blitzen	Silver Creek	Total
2016	0 0.00 0.00 0.00	1 0.70 100.00 0.99	0 0.00 0.00 0.00	0 0.00 0.00 0.00	1 0.70
Total	38 26.57	101 70.63	1 0.70	3 2.10	143 100.00

Groundwater in Harney Basin
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Question 11. What year was this primary residential well installed? (Please mark Don't Know if you are unsure)
(Respondents who answered 'No' to question 4 or 'Yes' to question 5)



Groundwater in Harney Basin
A questionnaire for residential well users in Harney Basin
Harney County Watershed Council
Sub-basin Crosstabs

Question 11. What year was this primary residential well installed? (Please mark Don't Know if you are unsure)
(Respondents who answered 'No' to question 4)

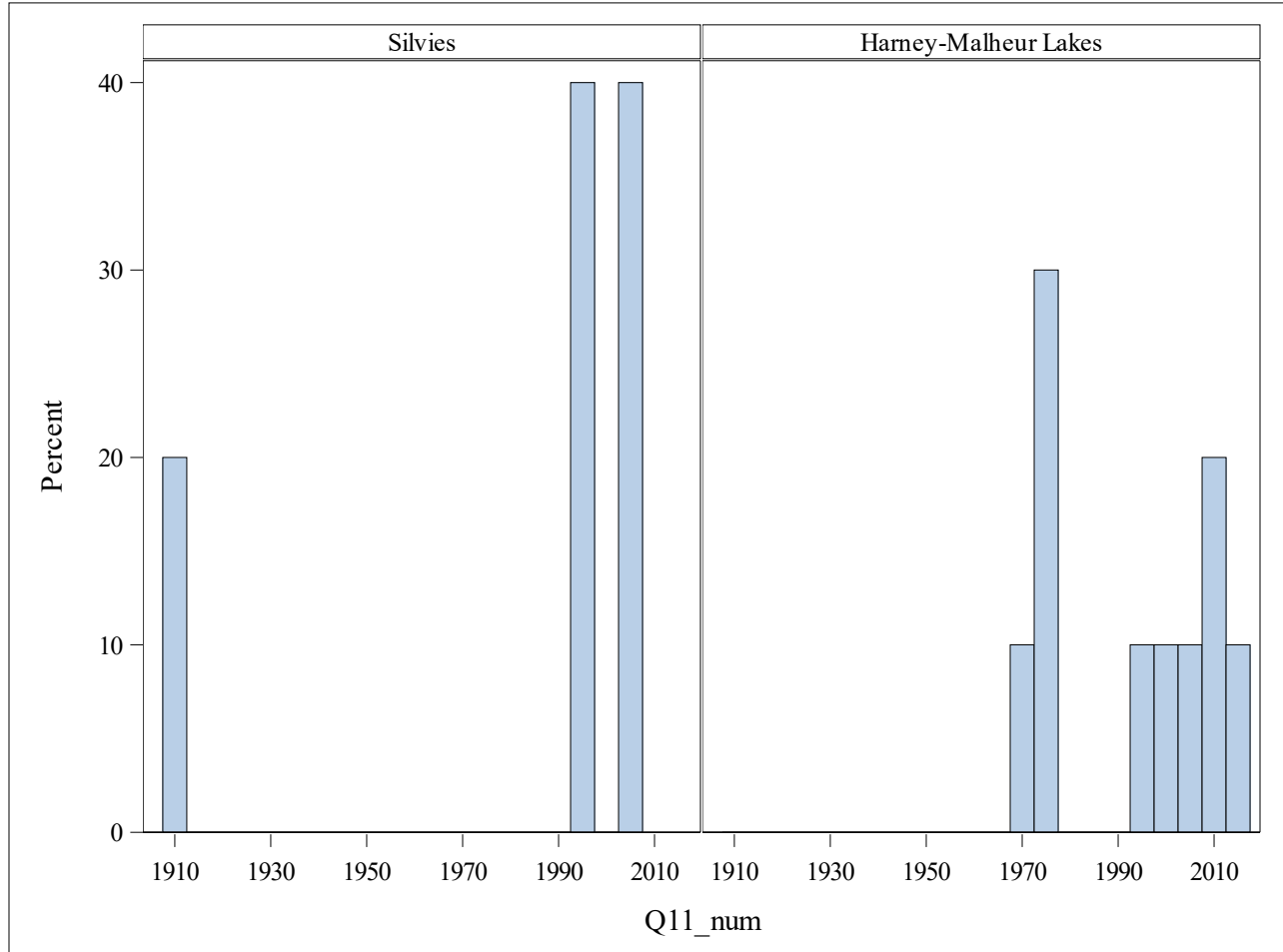
The FREQ Procedure

Table of Q11 by SUB_BASIN			
Q11	SUB_BASIN		
Frequency Percent Row Pct Col Pct	Silvies	Harney-Malheur Lakes	Total
Don't know	3 7.32 11.54 37.50	23 56.10 88.46 69.70	26 63.41
1910	1 2.44 100.00 12.50	0 0.00 0.00 0.00	1 2.44
1969	0 0.00 0.00 0.00	1 2.44 100.00 3.03	1 2.44
1974	0 0.00 0.00 0.00	2 4.88 100.00 6.06	2 4.88
1977	0 0.00 0.00 0.00	1 2.44 100.00 3.03	1 2.44
1994	1 2.44 100.00 12.50	0 0.00 0.00 0.00	1 2.44
1997	1 2.44 50.00 12.50	1 2.44 50.00 3.03	2 4.88

Table of Q11 by SUB_BASIN			
Q11	SUB_BASIN		
Frequency Percent Row Pct Col Pct	Silvies	Harney-Malheur Lakes	Total
1998	0 0.00 0.00 0.00	1 2.44 100.00 3.03	1 2.44
2006	0 0.00 0.00 0.00	1 2.44 100.00 3.03	1 2.44
2007	2 4.88 100.00 25.00	0 0.00 0.00 0.00	2 4.88
2009	0 0.00 0.00 0.00	2 4.88 100.00 6.06	2 4.88
2013	0 0.00 0.00 0.00	1 2.44 100.00 3.03	1 2.44
Total	8 19.51	33 80.49	41 100.00

Groundwater in Harney Basin
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Question 11. What year was this primary residential well installed? (Please mark Don't Know if you are unsure)
(Respondents who answered 'No' to question 4)



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Question 11. What year was this primary residential well installed? (Please mark Don't Know if you are unsure)
(Respondents who answered 'Yes' to question 5)

The FREQ Procedure

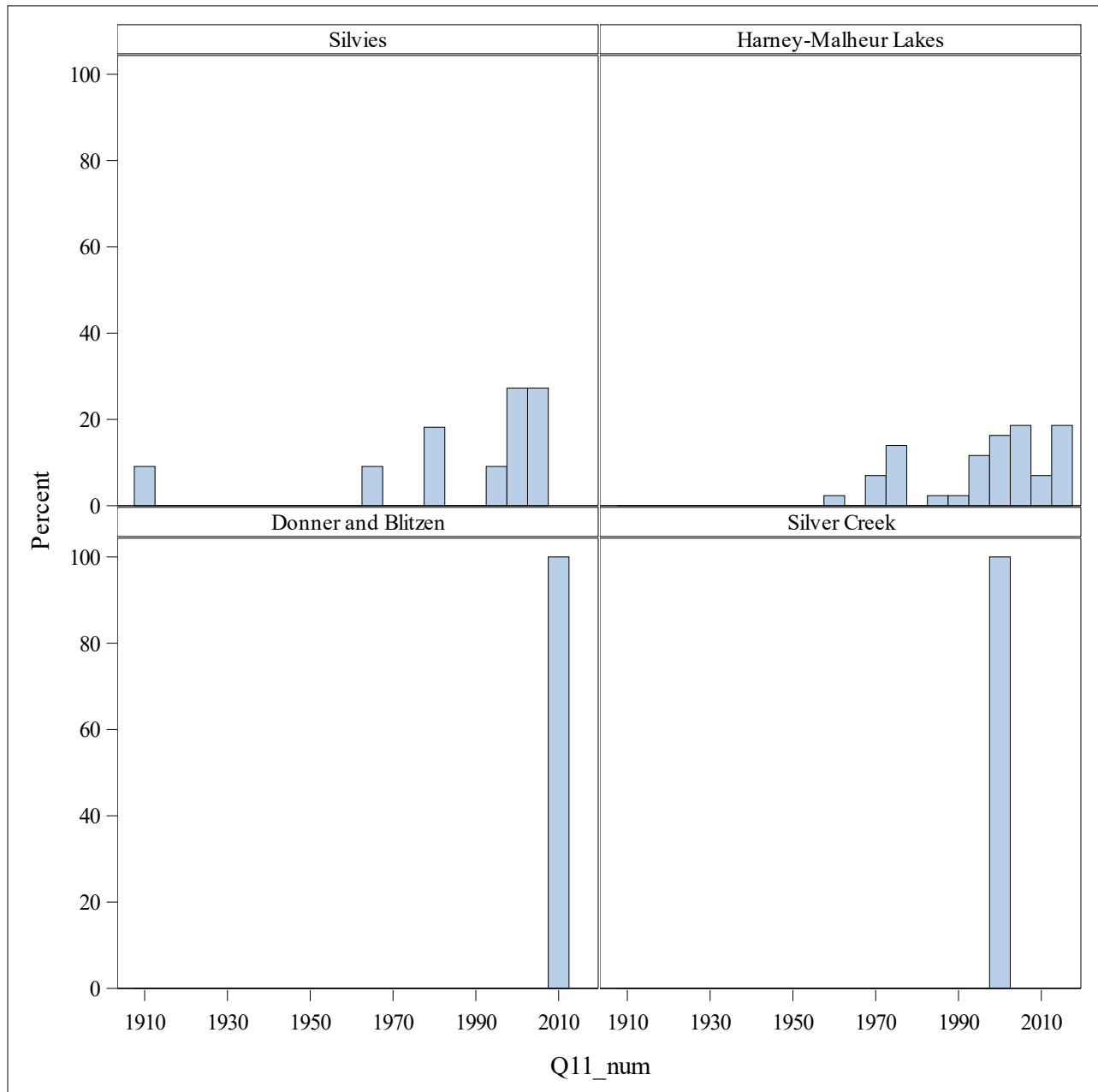
Table of Q11 by SUB_BASIN					
Q11	SUB_BASIN				
Frequency Percent Row Pct Col Pct	Silvies	Harney-Malheur Lakes	Donner and Blitzen	Silver Creek	Total
Don't know	26 19.12 32.50 70.27	52 38.24 65.00 54.74	0 0.00 0.00 0.00	2 1.47 2.50 66.67	80 58.82
1910	1 0.74 100.00 2.70	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	1 0.74
1960	0 0.00 0.00 0.00	1 0.74 100.00 1.05	0 0.00 0.00 0.00	0 0.00 0.00 0.00	1 0.74
1963	1 0.74 100.00 2.70	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	1 0.74
1969	0 0.00 0.00 0.00	2 1.47 100.00 2.11	0 0.00 0.00 0.00	0 0.00 0.00 0.00	2 1.47
1970	0 0.00 0.00 0.00	1 0.74 100.00 1.05	0 0.00 0.00 0.00	0 0.00 0.00 0.00	1 0.74
1974	0 0.00 0.00 0.00	4 2.94 100.00 4.21	0 0.00 0.00 0.00	0 0.00 0.00 0.00	4 2.94

Table of Q11 by SUB_BASIN					
Q11	SUB_BASIN				
Frequency Percent Row Pct Col Pct	Silvies	Harney-Malheur Lakes	Donner and Blitzen	Silver Creek	Total
1975	0 0.00 0.00 0.00	1 0.74 100.00 1.05	0 0.00 0.00 0.00	0 0.00 0.00 0.00	1 0.74
1976	0 0.00 0.00 0.00	1 0.74 100.00 1.05	0 0.00 0.00 0.00	0 0.00 0.00 0.00	1 0.74
1979	1 0.74 100.00 2.70	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	1 0.74
1981	1 0.74 100.00 2.70	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	1 0.74
1983	0 0.00 0.00 0.00	1 0.74 100.00 1.05	0 0.00 0.00 0.00	0 0.00 0.00 0.00	1 0.74
1990	0 0.00 0.00 0.00	1 0.74 100.00 1.05	0 0.00 0.00 0.00	0 0.00 0.00 0.00	1 0.74
1997	1 0.74 16.67 2.70	5 3.68 83.33 5.26	0 0.00 0.00 0.00	0 0.00 0.00 0.00	6 4.41
1998	1 0.74 25.00 2.70	2 1.47 50.00 2.11	0 0.00 0.00 0.00	1 0.74 25.00 33.33	4 2.94
1999	0 0.00 0.00 0.00	2 1.47 100.00 2.11	0 0.00 0.00 0.00	0 0.00 0.00 0.00	2 1.47
2000	2 1.47 50.00 5.41	2 1.47 50.00 2.11	0 0.00 0.00 0.00	0 0.00 0.00 0.00	4 2.94
2002	0 0.00 0.00 0.00	1 0.74 100.00 1.05	0 0.00 0.00 0.00	0 0.00 0.00 0.00	1 0.74

Table of Q11 by SUB_BASIN					
Q11	SUB_BASIN				
Frequency Percent Row Pct Col Pct	Silvies	Harney-Malheur Lakes	Donner and Blitzen	Silver Creek	Total
2003	0 0.00 0.00 0.00	1 0.74 100.00 1.05	0 0.00 0.00 0.00	0 0.00 0.00 0.00	1 0.74
2005	0 0.00 0.00 0.00	1 0.74 100.00 1.05	0 0.00 0.00 0.00	0 0.00 0.00 0.00	1 0.74
2006	0 0.00 0.00 0.00	3 2.21 100.00 3.16	0 0.00 0.00 0.00	0 0.00 0.00 0.00	3 2.21
2007	3 2.21 50.00 8.11	3 2.21 50.00 3.16	0 0.00 0.00 0.00	0 0.00 0.00 0.00	6 4.41
2009	0 0.00 0.00 0.00	3 2.21 100.00 3.16	0 0.00 0.00 0.00	0 0.00 0.00 0.00	3 2.21
2010	0 0.00 0.00 0.00	0 0.00 0.00 0.00	1 0.74 100.00 100.00	0 0.00 0.00 0.00	1 0.74
2013	0 0.00 0.00 0.00	2 1.47 100.00 2.11	0 0.00 0.00 0.00	0 0.00 0.00 0.00	2 1.47
2014	0 0.00 0.00 0.00	3 2.21 100.00 3.16	0 0.00 0.00 0.00	0 0.00 0.00 0.00	3 2.21
2015	0 0.00 0.00 0.00	2 1.47 100.00 2.11	0 0.00 0.00 0.00	0 0.00 0.00 0.00	2 1.47
2016	0 0.00 0.00 0.00	1 0.74 100.00 1.05	0 0.00 0.00 0.00	0 0.00 0.00 0.00	1 0.74
Total	37 27.21	95 69.85	1 0.74	3 2.21	136 100.00

Groundwater in Harney Basin
A questionnaire for residential well users in Harney Basin
Harney County Watershed Council
Sub-basin Crosstabs

Question 11. What year was this primary residential well installed? (Please mark Don't Know if you are unsure)
(Respondents who answered 'Yes' to question 5)



Groundwater in Harney Basin
A questionnaire for residential well users in Harney Basin
Harney County Watershed Council
Sub-basin Crosstabs

Question 12. How deep is this well?

The FREQ Procedure

Table of Q12 by SUB_BASIN					
Q12	SUB_BASIN				
Frequency Percent Row Pct Col Pct	Silvies	Harney-Malheur Lakes	Donner and Blitzen	Silver Creek	Total
50 feet or less	12 2.54 37.50 7.64	19 4.03 59.38 6.93	1 0.21 3.13 6.25	0 0.00 0.00 0.00	32 6.78
51 to 100 feet	43 9.11 38.39 27.39	65 13.77 58.04 23.72	3 0.64 2.68 18.75	1 0.21 0.89 4.00	112 23.73
101 to 250 feet	35 7.42 23.81 22.29	97 20.55 65.99 35.40	5 1.06 3.40 31.25	10 2.12 6.80 40.00	147 31.14
251 to 500 feet	14 2.97 31.11 8.92	29 6.14 64.44 10.58	1 0.21 2.22 6.25	1 0.21 2.22 4.00	45 9.53
More than 500 feet	3 0.64 50.00 1.91	2 0.42 33.33 0.73	0 0.00 0.00 0.00	1 0.21 16.67 4.00	6 1.27
Don't know	48 10.17 39.02 30.57	59 12.50 47.97 21.53	5 1.06 4.07 31.25	11 2.33 8.94 44.00	123 26.06
No response	2 0.42 28.57 1.27	3 0.64 42.86 1.09	1 0.21 14.29 6.25	1 0.21 14.29 4.00	7 1.48
Total	157 33.26	274 58.05	16 3.39	25 5.30	472 100.00
Frequency Missing = 102					

Groundwater in Harney Basin
A questionnaire for residential well users in Harney Basin
Harney County Watershed Council
Sub-basin Crosstabs

Question 12. How deep is this well?
(Respondents who answered 'No' to question 4 or 'Yes' to question 5)

The FREQ Procedure

Table of Q12 by SUB_BASIN					
Q12	SUB_BASIN				
Frequency Percent Row Pct Col Pct	Silvies	Harney-Malheur Lakes	Donner and Blitzen	Silver Creek	Total
50 feet or less	2 1.40 20.00 5.26	8 5.59 80.00 7.92	0 0.00 0.00 0.00	0 0.00 0.00 0.00	10 6.99
51 to 100 feet	11 7.69 28.21 28.95	28 19.58 71.79 27.72	0 0.00 0.00 0.00	0 0.00 0.00 0.00	39 27.27
101 to 250 feet	10 6.99 21.28 26.32	35 24.48 74.47 34.65	1 0.70 2.13 100.00	1 0.70 2.13 33.33	47 32.87
251 to 500 feet	3 2.10 25.00 7.89	9 6.29 75.00 8.91	0 0.00 0.00 0.00	0 0.00 0.00 0.00	12 8.39
More than 500 feet	2 1.40 40.00 5.26	2 1.40 40.00 1.98	0 0.00 0.00 0.00	1 0.70 20.00 33.33	5 3.50
Don't know	10 6.99 34.48 26.32	18 12.59 62.07 17.82	0 0.00 0.00 0.00	1 0.70 3.45 33.33	29 20.28
No response	0 0.00 0.00 0.00	1 0.70 100.00 0.99	0 0.00 0.00 0.00	0 0.00 0.00 0.00	1 0.70
Total	38 26.57	101 70.63	1 0.70	3 2.10	143 100.00

Groundwater in Harney Basin
A questionnaire for residential well users in Harney Basin
Harney County Watershed Council
Sub-basin Crosstabs

Question 12. How deep is this well?
(Respondents who answered 'No' to question 4)

The FREQ Procedure

Table of Q12 by SUB_BASIN			
Q12	SUB_BASIN		
Frequency Percent Row Pct Col Pct	Silvies	Harney-Malheur Lakes	Total
50 feet or less	0 0.00 0.00 0.00	5 12.20 100.00 15.15	5 12.20
51 to 100 feet	2 4.88 16.67 25.00	10 24.39 83.33 30.30	12 29.27
101 to 250 feet	2 4.88 18.18 25.00	9 21.95 81.82 27.27	11 26.83
251 to 500 feet	2 4.88 50.00 25.00	2 4.88 50.00 6.06	4 9.76
More than 500 feet	2 4.88 50.00 25.00	2 4.88 50.00 6.06	4 9.76
Don't know	0 0.00 0.00 0.00	5 12.20 100.00 15.15	5 12.20
Total	8 19.51	33 80.49	41 100.00

Groundwater in Harney Basin
A questionnaire for residential well users in Harney Basin
Harney County Watershed Council
Sub-basin Crosstabs

Question 12. How deep is this well?
(Respondents who answered 'Yes' to question 5)

The FREQ Procedure

Table of Q12 by SUB_BASIN					
Q12	SUB_BASIN				
Frequency Percent Row Pct Col Pct	Silvies	Harney-Malheur Lakes	Donner and Blitzen	Silver Creek	Total
50 feet or less	2 1.47 20.00 5.41	8 5.88 80.00 8.42	0 0.00 0.00 0.00	0 0.00 0.00 0.00	10 7.35
51 to 100 feet	10 7.35 28.57 27.03	25 18.38 71.43 26.32	0 0.00 0.00 0.00	0 0.00 0.00 0.00	35 25.74
101 to 250 feet	10 7.35 21.74 27.03	34 25.00 73.91 35.79	1 0.74 2.17 100.00	1 0.74 2.17 33.33	46 33.82
251 to 500 feet	3 2.21 27.27 8.11	8 5.88 72.73 8.42	0 0.00 0.00 0.00	0 0.00 0.00 0.00	11 8.09
More than 500 feet	2 1.47 40.00 5.41	2 1.47 40.00 2.11	0 0.00 0.00 0.00	1 0.74 20.00 33.33	5 3.68
Don't know	10 7.35 35.71 27.03	17 12.50 60.71 17.89	0 0.00 0.00 0.00	1 0.74 3.57 33.33	28 20.59
No response	0 0.00 0.00 0.00	1 0.74 100.00 1.05	0 0.00 0.00 0.00	0 0.00 0.00 0.00	1 0.74
Total	37 27.21	95 69.85	1 0.74	3 2.21	136 100.00

Groundwater in Harney Basin
A questionnaire for residential well users in Harney Basin
Harney County Watershed Council
Sub-basin Crosstabs

Question 13. Have you brought in water for household or outdoor use from another source in the last 10 years? For example, hauling water from another source or from a secondary well.

The FREQ Procedure

Table of Q13 by SUB_BASIN					
Q13	SUB_BASIN				
Frequency Percent Row Pct Col Pct	Silvies	Harney-Malheur Lakes	Donner and Blitzen	Silver Creek	Total
Yes	40 8.47 30.77 25.48	86 18.22 66.15 31.39	2 0.42 1.54 12.50	2 0.42 1.54 8.00	130 27.54
No	111 23.52 33.74 70.70	181 38.35 55.02 66.06	14 2.97 4.26 87.50	23 4.87 6.99 92.00	329 69.70
Don't know	5 1.06 45.45 3.18	6 1.27 54.55 2.19	0 0.00 0.00 0.00	0 0.00 0.00 0.00	11 2.33
No response	1 0.21 50.00 0.64	1 0.21 50.00 0.36	0 0.00 0.00 0.00	0 0.00 0.00 0.00	2 0.42
Total	157 33.26	274 58.05	16 3.39	25 5.30	472 100.00
Frequency Missing = 102					

Groundwater in Harney Basin
A questionnaire for residential well users in Harney Basin
Harney County Watershed Council
Sub-basin Crosstabs

Question 13. Have you brought in water for household or outdoor use from another source in the last 10 years? For example, hauling water from another source or from a secondary well.
(Respondents who answered 'No' to question 4 or 'Yes' to question 5)

The FREQ Procedure

Table of Q13 by SUB_BASIN					
Q13	SUB_BASIN				
Frequency Percent Row Pct Col Pct	Silvies	Harney-Malheur Lakes	Donner and Blitzen	Silver Creek	Total
Yes	21 14.69 29.58 55.26	50 34.97 70.42 49.50	0 0.00 0.00 0.00	0 0.00 0.00 0.00	71 49.65
No	17 11.89 23.94 44.74	50 34.97 70.42 49.50	1 0.70 1.41 100.00	3 2.10 4.23 100.00	71 49.65
No response	0 0.00 0.00 0.00	1 0.70 100.00 0.99	0 0.00 0.00 0.00	0 0.00 0.00 0.00	1 0.70
Total	38 26.57	101 70.63	1 0.70	3 2.10	143 100.00

Groundwater in Harney Basin
A questionnaire for residential well users in Harney Basin
Harney County Watershed Council
Sub-basin Crosstabs

Question 13. Have you brought in water for household or outdoor use from another source in the last 10 years? For example, hauling water from another source or from a secondary well.
(Respondents who answered 'No' to question 4)

The FREQ Procedure

Table of Q13 by SUB_BASIN			
Q13	SUB_BASIN		
Frequency Percent Row Pct Col Pct	Silvies	Harney-Malheur Lakes	Total
Yes	6 14.63 20.69 75.00	23 56.10 79.31 69.70	29 70.73
No	2 4.88 16.67 25.00	10 24.39 83.33 30.30	12 29.27
Total	8 19.51	33 80.49	41 100.00

Groundwater in Harney Basin
A questionnaire for residential well users in Harney Basin
Harney County Watershed Council
Sub-basin Crosstabs

Question 13. Have you brought in water for household or outdoor use from another source in the last 10 years? For example, hauling water from another source or from a secondary well.
(Respondents who answered 'Yes' to question 5)

The FREQ Procedure

Table of Q13 by SUB_BASIN					
Q13	SUB_BASIN				
Frequency Percent Row Pct Col Pct	Silvies	Harney-Malheur Lakes	Donner and Blitzen	Silver Creek	Total
Yes	20 14.71 29.85 54.05	47 34.56 70.15 49.47	0 0.00 0.00 0.00	0 0.00 0.00 0.00	67 49.26
No	17 12.50 25.00 45.95	47 34.56 69.12 49.47	1 0.74 1.47 100.00	3 2.21 4.41 100.00	68 50.00
No response	0 0.00 0.00 0.00	1 0.74 100.00 1.05	0 0.00 0.00 0.00	0 0.00 0.00 0.00	1 0.74
Total	37 27.21	95 69.85	1 0.74	3 2.21	136 100.00

Groundwater in Harney Basin
A questionnaire for residential well users in Harney Basin
Harney County Watershed Council
Sub-basin Crosstabs

Question 13a. Please indicate whether or not you brought in water from another source for each of the following purposes.

The FREQ Procedure

Table of Q13a_1 by SUB_BASIN					
Q13a_1(Drinking/cooking)	SUB_BASIN				
Frequency Percent Row Pct Col Pct	Silvies	Harney-Malheur Lakes	Donner and Blitzen	Silver Creek	Total
Yes, brought in for this	37 28.46 31.36 92.50	78 60.00 66.10 90.70	1 0.77 0.85 50.00	2 1.54 1.69 100.00	118 90.77
No, not brought in for this	1 0.77 25.00 2.50	3 2.31 75.00 3.49	0 0.00 0.00 0.00	0 0.00 0.00 0.00	4 3.08
No response	2 1.54 25.00 5.00	5 3.85 62.50 5.81	1 0.77 12.50 50.00	0 0.00 0.00 0.00	8 6.15
Total	40 30.77	86 66.15	2 1.54	2 1.54	130 100.00
Frequency Missing = 444					

Groundwater in Harney Basin
A questionnaire for residential well users in Harney Basin
Harney County Watershed Council
Sub-basin Crosstabs

Question 13a. Please indicate whether or not you brought in water from another source for each of the following purposes.

The FREQ Procedure

Table of Q13a_2 by SUB_BASIN					
Q13a_2(Other indoor use)	SUB_BASIN				
Frequency Percent Row Pct Col Pct	Silvies	Harney-Malheur Lakes	Donner and Blitzen	Silver Creek	Total
Yes, brought in for this	12 9.23 34.29 30.00	23 17.69 65.71 26.74	0 0.00 0.00 0.00	0 0.00 0.00 0.00	35 26.92
No, not brought in for this	23 17.69 31.08 57.50	48 36.92 64.86 55.81	1 0.77 1.35 50.00	2 1.54 2.70 100.00	74 56.92
No response	5 3.85 23.81 12.50	15 11.54 71.43 17.44	1 0.77 4.76 50.00	0 0.00 0.00 0.00	21 16.15
Total	40 30.77	86 66.15	2 1.54	2 1.54	130 100.00
Frequency Missing = 444					

Groundwater in Harney Basin
A questionnaire for residential well users in Harney Basin
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Sub-basin Crosstabs

Question 13a. Please indicate whether or not you brought in water from another source for each of the following purposes.

The FREQ Procedure

Table of Q13a_3 by SUB_BASIN					
Q13a_3(Irrigation of any lawn or noncommercial garden of 1/2 acre or less)	SUB_BASIN				
Frequency Percent Row Pct Col Pct	Silvies	Harney-Malheur Lakes	Donner and Blitzen	Silver Creek	Total
Yes, brought in for this	4 3.08 19.05 10.00	16 12.31 76.19 18.60	1 0.77 4.76 50.00	0 0.00 0.00 0.00	21 16.15
No, not brought in for this	32 24.62 35.96 80.00	54 41.54 60.67 62.79	1 0.77 1.12 50.00	2 1.54 2.25 100.00	89 68.46
No response	4 3.08 20.00 10.00	16 12.31 80.00 18.60	0 0.00 0.00 0.00	0 0.00 0.00 0.00	20 15.38
Total	40 30.77	86 66.15	2 1.54	2 1.54	130 100.00
Frequency Missing = 444					

Groundwater in Harney Basin
A questionnaire for residential well users in Harney Basin
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Sub-basin Crosstabs

Question 13a. Please indicate whether or not you brought in water from another source for each of the following purposes.

The FREQ Procedure

Table of Q13a_4 by SUB_BASIN					
Q13a_4(Livestock)	SUB_BASIN				
Frequency Percent Row Pct Col Pct	Silvies	Harney-Malheur Lakes	Donner and Blitzen	Silver Creek	Total
Yes, brought in for this	8 6.15 28.57 20.00	20 15.38 71.43 23.26	0 0.00 0.00 0.00	0 0.00 0.00 0.00	28 21.54
No, not brought in for this	29 22.31 34.52 72.50	52 40.00 61.90 60.47	1 0.77 1.19 50.00	2 1.54 2.38 100.00	84 64.62
No response	3 2.31 16.67 7.50	14 10.77 77.78 16.28	1 0.77 5.56 50.00	0 0.00 0.00 0.00	18 13.85
Total	40 30.77	86 66.15	2 1.54	2 1.54	130 100.00
Frequency Missing = 444					

Groundwater in Harney Basin
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Sub-basin Crosstabs

Question 13a. Please indicate whether or not you brought in water from another source for each of the following purposes.

The FREQ Procedure

Table of Q13a_5 by SUB_BASIN					
Q13a_5(Other)	SUB_BASIN				
Frequency Percent Row Pct Col Pct	Silvies	Harney-Malheur Lakes	Donner and Blitzen	Silver Creek	Total
Yes, brought in for this	4 3.08 40.00 10.00	6 4.62 60.00 6.98	0 0.00 0.00 0.00	0 0.00 0.00 0.00	10 7.69
No response	36 27.69 30.00 90.00	80 61.54 66.67 93.02	2 1.54 1.67 100.00	2 1.54 1.67 100.00	120 92.31
Total	40 30.77	86 66.15	2 1.54	2 1.54	130 100.00
Frequency Missing = 444					

Groundwater in Harney Basin
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Harney County Watershed Council
Sub-basin Crosstabs

Question 14. Do you have an additional functioning residential well on this property?

The FREQ Procedure

Table of Q14 by SUB_BASIN					
Q14	SUB_BASIN				
Frequency Percent Row Pct Col Pct	Silvies	Harney-Malheur Lakes	Donner and Blitzen	Silver Creek	Total
Yes	24 5.08 32.00 15.29	42 8.90 56.00 15.33	4 0.85 5.33 25.00	5 1.06 6.67 20.00	75 15.89
No	130 27.54 33.51 82.80	226 47.88 58.25 82.48	12 2.54 3.09 75.00	20 4.24 5.15 80.00	388 82.20
Don't know	2 0.42 50.00 1.27	2 0.42 50.00 0.73	0 0.00 0.00 0.00	0 0.00 0.00 0.00	4 0.85
No response	1 0.21 20.00 0.64	4 0.85 80.00 1.46	0 0.00 0.00 0.00	0 0.00 0.00 0.00	5 1.06
Total	157 33.26	274 58.05	16 3.39	25 5.30	472 100.00
Frequency Missing = 102					

Groundwater in Harney Basin
A questionnaire for residential well users in Harney Basin
Harney County Watershed Council
Sub-basin Crosstabs

Question 14a. Please indicate whether or not this well is used for each of the following purposes.

The FREQ Procedure

Table of Q14a_1 by SUB_BASIN					
Q14a_1(Drinking/cooking)	SUB_BASIN				
Frequency Percent Row Pct Col Pct	Silvies	Harney-Malheur Lakes	Donner and Blitzen	Silver Creek	Total
Yes, used for this	9 12.00 29.03 37.50	16 21.33 51.61 38.10	2 2.67 6.45 50.00	4 5.33 12.90 80.00	31 41.33
No, not used for this	10 13.33 47.62 41.67	10 13.33 47.62 23.81	1 1.33 4.76 25.00	0 0.00 0.00 0.00	21 28.00
No response	5 6.67 21.74 20.83	16 21.33 69.57 38.10	1 1.33 4.35 25.00	1 1.33 4.35 20.00	23 30.67
Total	24 32.00	42 56.00	4 5.33	5 6.67	75 100.00
Frequency Missing = 499					

Groundwater in Harney Basin
A questionnaire for residential well users in Harney Basin
Harney County Watershed Council
Sub-basin Crosstabs

Question 14a. Please indicate whether or not this well is used for each of the following purposes.

The FREQ Procedure

Table of Q14a_2 by SUB_BASIN					
Q14a_2(Other indoor use)	SUB_BASIN				
Frequency Percent Row Pct Col Pct	Silvies	Harney-Malheur Lakes	Donner and Blitzen	Silver Creek	Total
Yes, used for this	9 12.00 31.03 37.50	15 20.00 51.72 35.71	1 1.33 3.45 25.00	4 5.33 13.79 80.00	29 38.67
No, not used for this	10 13.33 45.45 41.67	11 14.67 50.00 26.19	1 1.33 4.55 25.00	0 0.00 0.00 0.00	22 29.33
No response	5 6.67 20.83 20.83	16 21.33 66.67 38.10	2 2.67 8.33 50.00	1 1.33 4.17 20.00	24 32.00
Total	24 32.00	42 56.00	4 5.33	5 6.67	75 100.00
Frequency Missing = 499					

Groundwater in Harney Basin
A questionnaire for residential well users in Harney Basin
Harney County Watershed Council
Sub-basin Crosstabs

Question 14a. Please indicate whether or not this well is used for each of the following purposes.

The FREQ Procedure

Table of Q14a_3 by SUB_BASIN					
Q14a_3(Irrigation of any lawn or noncommercial garden of 1/2 acre or less)	SUB_BASIN				
Frequency Percent Row Pct Col Pct	Silvies	Harney-Malheur Lakes	Donner and Blitzen	Silver Creek	Total
Yes, used for this	15 20.00 32.61 62.50	25 33.33 54.35 59.52	2 2.67 4.35 50.00	4 5.33 8.70 80.00	46 61.33
No, not used for this	5 6.67 41.67 20.83	6 8.00 50.00 14.29	1 1.33 8.33 25.00	0 0.00 0.00 0.00	12 16.00
No response	4 5.33 23.53 16.67	11 14.67 64.71 26.19	1 1.33 5.88 25.00	1 1.33 5.88 20.00	17 22.67
Total	24 32.00	42 56.00	4 5.33	5 6.67	75 100.00
Frequency Missing = 499					

Groundwater in Harney Basin
A questionnaire for residential well users in Harney Basin
Harney County Watershed Council
Sub-basin Crosstabs

Question 14a. Please indicate whether or not this well is used for each of the following purposes.

The FREQ Procedure

Table of Q14a_4 by SUB_BASIN					
Q14a_4(Livestock)	SUB_BASIN				
Frequency Percent Row Pct Col Pct	Silvies	Harney-Malheur Lakes	Donner and Blitzen	Silver Creek	Total
Yes, used for this	16 21.33 32.00 66.67	27 36.00 54.00 64.29	3 4.00 6.00 75.00	4 5.33 8.00 80.00	50 66.67
No, not used for this	5 6.67 45.45 20.83	6 8.00 54.55 14.29	0 0.00 0.00 0.00	0 0.00 0.00 0.00	11 14.67
No response	3 4.00 21.43 12.50	9 12.00 64.29 21.43	1 1.33 7.14 25.00	1 1.33 7.14 20.00	14 18.67
Total	24 32.00	42 56.00	4 5.33	5 6.67	75 100.00
Frequency Missing = 499					

Groundwater in Harney Basin
A questionnaire for residential well users in Harney Basin
Harney County Watershed Council
Sub-basin Crosstabs

Question 14a. Please indicate whether or not this well is used for each of the following purposes.

The FREQ Procedure

Table of Q14a_5 by SUB_BASIN					
Q14a_5(Other)	SUB_BASIN				
Frequency Percent Row Pct Col Pct	Silvies	Harney-Malheur Lakes	Donner and Blitzen	Silver Creek	Total
Yes, used for this	3 4.00 37.50 12.50	4 5.33 50.00 9.52	1 1.33 12.50 25.00	0 0.00 0.00 0.00	8 10.67
No response	21 28.00 31.34 87.50	38 50.67 56.72 90.48	3 4.00 4.48 75.00	5 6.67 7.46 100.00	67 89.33
Total	24 32.00	42 56.00	4 5.33	5 6.67	75 100.00
Frequency Missing = 499					

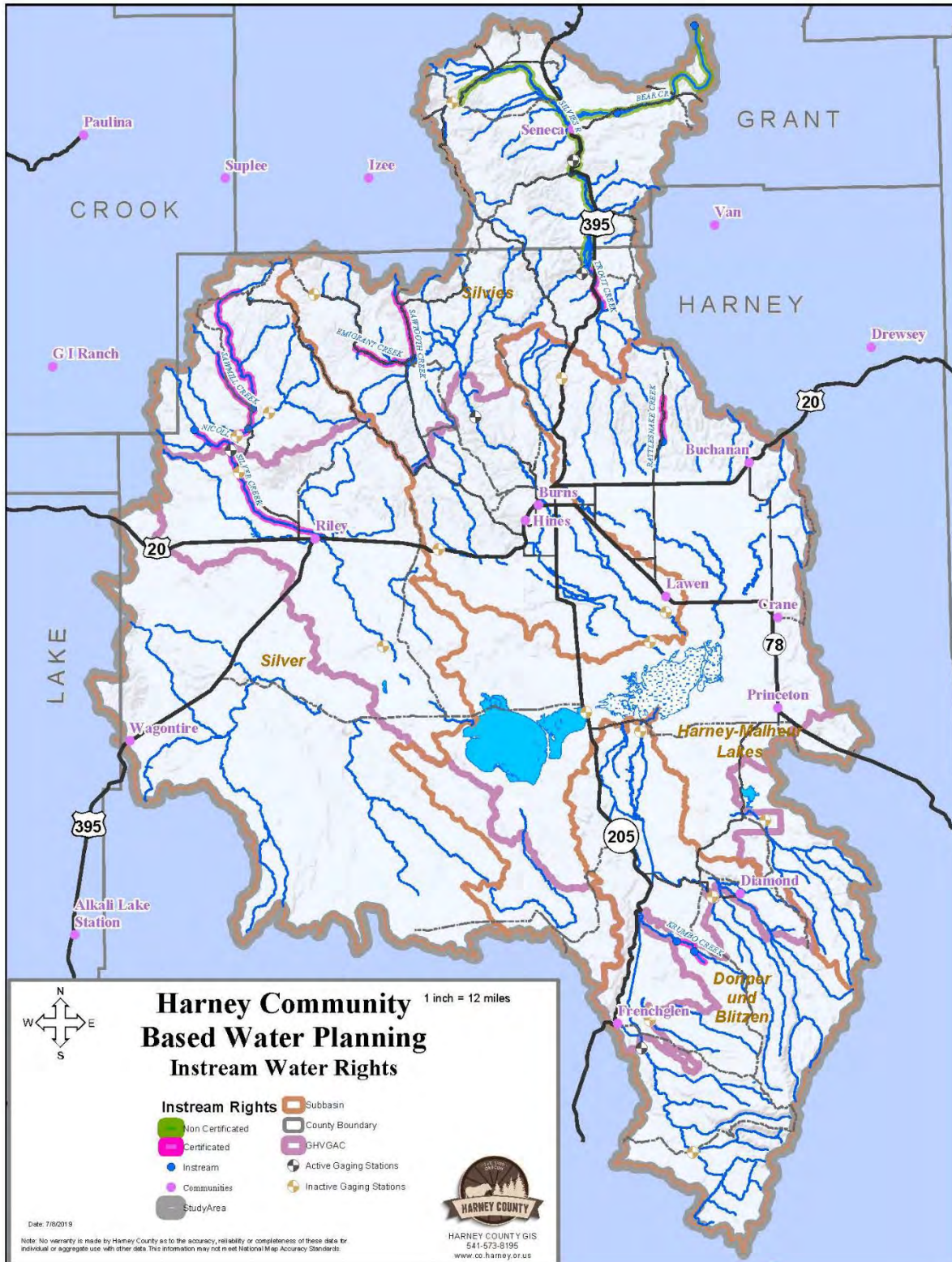
Groundwater in Harney Basin
A questionnaire for residential well users in Harney Basin
Harney County Watershed Council
Sub-basin Crosstabs

Question 14b. Thinking about the last 10 years, has this additional residential well experienced a decline in yield (volume pumped) or rate (e.g., gallons per minute)?
Evidence of this could include sucking air or sand.

The FREQ Procedure

Table of Q14b by SUB_BASIN					
Q14b	SUB_BASIN				
Frequency Percent Row Pct Col Pct	Silvies	Harney-Malheur Lakes	Donner and Blitzen	Silver Creek	Total
Yes	4 5.33 26.67 16.67	11 14.67 73.33 26.19	0 0.00 0.00 0.00	0 0.00 0.00 0.00	15 20.00
No	12 16.00 25.53 50.00	27 36.00 57.45 64.29	4 5.33 8.51 100.00	4 5.33 8.51 80.00	47 62.67
Don't know	8 10.67 61.54 33.33	4 5.33 30.77 9.52	0 0.00 0.00 0.00	1 1.33 7.69 20.00	13 17.33
Total	24 32.00	42 56.00	4 5.33	5 6.67	75 100.00
Frequency Missing = 499					

APPENDIX D: HARNEY SUB-BASIN REGIONAL MAP



Thoughts on the Harney Basin 512 Rules and the broader issues they raise

The 2025 Groundwater Regulation Proposal for the Harney Basin

The Harney Basin 512 Rules use the legal tools available to the Oregon Water Resources Commission to address water resource impacts from overallocation and over pumping. The tools are presented are science-based and focus almost exclusively on the physics of groundwater. The groundwater system as portrayed in the Harney Basin Groundwater Model is a mass balance equation. Input (precipitation) minus output (pumping, ET, stream & spring discharge) equals change in storage. The legal tools the Department is asking the Commission to consider are a mix of policy, science of groundwater hydrology, and levels of legal authority. The complex program described in Table 1 has many interconnected parts, is based on a complex model that few people understand. All this complexity and technical evaluation makes it difficult for those impacted by proposed curtailments to understand. Failure to understand or become familiar with the interaction among the parts of the proposal has led to community frustration and skepticism about the science and intent of the Department.

Table 1: Harney Basin Groundwater Proposal (512 Rules)

Harney Basin Groundwater Regulation Complex		
Proposed Rule	Policy Choice	Consequences/Options
Reservoir Definition	Area for which a Critical Groundwater Management Area may be drawn	Department proposes the hydrological basin/ other options could be defined to only include areas meeting excessively declined conditions
Classification	Specifies the type of future use	Department proposes to only allow exempt uses
Serious Water Management Problem Area	Requires measurement of water use	Department is proposing specific measurement devices on each well. This is a regulatory tool to ensure individual wells are not pumped beyond permit authorization/ other measurements of overall water use are available
Critical Groundwater Management Area	Designation of area to provide curtailment authority of groundwater use	Department is proposing to identify the entire area of lowlands (previously adopted GHVGAC) as a CGMA
Goal for groundwater	Definition of how the basin will reach "relatively stable" groundwater conditions	Department has proposed a criteria of groundwater levels having 0 decline over 5 years as measured by median values of measured levels
Time to meet the Goal	Determination of the time to reach relative stable groundwater level	Department is proposing a 30 year time frame to meet "relatively stable" groundwater levels
Identification of Subareas	Identification of different response area within the basin	Department is proposing 7 subareas of the CGMA
Establishment of Permissible Total Withdrawal	Amount of groundwater allowed by rule for each subarea of the CGMA	Department is proposing total pumping limits based on modeled outcomes to meet the "relatively stable" conditions of the basin as a whole
Establish a Baseline of Historic Use	Modify individual Permits by "current Beneficial Use	Department is proposing to alter water rights to only the acreage irrigated during the 2020-2024 period
Establish a reduced Duty	Modify individual Permits to a lower duty	Department is proposing to modify Individual Permits to a duty of 2.5 acre-feet/acre
Adaptive Management	Review groundwater levels against modeled groundwater levels on a 6-year basis	Department has proposed specific adjustments for differences between modeled and measured groundwater levels that could adjust PTW
Monitoring	Permit compliance, SWAMPA compliance, PTW compliance	Department has not addressed enforcement ability

The goal of these measures is to stabilize groundwater levels in thirty years' time. As the staff has recognized and the economic analysis has projected, these changes will have a significant impact on the social and economic fabric of the Harney basin community.

The History of Resources in the Harney Basin

An alternative way to look at the situation in the Harney Basin is to look at it more holistically as a social-ecological system. The development of groundwater did not occur in a vacuum or overnight. The Harney County community, as a frontier community has a history of resource exploitation and booms and crashes with influences from outside parties. After the termination of the Malheur Indian Reservation and "discovery" of the grazing opportunity by California cattle operations, the county became the focus of cattle rearing dominated by large ranches aided by the Swamp Land Acts of the U. S. Congress and the Oregon Legislature to transfer large areas of land to ranching interests.

Unregulated grazing led to overgrazing of many of the higher elevation areas by transient bands of sheep and large herds of cattle. At the turn of the 20th century the Malheur Bird Refuge was declared by Presidential Executive Order. In the 1920's with the construction of the Hines Mill, lumber production from Ponderosa pine forests of the Malheur National Forest became the primary non ranching employer in the County.

Agriculture in the basin has been dominated by cattle production and haying of spring flood irrigated wet meadows. The wet meadows are maintained by flood irrigation that provides a significant amount of the habitat for spring migratory birds that come from the south heading to the north on the Pacific Flyway. These private lands have for more than a century and a half have provided fodder for cattle and migratory bird habitat. Flood irrigated wet meadows along with spring flooding provides some two thirds of the recharge of groundwater to the lowlands of the Harney basin.

With the drought period of the 1930's two large ranches were sold to the U.S. Government to add to the Malheur Refuge. The purchase of the "P Ranch" from the Eastern Oregon Land Company and the "Double O Ranch" from the widow of William Hanley created the bulk of what is now the Malheur National Wildlife Refuge. The hydrology of the Blitzen River in the Wildlife Refuge was intensively modified by the Civilian Conservation Corps between 1935 until 1942.

The years following World War II were good for lumber production and Haines Mill was very productive for the next 30 years. The mill closed abruptly in 1980 and Harney County saw unemployment at 30%.

Agricultural crop production in Harney County has been limited by the growing season and lack of water. With groundwater development in the 1970's and the success of groundwater

irrigation, the opportunity for a limited suite of crops became available. Alfalfa dominates the groundwater irrigated cropland, primarily because of the tolerance to a highly variable temperature regime (frost can occur any month of the year).

The history of boom and bust is playing out with groundwater irrigated alfalfa. The projected loss of 35% of the economic activity of the community and loss of 160-320 jobs is not significantly different from 1980 to community residents.

Basin surface water irrigators have accommodated to massive over appropriation and highly variable water supplies.

When the surface water was adjudicated for the Silvies River in 1926, the State Engineer would not issue certificates because the court issued more rights than water available even in good years. Over time, ranchers dependent on surface water have developed adaptations to uncertain water supplies. Ranchers try to have enough grass hay to feed for a year or two. Most cattle production uses the lowland hay ground only in the fall and winter after the calves are sold. After a series of dry years, ranchers reduce their herd size to fit the available forage, both winter forage from flood irrigated hay meadows and range forage. The ranching community has a good knowledge of what they need to do to accommodate the highly variable annual precipitation conditions of the basin. Other accommodations such as the MNWR providing alternative range on flooded meadows when forest ranges burn as this recent year is another mechanism for adaptation to unpredictable conditions. These examples of adaptive capacity to drought is based on the specific conditions of the basin. There has been a strong effort to better understand the methods and actions that ranchers use to adapt to different water years and exploring how those management differences affect bird use. While there are still conflicts over water use, especially during low water years or late season when water availability is low. The County Court has engaged with OWRD to help build better understanding of water allocation and the limits that OWRD has to resolve conflicts. Additional tools have been called for to help provide more timely information on water availability during irrigation season by the integrated water planning collaborative. The surface water community knows the rules and while they may have disputes over access and how rules are administered, the recognition of the highly variable supply of water, the short duration of abundance, and legally over allocated nature of surface water are common understandings. The ranching community has adapted to respond to drought by changing how cattle herds are managed.

Looking at the Harney Basin as a Social-Ecological System

There is a body of literature on the interplay between ecological and social factors that affect landscape change in agricultural communities. The growing understanding of the significance and importance of flood irrigated wetlands to both cattle ranchers and migratory birds¹ underscores the growing awareness of how ecological and economic values can be pursued and the significance to maintain social wellbeing in the community. The efforts to build understanding of current and historic management of wet meadow systems through the Harney Basin Wetlands Collaborative and looking at that information to inform management under changing conditions is a model of integrating avian biology, wetland plant ecology, irrigation management and wet meadow forage management.

The unique problem with groundwater

Groundwater is perceived by users through individual wells, their wells. The “hidden nature” of groundwater makes it much more difficult for users to get a broad picture of the status or nature of the resource. Surface water is clearly visible during flood and drought conditions. The nature and distribution of the resource is visible and understood. Not so with groundwater, the nature and distribution are described in lengthy and detailed reports. When there is one well owner with experiences different from the general distribution of groundwater levels estimated from multiple wells, the science is disputed and distrusted. While this does not discredit the science, it becomes a distraction to the general findings and evaluation that have gone in to evaluate conditions. The hidden nature and forced reliance on “outside experts” make the management of groundwater significantly more difficult for local groundwater users to examine or explore alternative arrangements of use. In the Harney basin case, it is compounded by using a model to develop management proposals. Few people fully understand the strengths and limits of the model and the use of a model to “determine” permissible total withdrawal only adds to suspicions of the output and possible outcomes. The fact that alternatives suggested by groundwater users are viewed through the model that is manipulated by the department only adds to the suspicion. I am not saying that the suspicion and mistrust is necessarily valid or accurate. In fact, the Department staff have been very patient in explaining the work they have done. It is, however, important to recognize that local impressions of the process is different from the dispassionate view of the science.

¹ Donnelly, JP, Kelsey Jensco, John S. Kimball, Johnnie N. Moore, David Ketchum, Daniel P. Collins, David E. Naugle.2024. Beneficial ‘inefficiencies’ of western ranching: Flood-irrigated hay production sustains wetland systems by mimicking historic hydrologic processes, Agriculture, Ecosystems & Environment, Volume 370,<https://doi.org/10.1016/j.agee.2024.109051>

Given the current scientific understanding of groundwater conditions (whether they are believed or not), local groundwater users can explore alternative ways to reduce use under existing law (ORS 537.745). While this approach has not been tried before, the relatively small community of groundwater users in the Harney Valley may be able to craft approaches that fit their circumstances. These proposals could be presented to the Commission before the Critical Groundwater Management Area and/or control measures are adopted through the contested case process. It will be important to evaluate the proposals against the statutory provisions, not the proposed PTW proposals that are meant for typically larger areas. The Commission needs to think about how these different statutory approaches can be used together. The voluntary approach can easily be lost if it is held to the regulatory proposal. Conversely, the voluntary approach must show real outcomes as measured by reduced pumpage and compliance with state law.

The Department has no tools to incentivize a voluntary approach which is likely why it has not been tried in more than 50 years. It would be helpful if the Commission were to signal that it was open to exploring voluntary groundwater reduction proposals before enacting regulatory curtailments.

Specific Issues with the Proposed 512 Rules

There are a number of issues that have resulted in public concern and frustration. I will list the ones that I am aware of and suggest how they may be addressed.

1. Groundwater Users do not have the Information They Need to Determine the Effect of the Rules on their Operations.

This is very important. Uncertainty about effects breeds distrust and unnecessary anxiety. The information needed is the actual water use (wet acres) and allocation of 2.5 acre-feet/acre calculations by priority date. To date the only information provided is an Excel spreadsheet provided during RAC 10 meeting that listed water rights by subarea by permitted amounts by priority date. That information is not what is being proposed to be the basis of regulation.

Without the information on the base for proposed curtailments, irrigators have no way to determine the potential impact on their operations. Until this information is provided and the public has the opportunity to review it, the rule public being affected is in the dark. At the very least, require the Department to provide the necessary information and the public the time to understand what the effects will be before further consideration of the rules.

2. The Disconnect between the Rules the Commission Adopted to ensure Water is Available before Issuing Permits and the Conditions of Some of the Subareas are at Odds in the Publics Eyes.

Previously, the Commission made a policy decision to adopt a definition of “Excessively Declining Water Levels” means any ongoing lowering of the water level in a ground water reservoir or part thereof which:

- a) Precludes, or could preclude, the perpetual use of the reservoir; or
- b) Represents an average downward trend of three or more feet per year for at least 10 years; or
- c) Represents, over a five year period, an average annual lowering of the water level by 1% or more of the initial saturated thickness as determined by observation or investigation in the affected area; ...”

The change was made to ensure permits were issued only when water was available to be appropriated under permit.

The division of the basin into subareas and suggesting that the entire basin is a single reservoir has led to outcomes where the provisions under which the Department would issue additional permits are being proposed for curtailment, in some, significant curtailment. This is particularly acute in three subareas, Lower Blitzen-Voltage, Silver Creek, and Silvies as defined by the Department. The “Groundwater Report for the Harney Basin Critical Groundwater Area” treats the basin as a whole and does not demonstrate that each subarea meets the definition of “excessively declined”.

The declines by subarea (Table 2) from OWRD data shows that these three subareas appear to fail the definition of excessively declining water level.

Table 2: Decline Conditions of three subareas (from Groundwater Level Trends in the Proposed Harney Basin Critical Groundwater Area- Summary Statistics by Subarea 2024)

Subarea	Average Decline Magnitude	Median Magnitude	Average Rate of Decline	Median Rate
Upper Silver Creek	-5.4	-3.5	-0.5	-0.4
Silvies	-4.9	-2.6	-0.3	-0.3
Lower Blitzen-Voltage	-4.9	-2.9	-0.3	-0.3

As pointed out earlier, if each subarea were treated as a reservoir, they would be eligible for further permitting and development because they do not meet the criteria for “excessively declined”. Only by the consideration of the entire basin as a single reservoir can the Commission make the argument that each subarea of the basin is excessively declined. Treating each subarea as a contributor to the overall problem of groundwater decline

requires all irrigators to be regulated not according to the conditions of their subarea but by the conditions of the basin as a whole. This approach only makes sense if the only lens you use is the regulatory lens. It could also be used as an incentive to encourage creative local solutions.

A different approach to setting PTW standards for areas that have not reached “excessively declined” conditions would be to challenge the irrigators to develop Voluntary Agreements under ORS 537.745 to ensure future conditions would not trigger “excessively declining water levels” in that subarea. The Department has documented conditions and calculated rates and magnitudes of decline for each subarea. If irrigators had information on “wet acres” they could develop reduction agreements among themselves to ensure that excessively declined conditions do not occur in the future and present those proposed agreements to the Commission with appropriate findings against the statutory standards.

The Commission should give time and encouragement for irrigators to develop Voluntary Agreements at least in the three subareas that do not have “excessively declined” conditions. This is only possible if the Department makes available the information on “Wet Acres” to be allocated as a basis for local conversations.

3. Impacts to Springs, Streams, and ET are Based on Model Outputs, Not Measured Ecological Impacts.

The information on impacts to springs, streams, and ET are all generic and analytical results from the groundwater model. The very limited information on ecological conditions developed by the Nature Conservancy only show that there could be future impacts and could not distinguish clear evidence of changes in phreatophyte vegetation due to changing groundwater levels. It is well understood that there is a relationship between groundwater levels and phreatophyte vegetation, however there is less information on thresholds for impact. Likewise the lack of information on spring flow makes it difficult to assign causal effect. There is a clear logical relationship between groundwater levels and springs, however there was insufficient information for the USGS to conclude that there was an impact. I am not saying that there are no impacts, I am saying that the Department has alleged impacts, not documented such impacts.

The Commission should require the Department to provide evidence of ecological harm before accepting only model results since the model is a physical model and does not include any biological information such as impact thresholds by species, tolerance for changes, adaptive range of variability, etc.

4. The Proposed 512 Rule in conjunction with the Recently Adopted Groundwater Allocation Rule makes the Harney Basin a “guinea pig” for a totally new way to Manage Groundwater in Oregon.

The proposal and its consequent impacts to the community and ecosystems of the Harney Basin are highly significant for all of Oregon. This new approach to structuring groundwater allocation by a complex of measures (Table 1) is an untried approach to managing groundwater. As with any new effort, there will be pushback because of the change.

This is a complex and unprecedented approach by the Department and Commission. Some elements were crafted to meet basin needs (wet acres, 2.5 a-f/a, 30 years, adaptive management). Some were created to maintain the highest relatively stable groundwater level (% curtailment). Some were crafted to address water law (curtailment by seniority).

While there are reasons for most of the provisions, some strike irrigators as difficult to understand. There is broad skepticism that the entire basin is a single reservoir. Irrigators know that different areas act functionally separately. They do not see how pumping in the Blitzen area could affect the Silvies or Silver Creek area.

The Commission needs to understand that the impacts to the entire community and the future of the economy of Harney County is proposed for significant impact. Any policy considerations to help the community adapt and provide time and assistance would be of value. The Commission needs to understand that the promise (permitting) of groundwater availability has led to the current problem and while it is understood that water is a public resource, the permitting agency has some responsibility for the massive overallocation.

5. The proposal is highly complex and technical

I would challenge each Commission member to explain in detail what they are proposing to adopt to their spouse, mother, children. I would bet dollars to doughnuts that would make your spouse, mother, children cross their eyes and ask “What you are on about?”.

Further imagine a Harney County farmer who is trying to make a living understand how this complex of actions will affect them.

- First, they do not have the base information (what is their starting point) which is the wet acres and allocation of 2.5a-ft/acre.
- If they were a part of the RAC and followed the reams of information provided they could look at the Excel spreadsheet provided at RAC 10 and see where they sit in relative priority in their subarea.

- They still do not know what others in that subarea have as a starting point so they cannot calculate their chance of being curtailed or when they would be scheduled to be curtailed.

While the RAC process has been exhaustive, it has not led to a better understanding of what the process and calculations are that will affect individual groundwater users. A major concern that is broadly common across the irrigation community is how will the proposed rules affect me? Given the current status of information from the Department, it remains impossible to answer the most relevant question of irrigators.

If the Commission wishes to have a fully informed regulated community of irrigators, you MUST have the Department provide the crucial information and provide the opportunity to explain how it will be used. The lack of information on what the starting point for curtailment is a critical flaw in going forward with any hope of understanding by the regulated community. Proceeding without that information or providing it late in the process without the ability of irrigators to incorporate that in their evaluation of future options makes the RAC process and Rules process an Agency driven train and undermines confidence in the decision proposed by the Department.

6. Adoption of 512 Rules alone will not help the community adapt

The Department has a Watermaster and Assistant Watermaster in Burns, the regional Office is in Baker City, nearly 3 hours away. The proposed rules are complex (see 5. above) and are a new approach to managing groundwater (see 4. above). Effective implementation will require local explanation, the ability to answer questions, and constant communication to prevent surprises. A local community-led implementation team that could help the community implement their Community-Based Integrated Water Resource Plan and coordinate implementation of the 512 rules could help communication between the community and the Department. The severe curtailment nature of the proposed rules will drive a wedge between Department officials and the community. It will take time and effort to facilitate the least disruptive implementation of any rules you adopt.

The Commission should add to any rules adopted, a commitment to support and fund a local implementation/communication effort.

August 11, 2025

Oregon Water Resources Commission
725 Summer Street NE, Suite A
Salem, OR 97301

RE: Comments on the Notice of Proposed Rulemaking for Division 512 Administrative Rules concerning the Harney Basin, Oregon

Dear Commissioners:

I have been involved in the Harney Basin place-based planning effort for a decade. I have provided grant application development and technical writing services to the planning effort. **These comments are my personal comments and should not be considered in any way as representing the collaborative that has been working for that time to address some of the water resource management issues in the basin.**

The attached comments are offered in response to the Notice of Proposed Rulemaking Chapter 690 Division 512 and subsequent community presentations and recent public hearings in the basin. I have two attached documents outlining my thoughts on the proposed rules. The first Attachment tries to put the proposal in the context of historical natural resource development in the Harney basin and the inherent complexity of what is being proposed. The second attachment includes my thoughts on an alternative approach that, in my mind, fits better with the historic manner that the Department and Commission have dealt with Critical Groundwater Management Areas.

As an overall comment, I would like to compliment the staff on adapting to and responding to an extremely difficult situation. The application of geological, hydrological, and modelling science has been stellar. The physical science and application of that science to develop a management approach that optimizes multiple considerations yet maintains the objective to meet the statutory requirement of “reasonably stable” groundwater conditions portends a new way to formulate policy proposals.

Given the complexity and interconnectedness of the proposed rules I would like to emphasize only two points from those included in the attached more fully developed comments.

1. The Department has not provided critical information that would allow groundwater users to judge their likely future. The critical information needed is the “beneficial use area” as determined by the Department listed by user by priority date. Only with this information can a groundwater user evaluate the likelihood of curtailment. The information listing **permitted** water use by priority date was provided in an Excel spreadsheet with RAC 10 meeting materials. Without knowing the true baseline of “beneficial use area”, it is impossible for irrigators to know how any proposed PTW may affect them.

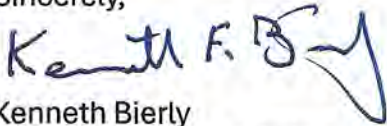
2. I believe that much of the frustration coming from the community is over the approach of declaring the entire GHVGAC area as a Critical Groundwater Management Area. There is frustration that only two of the subareas meet the definition of “excessively declining” or “declined excessively” yet all subareas are assigned a PTW.

I have proposed a different approach that creates two categories of subarea within the CGMA, subareas that meet the criteria at this time, and subareas that do not at this time. This would set up the situation where PTW would be applied where wells are “excessively declined” or “declining excessively”. The other subareas would be **encouraged** to develop Voluntary Agreements under ORS 537.745 with the goal of avoiding excessive decline or declined excessively conditions. This structure would keep open the potential to add PTW to subareas when they meet the decline criteria that triggers “excessive” conditions. This is a more organized way to address future conditions unlike the individual CGMA decisions in the Moro-Umatilla County area.

There is significant confusion over the complexity and interconnectedness of the rules in the local community. I am not sure what you can do to better inform the community, but it is clear from listening to public comments there is a broad range of understanding and misunderstandings of what is being proposed.

I urge you to consider these concerns before taking final action in December. If there is any interest in further discussion about the issues raised, I would be glad to engage in any conversations necessary to clarify my thought process.

Sincerely,

A handwritten signature in blue ink that reads "Kenneth F. Bierly". The signature is stylized with a large, sweeping flourish at the end.

Kenneth Bierly
2308 Ptarmigan St. NW
Salem, OR 97304

Thoughts on the Harney Basin 512 Rules and the broader issues they raise

Ken Bierly

The 2025 Groundwater Regulation Proposal for the Harney Basin

The Harney Basin 512 Rules use the legal tools available to the Oregon Water Resources Commission to address water resource impacts from overallocation and over pumping. The tools are presented are science-based and focus almost exclusively on the physics of groundwater. The groundwater system as portrayed in the Harney Basin Groundwater Model is a mass balance equation. Input (precipitation) minus output (pumping, ET, stream & spring discharge) equals change in storage. The legal tools the Department is asking the Commission to consider are a mix of policy, science of groundwater hydrology, and levels of legal authority. The complex program described in Table 1 has many interconnected parts, is based on a complex model that few people understand. All this complexity and technical evaluation makes it difficult for those impacted by proposed curtailments to understand. Failure to understand or become familiar with the interaction among the parts of the proposal has led to community frustration and skepticism about the science and intent of the Department.

Table 1: Harney Basin Groundwater Proposal (512 Rules)

Harney Basin Groundwater Regulation Complex		
Proposed Rule	Policy Choice	Consequences/Options
Reservoir Definition	Area for which a Critical Groundwater Management Area may be drawn	Department proposes the hydrological basin/ other options could be defined to only include areas meeting excessively declined conditions
Classification	Specifies the type of future use	Department proposes to only allow exempt uses
Serious Water Management Problem Area	Requires measurement of water use	Department is proposing specific measurement devices on each well. This is a regulatory tool to ensure individual wells are not pumped beyond permit authorization/ other measurements of overall water use are available
Critical Groundwater Management Area	Designation of area to provide curtailment authority of groundwater use	Department is proposing to identify the entire area of lowlands (previously adopted GHVGAC) as a CGMA
Goal for groundwater	Definition of how the basin will reach "relatively stable" groundwater conditions	Department has proposed a criteria of groundwater levels having 0 decline over 5 years as measured by median values of measured levels
Time to meet the Goal	Determination of the time to reach relative stable groundwater level	Department is proposing a 30 year time frame to meet "relatively stable" groundwater levels
Identification of Subareas	Identification of different response area within the basin	Department is proposing 7 subareas of the CGMA
Establishment of Permissible Total Withdrawal	Amount of groundwater allowed by rule for each subarea of the CGMA	Department is proposing total pumping limits based on modeled outcomes to meet the "relatively stable" conditions of the basin as a whole
Establish a Baseline of Historic Use	Modify individual Permits by "current Beneficial Use	Department is proposing to alter water rights to only the acreage irrigated during the 2020-2024 period
Establish a reduced Duty	Modify individual Permits to a lower duty	Department is proposing to modify Individual Permits to a duty of 2.5 acre-feet/acre
Adaptive Management	Review groundwater levels against modeled groundwater levels on a 6-year basis	Department has proposed specific adjustments for differences between modeled and measured groundwater levels that could adjust PTW
Monitoring	Permit compliance, SWAMP compliance, PTW compliance	Department has not addressed enforcement ability

The goal of these measures is to stabilize groundwater levels in thirty years' time. As the staff has recognized and the economic analysis has projected, these changes will have a significant impact on the social and economic fabric of the Harney basin community.

The History of Resources in the Harney Basin

An alternative way to look at the situation in the Harney Basin is to look at it more holistically as a social-ecological system. The development of groundwater did not occur in a vacuum or overnight. The Harney County community, as a frontier community has a history of resource exploitation and booms and crashes with influences from outside parties. After the termination of the Malheur Indian Reservation and "discovery" of the grazing opportunity by California cattle operations, the county became the focus of cattle rearing dominated by large ranches aided by the Swampland Acts of the U. S. Congress and the Oregon Legislature to transfer large areas of land to ranching interests.

Unregulated grazing led to overgrazing of many of the higher elevation areas by transient bands of sheep and large herds of cattle. At the turn of the 20th century the Malheur Bird Refuge was declared by Presidential Executive Order. In the 1920's with the construction of the Hines Mill, lumber production from Ponderosa pine forests of the Malheur National Forest became the primary non ranching employer in the County.

Agriculture in the basin has been dominated by cattle production and haying of spring flood irrigated wet meadows. The wet meadows are maintained by flood irrigation that provides a significant amount of the habitat for spring migratory birds that come from the south heading to the north on the Pacific Flyway. These private lands have for more than a century and a half have provided fodder for cattle and migratory bird habitat. Flood irrigated wet meadows along with spring flooding provides some two thirds of the recharge of groundwater to the lowlands of the Harney basin.

With the drought period of the 1930's two large ranches were sold to the U.S. Government to add to the Malheur Refuge. The purchase of the "P Ranch" from the Eastern Oregon Land Company and the "Double O Ranch" from the widow of William Hanley created the bulk of what is now the Malheur National Wildlife Refuge. The hydrology of the Blitzen River in the Wildlife Refuge was intensively modified by the Civilian Conservation Corps between 1935 until 1942.

The years following World War II were good for lumber production and Haines Mill was very productive for the next 30 years. The mill closed abruptly in 1980 and Harney County saw unemployment at 30%.

Agricultural crop production in Harney County has been limited by the growing season and lack of water. With groundwater development in the 1970's and the success of groundwater

irrigation, the opportunity for a limited suite of crops became available. Alfalfa dominates the groundwater irrigated cropland, primarily because of the tolerance to a highly variable temperature regime (frost can occur any month of the year).

The history of boom and bust is playing out with groundwater irrigated alfalfa. The projected loss of 35% of the economic activity of the community and loss of 160-320 jobs is not significantly different from 1980 to community residents.

Basin surface water irrigators have accommodated to massive over appropriation and highly variable water supplies.

When the surface water was adjudicated for the Silvies River in 1926, the State Engineer would not issue certificates because the court issued more rights than water available even in good years. Over time, ranchers dependent on surface water have developed adaptations to uncertain water supplies. Ranchers try to have enough grass hay to feed for a year or two. Most cattle production uses the lowland hay ground only in the fall and winter after the calves are sold. After a series of dry years, ranchers reduce their herd size to fit the available forage, both winter forage from flood irrigated hay meadows and range forage. The ranching community has a good knowledge of what they need to do to accommodate the highly variable annual precipitation conditions of the basin. Other accommodations such as the MNWR providing alternative range on flooded meadows when forest ranges burn as this recent year is another mechanism for adaptation to unpredictable conditions. These examples of adaptive capacity to drought is based on the specific conditions of the basin. There has been a strong effort to better understand the methods and actions that ranchers use to adapt to different water years and exploring how those management differences affect bird use. While there are still conflicts over water use, especially during low water years or late season when water availability is low. The County Court has engaged with OWRD to help build better understanding of water allocation and the limits that OWRD has to resolve conflicts. Additional tools have been called for to help provide more timely information on water availability during irrigation season by the integrated water planning collaborative. The surface water community knows the rules and while they may have disputes over access and how rules are administered, the recognition of the highly variable supply of water, the short duration of abundance, and legally over allocated nature of surface water are common understandings. The ranching community has adapted to respond to drought by changing how cattle herds are managed.

Looking at the Harney Basin as a Social-Ecological System

There is a body of literature on the interplay between ecological and social factors that affect landscape change in agricultural communities. The growing understanding of the significance and importance of flood irrigated wetlands to both cattle ranchers and migratory birds¹ underscores the growing awareness of how ecological and economic values can be pursued and the significance to maintain social wellbeing in the community. The efforts to build understanding of current and historic management of wet meadow systems through the Harney Basin Wetlands Collaborative and looking at that information to inform management under changing conditions is a model of integrating avian biology, wetland plant ecology, irrigation management and wet meadow forage management.

The unique problem with groundwater

Groundwater is perceived by users through individual wells, their wells. The “hidden nature” of groundwater makes it much more difficult for users to get a broad picture of the status or nature of the resource. Surface water is clearly visible during flood and drought conditions. The nature and distribution of the resource is visible and understood. Not so with groundwater, the nature and distribution are described in lengthy and detailed reports. When there is one well owner with experiences different from the general distribution of groundwater levels estimated from multiple wells, the science is disputed and distrusted. While this does not discredit the science, it becomes a distraction to the general findings and evaluation that have gone in to evaluate conditions. The hidden nature and forced reliance on “outside experts” make the management of groundwater significantly more difficult for local groundwater users to examine or explore alternative arrangements of use. In the Harney basin case, it is compounded by using a model to develop management proposals. Few people fully understand the strengths and limits of the model and the use of a model to “determine” permissible total withdrawal only adds to suspicions of the output and possible outcomes. The fact that alternatives suggested by groundwater users are viewed through the model that is manipulated by the department only adds to the suspicion. I am not saying that the suspicion and mistrust is necessarily valid or accurate. In fact, the Department staff have been very patient in explaining the work they have done. It is, however, important to recognize that local impressions of the process is different from the dispassionate view of the science.

¹ Donnelly, JP, Kelsey Jensco, John S. Kimball, Johnnie N. Moore, David Ketchum, Daniel P. Collins, David E. Naugle.2024. Beneficial ‘inefficiencies’ of western ranching: Flood-irrigated hay production sustains wetland systems by mimicking historic hydrologic processes, Agriculture, Ecosystems & Environment, Volume 370,<https://doi.org/10.1016/j.agee.2024.109051>

Given the current scientific understanding of groundwater conditions (whether they are believed or not), local groundwater users can explore alternative ways to reduce use under existing law (ORS 537.745). While this approach has not been tried before, the relatively small community of groundwater users in the Harney Valley may be able to craft approaches that fit their circumstances. These proposals could be presented to the Commission before the Critical Groundwater Management Area and/or control measures are adopted through the contested case process. It will be important to evaluate the proposals against the statutory provisions, not the proposed PTW proposals that are meant for typically larger areas. The Commission needs to think about how these different statutory approaches can be used together. The voluntary approach can easily be lost if it is held to the regulatory proposal. Conversely, the voluntary approach must show real outcomes as measured by reduced pumpage and compliance with state law.

The Department has no tools to incentivize a voluntary approach which is likely why it has not been tried in more than 50 years. It would be helpful if the Commission were to signal that it was open to exploring voluntary groundwater reduction proposals before enacting regulatory curtailments.

Specific Issues with the Proposed 512 Rules

There are a number of issues that have resulted in public concern and frustration. I will list the ones that I am aware of and suggest how they may be addressed.

1. Groundwater Users do not have the Information They Need to Determine the Effect of the Rules on their Operations.

This is very important. Uncertainty about effects breeds distrust and unnecessary anxiety. The information needed is the actual water use (wet acres) and allocation of 2.5 acre-feet/acre calculations by priority date. To date the only information provided is an Excel spreadsheet provided during RAC 10 meeting that listed water rights by subarea by permitted amounts by priority date. That information is not what is being proposed to be the basis of regulation.

Without the information on the base for proposed curtailments, irrigators have no way to determine the potential impact on their operations. Until this information is provided and the public has the opportunity to review it, the rule public being affected is in the dark. At the very least, require the Department to provide the necessary information and the public the time to understand what the effects will be before further consideration of the rules.

2. The Disconnect between the Rules the Commission Adopted to ensure Water is Available before Issuing Permits and the Conditions of Some of the Subareas are at Odds in the Publics Eyes.

Previously, the Commission made a policy decision to adopt a definition of “Excessively Declining Water Levels” means any ongoing lowering of the water level in a ground water reservoir or part thereof which:

- a) Precludes, or could preclude, the perpetual use of the reservoir; or
- b) Represents an average downward trend of three or more feet per year for at least 10 years; or
- c) Represents, over a five year period, an average annual lowering of the water level by 1% or more of the initial saturated thickness as determined by observation or investigation in the affected area; ...”

The change was made to ensure permits were issued only when water was available to be appropriated under permit.

The division of the basin into subareas and suggesting that the entire basin is a single reservoir has led to outcomes where the provisions under which the Department would issue additional permits are being proposed for curtailment, in some, significant curtailment. This is particularly acute in three subareas, Lower Blitzen-Voltage, Silver Creek, and Silvies as defined by the Department. The “Groundwater Report for the Harney Basin Critical Groundwater Area” treats the basin as a whole and does not demonstrate that each subarea meets the definition of “excessively declined”.

The declines by subarea (Table 2) from OWRD data shows that these three subareas appear to fail the definition of excessively declining water level.

Table 2: Decline Conditions of three subareas (from Groundwater Level Trends in the Proposed Harney Basin Critical Groundwater Area- Summary Statistics by Subarea 2024)

Subarea	Average Decline Magnitude	Median Magnitude	Average Rate of Decline	Median Rate
Upper Silver Creek	-5.4	-3.5	-0.5	-0.4
Silvies	-4.9	-2.6	-0.3	-0.3
Lower Blitzen-Voltage	-4.9	-2.9	-0.3	-0.3

As pointed out earlier, if each subarea were treated as a reservoir, they would be eligible for further permitting and development because they do not meet the criteria for “excessively declined”. Only by the consideration of the entire basin as a single reservoir can the Commission make the argument that each subarea of the basin is excessively declined. Treating each subarea as a contributor to the overall problem of groundwater decline

requires all irrigators to be regulated not according to the conditions of their subarea but by the conditions of the basin as a whole. This approach only makes sense if the only lens you use is the regulatory lens. It could also be used as an incentive to encourage creative local solutions.

A different approach to setting PTW standards for areas that have not reached “excessively declined” conditions would be to challenge the irrigators to develop Voluntary Agreements under ORS 537.745 to ensure future conditions would not trigger “excessively declining water levels” in that subarea. The Department has documented conditions and calculated rates and magnitudes of decline for each subarea. If irrigators had information on “wet acres” they could develop reduction agreements among themselves to ensure that excessively declined conditions do not occur in the future and present those proposed agreements to the Commission with appropriate findings against the statutory standards.

The Commission should give time and encouragement for irrigators to develop Voluntary Agreements at least in the three subareas that do not have “excessively declined” conditions. This is only possible if the Department makes available the information on “Wet Acres” to be allocated as a basis for local conversations.

3. Impacts to Springs, Streams, and ET are Based on Model Outputs, Not Measured Ecological Impacts.

The information on impacts to springs, streams, and ET are all generic and analytical results from the groundwater model. The very limited information on ecological conditions developed by the Nature Conservancy only show that there could be future impacts and could not distinguish clear evidence of changes in phreatophyte vegetation due to changing groundwater levels. It is well understood that there is a relationship between groundwater levels and phreatophyte vegetation, however there is less information on thresholds for impact. Likewise the lack of information on spring flow makes it difficult to assign causal effect. There is a clear logical relationship between groundwater levels and springs, however there was insufficient information for the USGS to conclude that there was an impact. I am not saying that there are no impacts, I am saying that the Department has alleged impacts, not documented such impacts.

The Commission should require the Department to provide evidence of ecological harm before accepting only model results since the model is a physical model and does not include any biological information such as impact thresholds by species, tolerance for changes, adaptive range of variability, etc.

4. The Proposed 512 Rule in conjunction with the Recently Adopted Groundwater Allocation Rule makes the Harney Basin a “guinea pig” for a totally new way to Manage Groundwater in Oregon.

The proposal and its consequent impacts to the community and ecosystems of the Harney Basin are highly significant for all of Oregon. This new approach to structuring groundwater allocation by a complex of measures (Table 1) is an untried approach to managing groundwater. As with any new effort, there will be pushback because of the change.

This is a complex and unprecedented approach by the Department and Commission. Some elements were crafted to meet basin needs (wet acres, 2.5 a-f/a, 30 years, adaptive management). Some were created to maintain the highest relatively stable groundwater level (% curtailment). Some were crafted to address water law (curtailment by seniority).

While there are reasons for most of the provisions, some strike irrigators as difficult to understand. There is broad skepticism that the entire basin is a single reservoir. Irrigators know that different areas act functionally separately. They do not see how pumping in the Blitzen area could affect the Silvies or Silver Creek area.

The Commission needs to understand that the impacts to the entire community and the future of the economy of Harney County is proposed for significant impact. Any policy considerations to help the community adapt and provide time and assistance would be of value. The Commission needs to understand that the promise (permitting) of groundwater availability has led to the current problem and while it is understood that water is a public resource, the permitting agency has some responsibility for the massive overallocation.

5. The proposal is highly complex and technical

I would challenge each Commission member to explain in detail what they are proposing to adopt to their spouse, mother, children. I would bet dollars to doughnuts that would make your spouse, mother, children cross their eyes and ask “What you are on about?”.

Further imagine a Harney County farmer who is trying to make a living understand how this complex of actions will affect them.

- First, they do not have the base information (what is their starting point) which is the wet acres and allocation of 2.5a-ft/acre.
- If they were a part of the RAC and followed the reams of information provided they could look at the Excel spreadsheet provided at RAC 10 and see where they sit in relative priority in their subarea.

- They still do not know what others in that subarea have as a starting point so they cannot calculate their chance of being curtailed or when they would be scheduled to be curtailed.

While the RAC process has been exhaustive, it has not led to a better understanding of what the process and calculations are that will affect individual groundwater users. A major concern that is broadly common across the irrigation community is how will the proposed rules affect me? Given the current status of information from the Department, it remains impossible to answer the most relevant question of irrigators.

If the Commission wishes to have a fully informed regulated community of irrigators, you MUST have the Department provide the crucial information and provide the opportunity to explain how it will be used. The lack of information on what the starting point for curtailment is a critical flaw in going forward with any hope of understanding by the regulated community. Proceeding without that information or providing it late in the process without the ability of irrigators to incorporate that in their evaluation of future options makes the RAC process and Rules process an Agency driven train and undermines confidence in the decision proposed by the Department.

6. Adoption of 512 Rules alone will not help the community adapt

The Department has a Watermaster and Assistant Watermaster in Burns, the regional Office is in Baker City, nearly 3 hours away. The proposed rules are complex (see 5. above) and are a new approach to managing groundwater (see 4. above). Effective implementation will require local explanation, the ability to answer questions, and constant communication to prevent surprises. A local community-led implementation team that could help the community implement their Community-Based Integrated Water Resource Plan and coordinate implementation of the 512 rules could help communication between the community and the Department. The severe curtailment nature of the proposed rules will drive a wedge between Department officials and the community. It will take time and effort to facilitate the least disruptive implementation of any rules you adopt.

The Commission should add to any rules adopted, a commitment to support and fund a local implementation/communication effort.

Thoughts on the Harney Basin 512 Rules

And the issue of CGMA area designation

Ken Bierly

Designation of Critical Groundwater Management Areas

There has been a complex history of Critical Groundwater Management Area (CGMA) designations. Nearly all previous CGMA designations have been identified by specific wells showing what was determined to be “excessively declined” at the time of designation (see Attachment).

How the Harney Basin CGMA Differs from Previous Applications

The boundary of the Harney Basin CGMA is the area previously designated as the Greater Harney Valley Groundwater Area of Concern (GHVGAC) that included nearly all the groundwater irrigation wells in the Harney Basin. The original purpose of the boundary as adopted in 2016 was for the purpose of classification to limit future permitting. The rules at that time closed the basin for most new permit applications except for exempt uses and development of previously issued permits.

Not all areas of the GHVGAC meet the criteria for “excessively declined”. Of the fifteen subareas identified by the Department only two meet the criteria for wells meeting the definition of “excessively declining” (page 11) and “declined excessively” (page 9) (Boschmann, 2024a). Of the fifteen subareas only two (Average rate and Median Rate) exceed 3 feet/year of decline while nine of the subareas have at least individual wells that exceed that value (Minimum Rate). It is clear that both pumping and geology play a role in affecting the groundwater level conditions locally and basin wide.

If CGMA were to be applied as done previously in other areas of the state, Weaver Springs and North Harney subareas would be designated as CGMA with additions if other subareas meet the conditions of “excessively declined”

Why it Might be Useful to Consider the Entire GHVGAC as a CGMA

The RAC or some members of the RAC have suggested that using the authority provided by a CGMA designation to alter all the permits in the area to only cover the acreage of “beneficial use” and limit each permit to 2.5 acre-feet/acre. This would provide a more rational baseline for reductions since it would be based on a more reasonable estimation of actual use. The conditions would be subject to oversight through metering as

recommended by the Department in suggesting the basin be identified as a Serious Water Management Problem Area requiring metering of all wells.

This approach will result in more irrigators getting water when curtailments occur yet make progress on relatively stable groundwater conditions. What it does not mean is that all subareas of the GHVGAC are “excessively declining”, it is a tool for managing areas of current significant decline. The concern expressed in many of the public meetings and hearings in the basin was that the designation of Permissible Total Withdrawal (PTW) for areas that do not meet the numerical criteria for “excessively declined” is inappropriate.

I suggest that there is a way to use the CGMA designation in a more creative way.

How a More Creative CGMA might be Constructed

Once the CGMA boundary is adopted, there could be two classes of subareas (those that include wells that have “excessively declined” and/or “declined excessively”, and those that are not at this time). Permissible Total Withdrawal (PTW) would be assigned to only the subareas that meet the criteria for “excessively declined”. The other subareas would be **encouraged** to develop Voluntary Agreements to prevent developing “excessively declined” conditions. The clear language of ORS 537.745 includes “...the Water Resources Commission **may encourage, promote** and recognize voluntary agreements among ground water users..” (emphasis added). The consideration of Voluntary Agreements is one of the strategies that is a part of the Harney Basin Community-Based Integrated Water Resource Plan. This approach by the commission would provide the community both a clear signal of the support for the approach and the minimal criteria necessary for moving forward (preventing “excessive decline”).

This scenario could be used to implement scenario B as provided in RAC 10 where Weaver Springs was given a PTW of 54% of 2018 pumping implemented in 18% increments, Northeast/Crane given a PTW of 30% of 2018 pumping implemented in 10% reductions. Along with those reductions and reductions in Silver Creek subarea of 9%, the modeling shows this scenario will meet the goal of relatively stable groundwater levels in 30 years.

Adjusting the PTW upward will provide for more groundwater for other uses (springs, streams, ET, exempt wells). The proposal would allow for adding PTW to subareas that meet “excessively declined” or “declined excessively” conditions in the future if Voluntary Agreements are not developed and successfully implemented.

An Alternative Proposal for Harney Basin Groundwater Regulation

An alternative approach is outlined in the following table (Table 1). It identifies a proposed action, rationale for the action and consequence of the action. The proposed approach would require language changes in the draft administrative rules at OAR 690-512-0041. The following language is illustrative of an approach that would fit the proposed alternative. The language is not in track changes or to be considered final. I simply am trying to illustrate how an alternative management approach could be structured in the draft rules.

For Illustrative purposes consider the following at OAR 690-512-0041 as both additional and substitute language.

“(7) The Harney Basin Critical Groundwater area defined in OAR 690-512-0020(7) shall be divided into two categories for the purpose of management. One category shall be the subarea(s) that currently meet the numeric criteria as “declined excessively” as defined at OAR 690-008-0001(5). The other category shall be the subareas that do not at the time of adoption meet the criteria for “declined excessively”.

“(8) Seven subareas of the Harney Basin Critical Groundwater area are distinguished for management purposes as shown in Exhibit 6.”

“(9)” The Two subareas that currently meet the criteria as “declined excessively” are Weaver Springs shown in Exhibit 13, and Northeast-Crane subarea shown in Exhibit 9.”

“(10) The five subareas that currently do not meet the criteria as “declined excessively” are Dog Mountain subarea shown in Exhibit 7, Silvies subarea shown in Exhibit 11, Lower Blitzen-Voltage subarea shown in Exhibit 8, Silver Creek subarea shown in Exhibit 10, and Upper Blitzen subarea shown in Exhibit 12.”

690-512-0050

Management criteria for each subarea within the Harney Basin Critical Groundwater Area are;

(a) for the subareas that do not currently meet the criteria for “declined excessively” shall be managed to avoid meeting the criteria. The emphasis for management will be cooperative development of Voluntary Agreements under ORS 537.745, and

(b) for Weaver Springs subarea the permissible total withdrawal shall be X, and for Northeast-Crane subarea the permissible total withdrawal shall be Y.

Table 1: Alternative Approach to Critical Groundwater Management Area Implementation in the Harney Basin

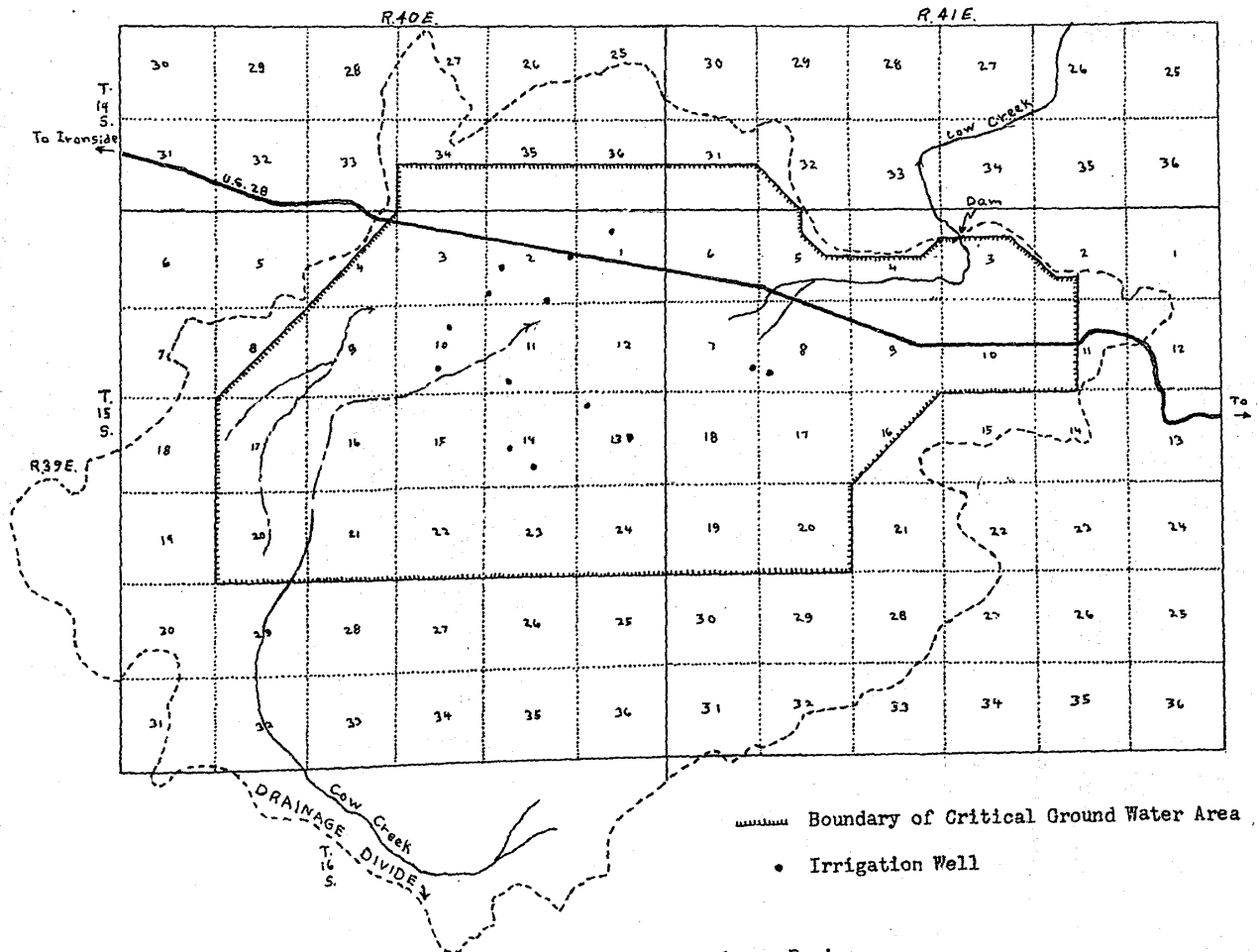
Alternative Harney Basin Groundwater Regulatory Scheme					
Control Measure	Authority	Purpose	Desired Outcome	Potential Responses	Consistency with OWRD Proposal
Critical Groundwater Management Area (CGMA)	ORS 537.73 OAR 690-010-0120	ORS 536.220 (a) The maintenance of the present level of the economic and general welfare of the people of this state and the future growth and development of this state for the increased economic and general welfare of the people thereof are in large part dependent upon a proper utilization and control of the water resources of this state, and such use and control is therefore a matter of greatest concern and highest priority. (b), and (c).	Ensure current and future use of water resources for the general welfare	Concerns about "excessively declined" conditions, Concerns about "takings", concerns about "prior appropriation doctrine", Concerns about community and individual irrigator impacts, concern about impacts to ecosystems	Same
Permit Reductions within the CGMA	ORS 537.735	Reduce all permits to area of "beneficial Use" and a duty of 2.5 acre-feet/acre	Allow more users to have water under a curtailment scenario	"Taking away my water right", reducing the advantage of senior water right holders	Same
Measurement Requirement	OAR 690-085-0020	Accurately measure all irrigation water pumped from the basin	better information on groundwater use, ability to determine permit compliance	too expensive, other ways to determine use	Same
Subarea Categories in CGMA	OAR 690-010-0130(3)(c)	Distinguish subareas that meet the criteria for "excessively declined" from those subareas that do not	Distinguish differences in the response of groundwater use and geology in the basin	Continuing controversy over boundaries, reduced concern about "overbroad designation of CGMA	New
Encourage Voluntary Agreements in subareas that do not meet the criteria of "excessively declined"	ORS 537.745	Encourage agreements to avoid getting to "excessively declined conditions"	Tie a voluntary approach to preventing declines that meet the "excessive" standard	?	New
Establish Permissible Total Withdrawal (PTW) for those subareas that are "excessively declining"	OAR 690-010-0160(2)(b)	Focus regulatory approach to most serious areas (Weaver Springs, Crane/North Harney)	Use regulatory authority to address acute issues	Concern from regulated users	New
Monitoring and Adaptive Management	OAR 690-010-160 (4) and (5)	Focus monitoring on groundwater levels to triggers for determining "excessively declining" for those subareas that do not meet the criteria, focus monitoring of areas of PTW against modeled compliance as proposed	Focus monitoring and adaptive management on desired outcomes and recognize different outcomes from different subareas	Additional complexity, I will have different requirements from my neighbor	New
Classification	ORS 536.340	Close the basin from further new permitting	Don't make the problem worse	?	Same

Boschmann, Darrick E. 2024a. Groundwater Report for the Harney Basin Critical Groundwater Area Rulemaking. June 17, 2024. Oregon Water Resources Department. 19 p.

Boschmann, Darrick E. 2024b. Groundwater Level Trends in the Proposed Harney Basin Critical Groundwater Area – Summary Statistics by Subarea. Information report to the Division 512 Rules Advisory Committee. Updated July 23, 2024. Oregon Water Resources Department. 20 p.

Previous Critical Groundwater Management Area Designations

The earliest designation is the Cow Valley. As the map of the Cow Valley CGMA (1959) shows (Figure 1) the designated area delineated as a portion of the area defined by legal boundaries not geological or topographic.



Prepared by
State Engineer

Exhibit 3

Figure 1: Map of Cow Valley CGMA

In a similar manner the Dalles CGMA (1959) is defined by declining wells in an area designated by legal boundaries not the entire area (Figure 2). As the map shows, the boundary is a series of straight lines

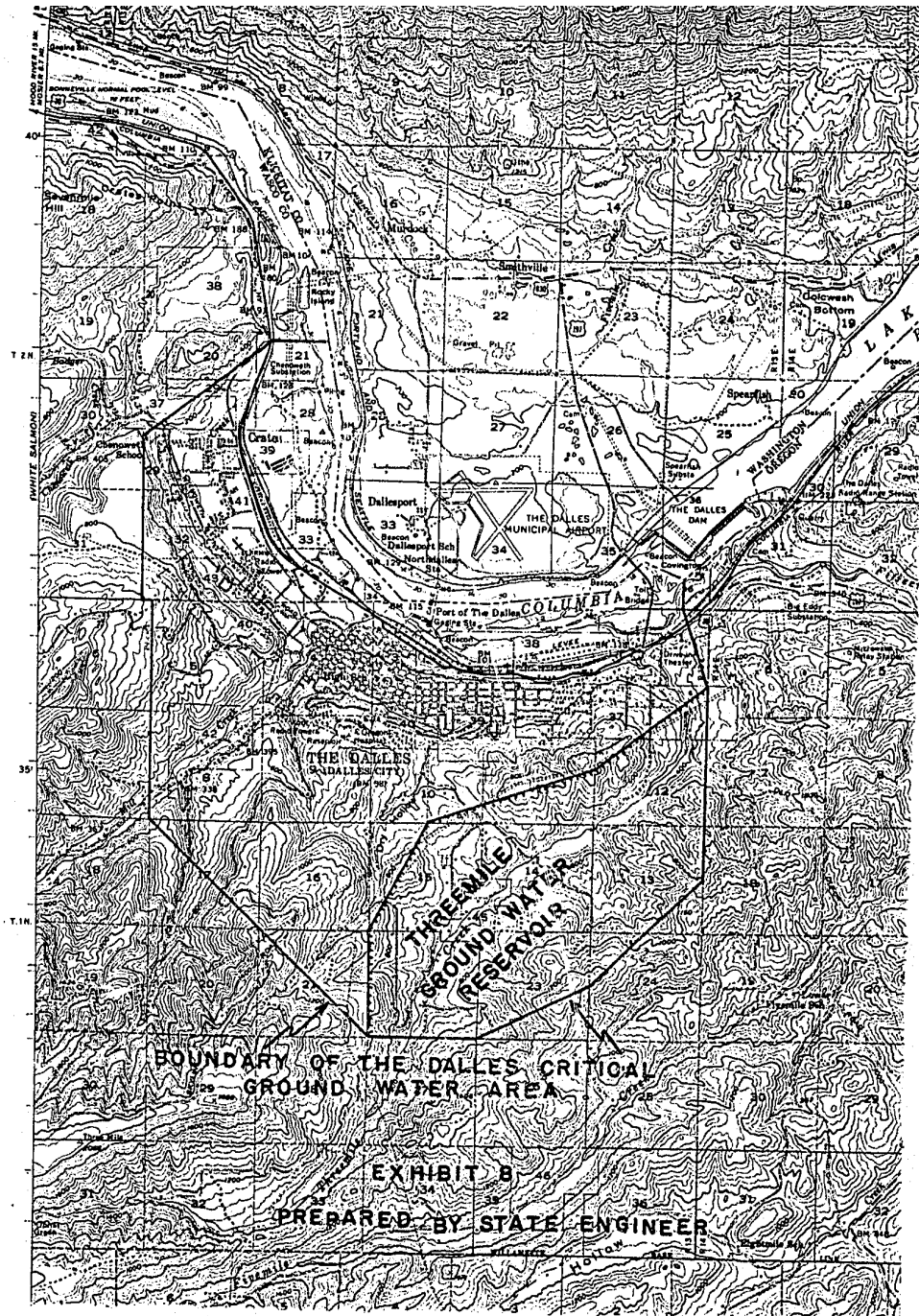


Figure 2: The Dalles CGMA

The Cooper-Bull Mountain CGMA (1974) includes the upland areas of the watershed that have declining wells. Again the boundary is defined by a polygon that includes the wells that meet the excessively declined criteria at the time (Figure 3).

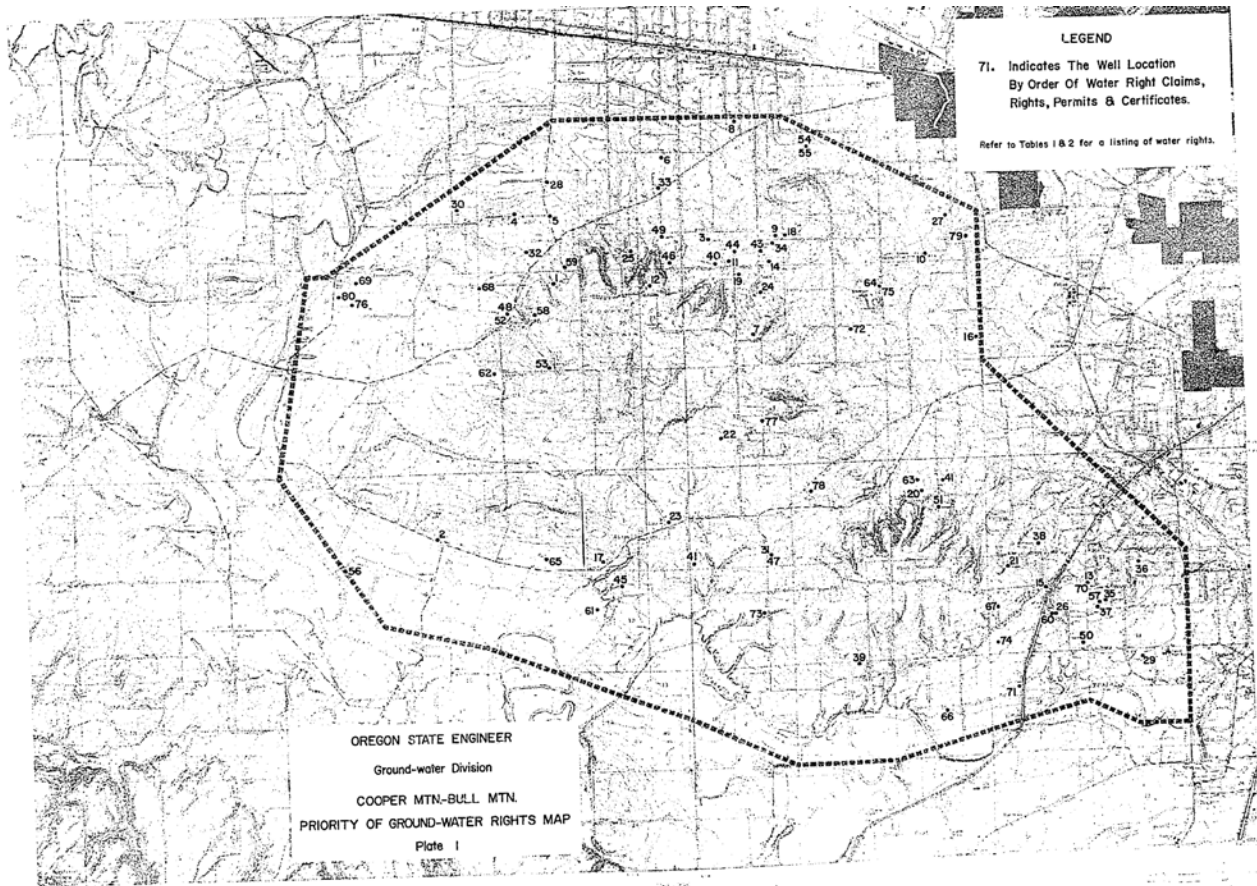


Figure 3: Cooper-Bull Mountain CGMA

The Ordinance Basalt CGMA (1976) only includes the wells that meet the definition of excessively declined at the time of designation (Figure 4). The boundary is crafted to include the areas that have declining wells.

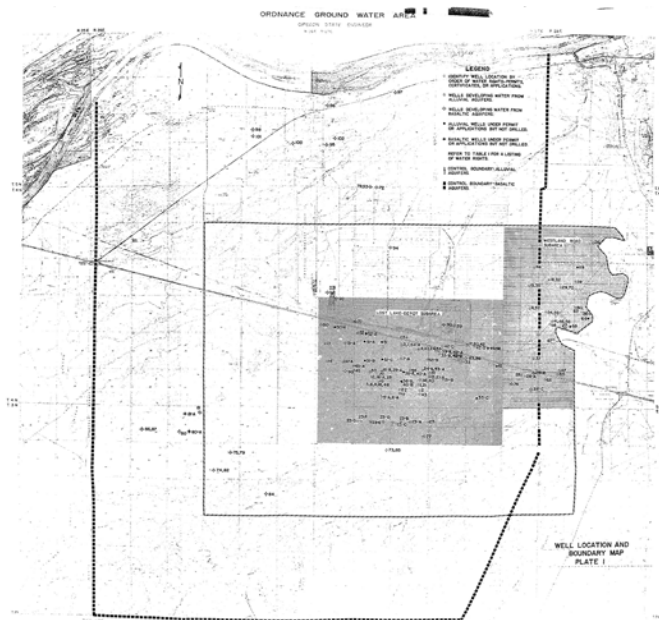


Figure 4: Ordinance Basalt CGMA

Ordinance Gravel CGMA (1976) like the Ordinance Basalt identified an additional area using similar criteria as the Ordinance Basalt. The boundary includes wells showing excessively declined conditions (Figure 5).

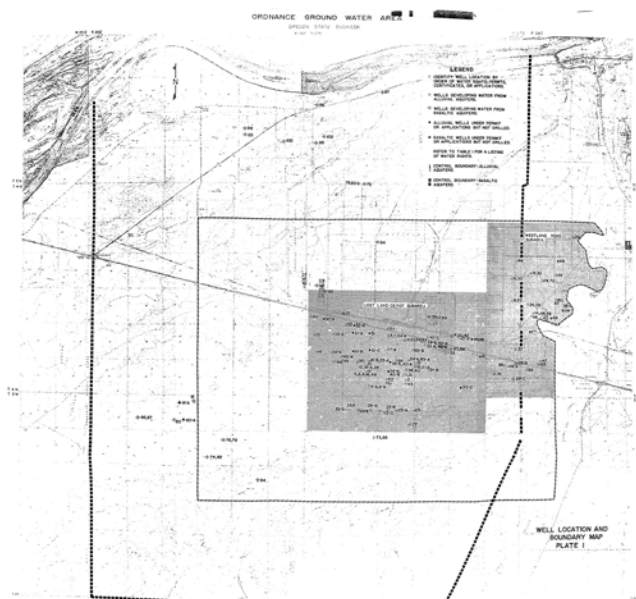


Figure 5: Ordinance Gravel CGMA

Butter Creek CGMA (1986) abuts the Ordinance Basalt and Ordinance Gravel CGMAs. It is an area that also is restricted to wells that meet the excessively declined conditions.

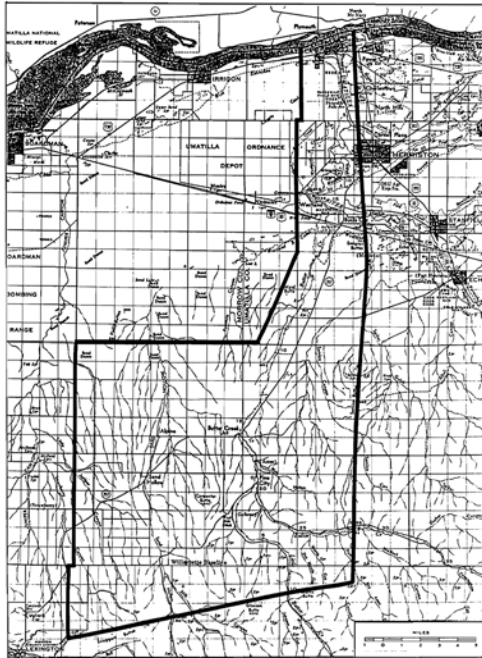


Figure 6: Butter Creek CGMA

Stage Gulch CGMA (1991) was the last CGMA (Figure 7) designated under the old rules. It also abuts the Ordinance and Butter Creek CGMAs. And includes excessively declined wells. It appears that new CGMA areas were identified as decline conditions warranted over time.

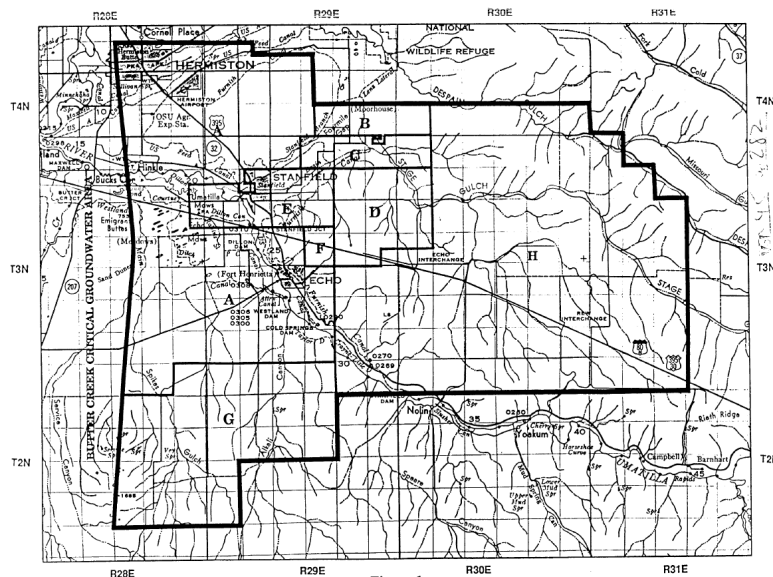


Figure 7: Stage Gulch CGMA

Mosier Groundwater Withdrawal Area (1988) while not a CGMA was designated only in areas where wells are showing excessively declined conditions (Figure 8).

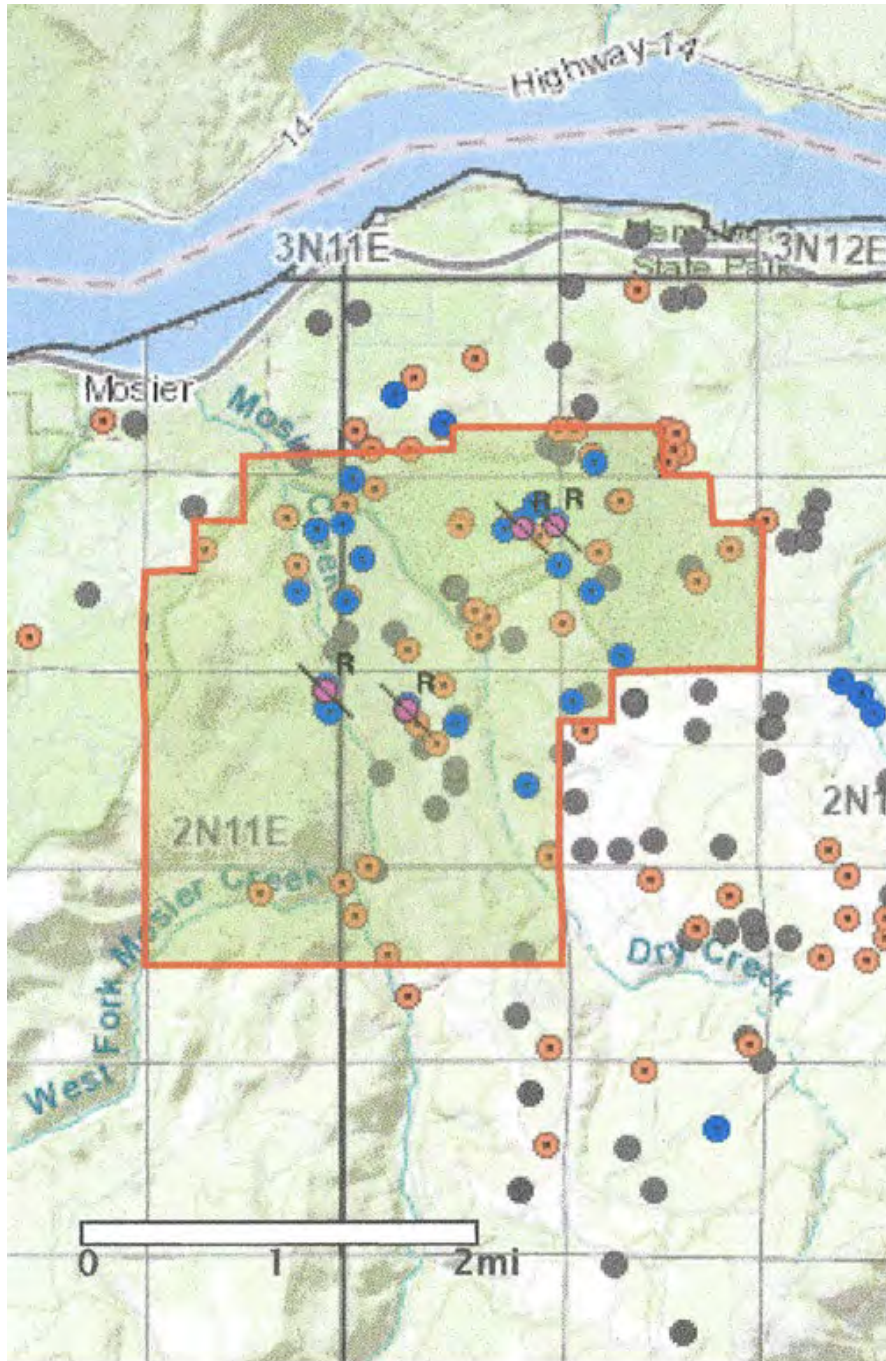


Figure 8: Mosier Groundwater Withdrawal Area

Victor Point Groundwater Withdrawal Area (2001) is similarly designated where groundwater levels and declines met the “excessively declined” conditions.

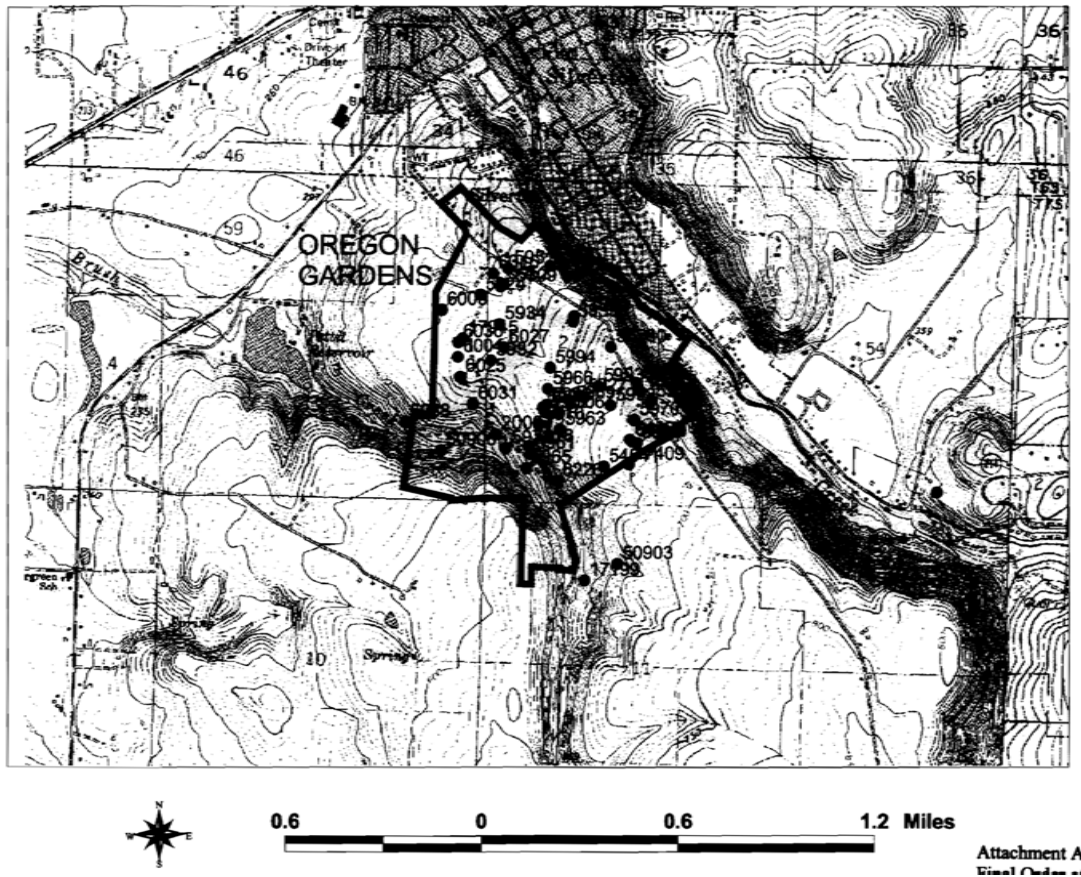
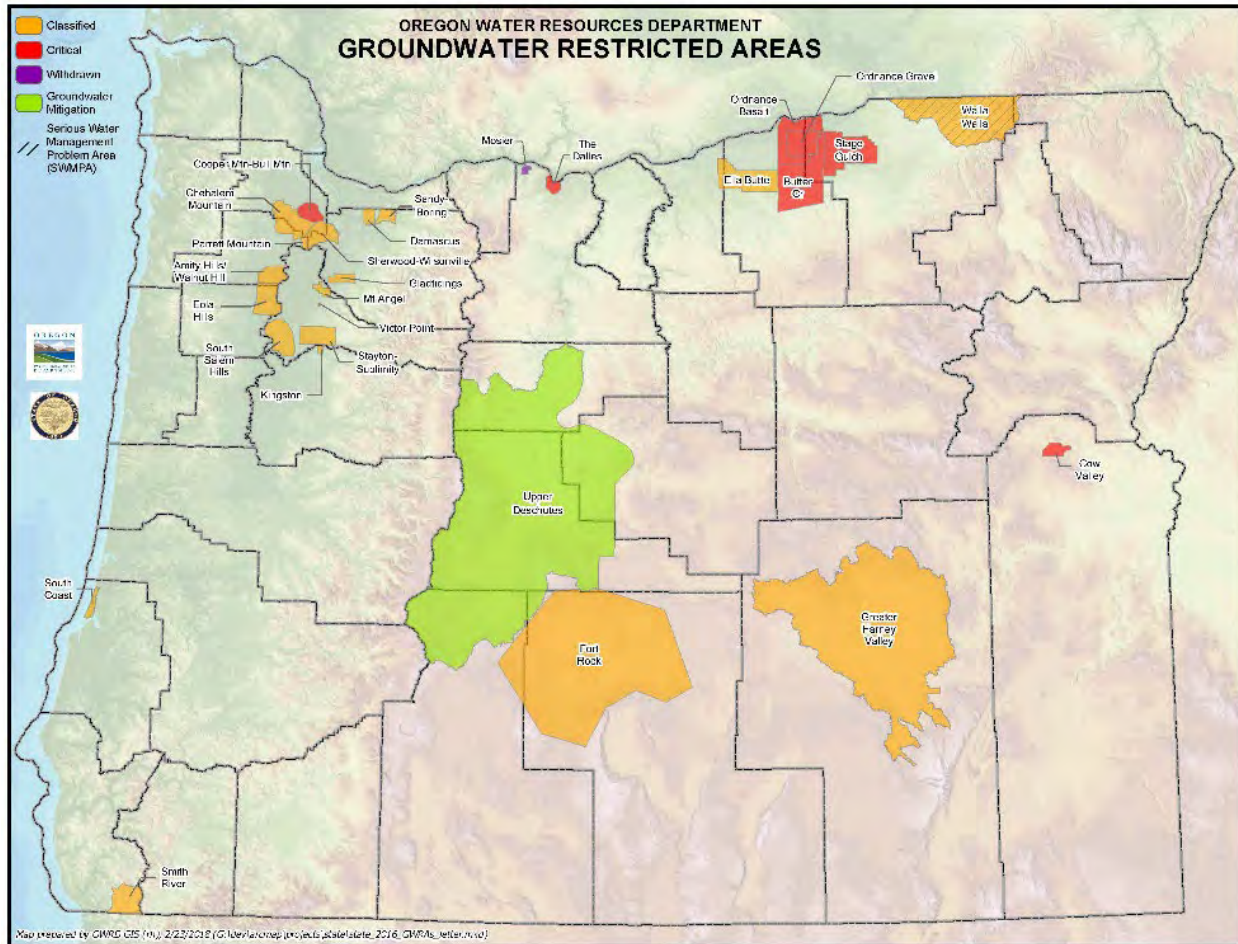


Figure 9: Victor Point Groundwater Withdrawal Area

The History of OWRD and OWRC designation of groundwater curtailment actions have historically focused on specific areas where the criteria for “excessively declined” conditions are documented.

The statewide map shows the groundwater management areas in context. The cluster of designations in the northeast (Umatilla and Moro Counties) show how in the past designations were made as declined excessive conditions occurred. A similar approach has been taken in the Columbia River basalts in the Willamette Valley hills where isolated areas have been designated rather than the entire area of Columbia River basalts.



HARTT Laura A * WRD

From: Kenneth Homolka <ken.homolka@gmail.com>
Sent: Saturday, August 9, 2025 8:00 PM
To: WRD_DL_rule-coordinator
Subject: Please Adopt Strong Rules to Stabilize Groundwater Levels in the Harney Basin

You don't often get email from ken.homolka@gmail.com. [Learn why this is important](#)

Dear Kelly Mainz,

Dear Oregon Water Resources Department,

I am writing about the rules the Oregon Water Resources Department (OWRD) recently proposed to address groundwater declines in the Harney Basin.

I support stabilizing groundwater levels in the Harney Basin, which would provide the basin with a more sustainable future and help prevent additional impacts to groundwater dependent ecosystems such as springs, streams, wetlands, and native vegetation. It would also reduce the number of existing domestic wells that would be dried up due to irrigation pumping.

I offer the following additional comments:

1. I place a high value on the springs, streams, and other groundwater dependent ecosystems in the Harney Basin, and all of the fish, wildlife, and plants that rely on these ecosystems.
2. These groundwater dependent ecosystems have already been significantly degraded from the over-pumping of groundwater. Please ensure that these systems are protected in the Division 512 rules for the Harney Basin.
3. I support the requirement in the Proposed Rules for water use measurement and reporting on all non-exempt groundwater rights in the basin.
4. OWRD should not adopt rules that would dry up additional existing domestic wells, especially when it has no viable program in place to help these residents who will lose their drinking water.
5. Please consider strengthening the Proposed Rules by adopting a tighter schedule for imposing the lower pumping amounts ("Permissible Total Withdrawals"). I encourage a shorter timeline than the proposed 30 years to achieve stable groundwater levels in light of the major declines that have already occurred, and the significant impacts to groundwater dependent ecosystems and domestic wells that this has already caused.

Thank you for your kind attention and consideration of my comments.

Sincerely,
Kenneth Homolka
22835 Jennie Rd
Lyons, OR 97358

To: Kelly Meinz, Rules Coordinator Oregon Water Resources Department

From: Oregon Ground Water Association

RE: Harney Basin (Division 512) CGWA Rulemaking

Position: Oppose proposed rules

8/13/25



2755 Commercial St. SE
STE 101-333
Salem, OR 97302

The mission of the Oregon Ground Water Association is to promote sustainable groundwater development and management for maximum beneficial use without waste or contamination. The process of Critical Groundwater Area Rulemaking in the Harney Basin has not considered key evidence to reach an effective solution. The rules as proposed would not provide a comprehensive and balanced approach and will fall short on results.

Our Association believes that there are additional factors to consider for groundwater level declines other than just overallocation and overuse. Long term climate fluctuations should be considered as, over time, both higher and lower recharge rates do exist. The geology in this basin is complex with 3 - 4 confining layers with both sedimentary deposits and volcanic layers. The recharge timeline in the lowlands is much older and slower than the uplands. We believe commingling of aquifers by some large producing improperly constructed irrigation wells has led to the aquifer declines rather than from over appropriation. This is evident in the lowlands and particularly Weaver Springs and Dog Mountain.

The rulemaking and legislative process in Oregon the last few years has been very biased. Oregon Water Resources Department and other agencies have partnered with groups friendly to an agenda that focused on a predetermined outcome. There is a real concern about our ability to balance resource protection of water with beneficial use (without waste), landowner rights, and economic activity in Oregon. Farmers in Oregon are vital to our health and well-being. This process should not put all the burden and blame on them. Oregon is becoming a difficult place to produce economic activity and conduct business.

Thank you for your consideration.

Kevin Gill

Government Affairs Representative

Oregon Ground Water Association

MEINZ Kelly A * WRD

From: Kirby Isaac <kirbyisaac1977@gmail.com>
Sent: Wednesday, August 13, 2025 2:58 PM
To: MEINZ Kelly A * WRD
Subject: Comments on water usage in Northeast crane district

Dear sir ,

I am writing to you today because of our interest in the current water situation. I and my family are local farmers and ranchers who are depending upon water rights for our livelihood. I am raising hay ,cattle , and commodities to take a living from the land .

I understand the necessity of corrective measures to help stabilize the dropping water levels . As Christians my family and I are not interested in pursuing any type of legal action . I am thankful for the opportunity to raise my family in Oregon, and I would like to leave my thought along with the voices of our community.

My concern is that the water rights curtailment, is only implemented to the extent of remedying our local groundwater problems . I feel the basis of the management systems need to be based upon a reduction of water usage and prior appropriate.

I am open to the possibility of a reduction of my water usage to remedy the problem as opposed to the curtailment of my water rights .

I realize there are other options that can make a large difference as well. The LESA (Low Energy Spray Application) packages operate well at lower pressures. Practices such as keeping the soil covered and reducing the usage of big end guns can all help with evaporation.

Another thing I would appreciate you taking into consideration is splitting the North End of the Basin from the Crane area district. I feel the Crane district is in worse water depletion than the North End of the Basin . I feel we should focus on water rights that our out of compliance rather than give everyone the same the treatment . I am doing my best to conserve my water usage even now .

Thankyou for your time and consideration. The loss of our water rights would be devastating to our family operation .

Sincerely, The Kirby Isaac Family - Broken Box Ranch

From: Larry Callister <lchukar@gmail.com>
Sent: Sunday, August 10, 2025 10:05 PM
To: WRD_DL_rule-coordinator
Subject: Please Adopt Strong Rules to Stabilize Groundwater Levels in the Harney Basin

You don't often get email from lchukar@gmail.com. [Learn why this is important](#)

Dear Kelly Mainz,

Dear Oregon Water Resources Department,

I am concerned about the rules the Oregon Water Resources Department (OWRD) recently proposed to address groundwater declines in the Harney Basin.

I support stabilizing groundwater levels in the Harney Basin, which would provide the basin with a more sustainable future and help prevent additional impacts to groundwater dependent ecosystems such as springs, streams, wetlands, and native vegetation. It would also reduce the number of existing domestic wells that would be dried up due to irrigation pumping.

I offer the following additional comments:

1. I place a high value on the springs, streams, and other groundwater dependent ecosystems in the Harney Basin, and all of the fish, wildlife, and plants that rely on these ecosystems.
2. These groundwater dependent ecosystems have already been significantly degraded from the over-pumping of groundwater. Please ensure that these systems are protected in the Division 512 rules for the Harney Basin.
3. I support the requirement in the Proposed Rules for water use measurement and reporting on all non-exempt groundwater rights in the basin.
4. OWRD should not adopt rules that would dry up additional existing domestic wells, especially when it has no viable program in place to help these residents who will lose their drinking water.
5. Please consider strengthening the Proposed Rules by adopting a tighter schedule for imposing the lower pumping amounts ("Permissible Total Withdrawals"). I encourage a shorter timeline than the proposed 30 years to achieve stable groundwater levels in light of the major declines that have already occurred, and the significant impacts to groundwater dependent ecosystems and domestic wells that this has already caused.

Thank you for your kind attention and consideration of my comments.

Sincerely,
Larry Callister
3332 SE Aldser Street
Portland, OR 97214

PROPOSED HARNEY BASIN GROUNDWATER POLICIES – WRITTEN COMMENT FORM

This written comment form can be used to help you formulate effective written public comments for the Division 512 Harney Basin Program Rules being proposed by the Oregon Water Resources Department, which will be used to manage and regulate groundwater use in the Harney Basin. The questions provided in this form address various aspects of the rules. Each question includes space to write your answer and some questions include options for you to consider. Reach out to Harmony Burright if you want help talking through or recording your comments (541-846-8863 / harmony@saltandfresh.solutions).

Public comments and related materials must be received no later than **August 7, 2025 at 5pm:**

By Email: WRD_DL_rule-coordinator@water.oregon.gov

By Mail: Kelly Mainz – Rulemaking Coordinator
Oregon Water Resources Department
725 Summer St. N.E. Suite A
Salem, OR 97301-1271

Your Name (required): Larry Otley
Your Email (optional): _____
Your Phone (optional): _____
Note: All personally identifiable information may be made public. Please do not include this information if you do not want it included in the public record. A first name and last initial must be included to be considered.

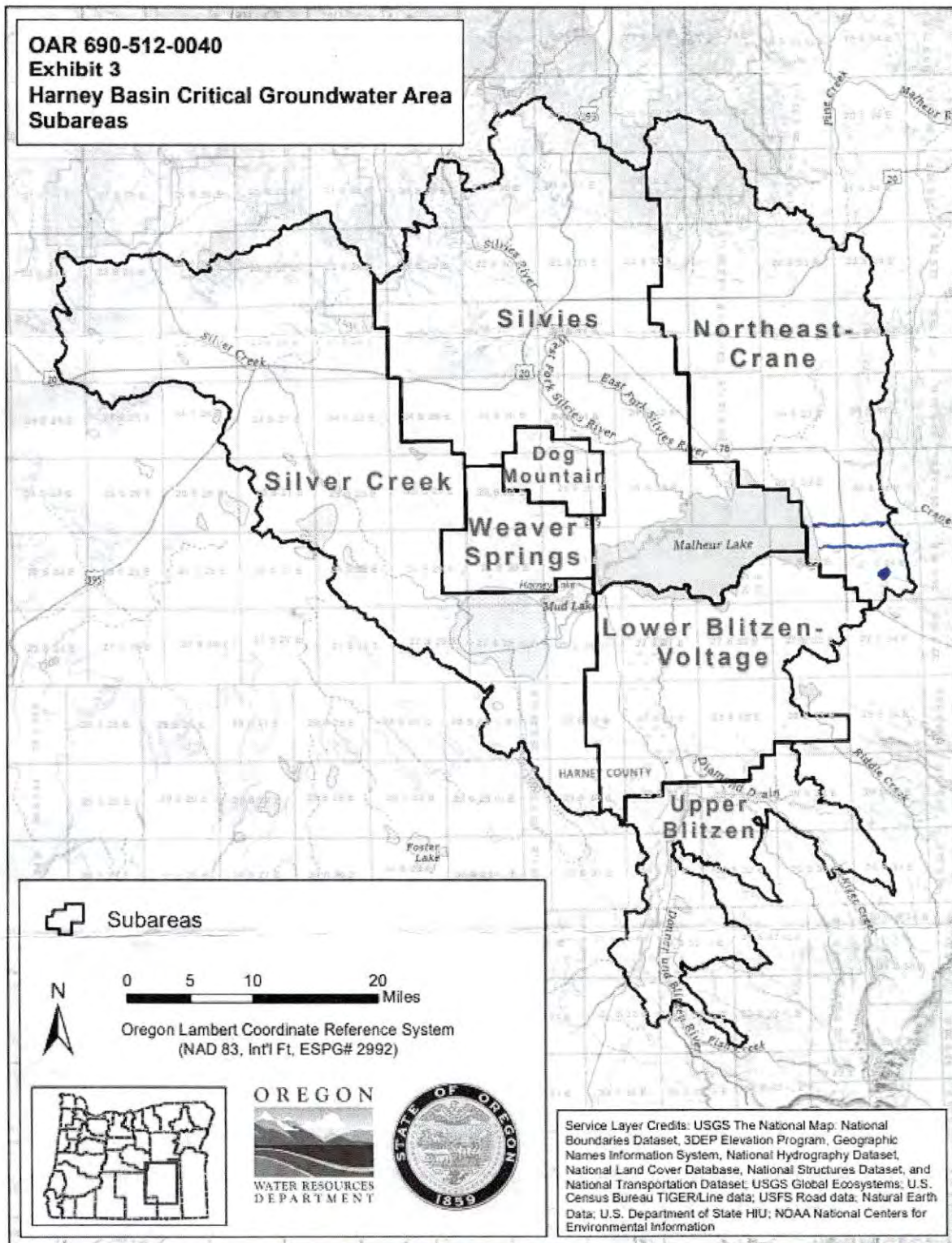
Please check all interests that apply to you:

☒	I have at least one well that supplies groundwater to my home for domestic purposes.
☒	I have at least one well that that supplies groundwater to my livestock.
☐	I have at least one well that supplies groundwater to a non-farm business (e.g., store).
☒	I irrigate/grow crops with groundwater in the Harney Basin.
☒	I have a groundwater fed spring on my property that is important to me.
☒	I value groundwater contributions to the environment (e.g., springs and native vegetation).
☒	I value fish and wildlife in the basin, including those that benefit from groundwater.
☒	I use agricultural products that are produced with groundwater.
☒	I value the economic contributions of agricultural operations that use groundwater.

Question 1. Please tell us about yourself and describe why groundwater is important to you. If you use groundwater, describe how you use it.

We use it to irrigate alfalfa. We have a ground water well at the house. We water cattle with a ground water well.

Question 2. If you use groundwater in the Harney Basin, mark with a color dot on the map provided where you use groundwater (this can be a rough approximation).



The legal is T26S R33E S29 361.2 total acres

Question 3. The Water Resources Department proposes to designate the area in the map outlined in black as a **Critical Groundwater Area**, which would give them the authority to regulate or curtail/reduce groundwater use. Do you have any feedback on the boundaries or the basis for designating a Critical Groundwater Area described in the **Division 10 report**? (See 609-512-0041 in the proposed rules)

Question 4. The map on the previous page shows the seven proposed **subareas** that the Department will use to regulate groundwater use (with different levels of regulation for each area). Based on your knowledge of the basin, are there any changes you would suggest to the boundaries? Draw them on the map and describe the reason below. (See 609-512-0041 in the proposed rules)

I feel that we should be in the Lower Blitzen-Voltage Subarea instead of the Northeast Crane Subarea. There is a hill between them. (Windy Point). or not be in a Critical Ground Area like the groundwater users South and East of us, which starts about a mile away.

Question 5. Please describe **groundwater conditions** where you are and what changes in groundwater levels or other groundwater changes you have observed in the last decade. If you have not observed any changes, please note that. You are also welcome to note any questions you have.

The groundwater level in the 3 irrigation wells we have increased 10.06 feet per well (average) every year in surface to water level.

Question 6. If you have been or expect to be **impacted by changing groundwater conditions**, please describe how you have been impacted.

We purchased land where we grow alfalfa approx. 3 yrs. ago. We purchased new irrigation systems to help conserve water too. From 2022 to 2024 we used 2.66 acre ft. (average) and were allowed 3 acre ft./yr. Every year we have improved.

Question 7. The Water Resources Department proposes to achieve the **groundwater management goal** of durably stable groundwater levels (0 feet per year of decline) by the year 2058 for the entire basin by curtailing groundwater use in 6-year intervals. Do you have feedback on the groundwater level goal and target groundwater level trend? (See 609-512-0041 in the proposed rules)

☒	I support the groundwater management goal and target groundwater level trend as proposed.
☐	I support the target groundwater level trend, but I would like to see more time allowed to achieve the goal. Year achieved:
☐	I support the target groundwater level trend, but I would like to see the goal achieved in less time on a quicker timeline. Year achieved:
☐	I think minor declines are acceptable and should be allowed. Acceptable amount of decline (in total feet or feet per year):
☐	I would like to see groundwater levels come back up or recover. Desired amount of recovery (in feet):
☐	I would like to be able to see groundwater levels be allowed to fluctuate between certain levels (+/- within a certain "band" of acceptable declines)

Question 8. The proposed **initial allocation** (duty) for groundwater irrigation rights is 2.5 acre feet of water per acre for acres that were irrigated (wetted acres) sometime between 2020-2024. What feedback do you have on this proposal? (See 690-512-0060 in the proposed rules)

☒	I support the initial allocation of 2.5 acre feet for groundwater irrigation rights.
☐	I think the initial allocation should be greater than 2.5 acre feet. Proposed amount:
☐	I think the initial allocation should be less than 2.5 acre feet. Proposed amount:
☐	I support that wetted acres should be calculated based on use between 2020-2024.
☐	I think wetted acres should be calculated based on a different time period. Suggested time period:

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AUG 01 2025
OWRD

Question 13. By 2028 all groundwater rights holders will be required to install a flowmeter to measure groundwater use and will be required to report groundwater use on an annual basis. A flowmeter must be installed on this timeframe in order to continue to legally use groundwater under existing rights. What feedback do you have on this requirement? Will you seek any assistance to meet this requirement? (See 690-512-0110 in the proposed rules)

I think the flow meter is a good idea.

Question 14. Under the proposed rules the only new uses that will be allowed are those uses that do not require water rights (i.e., permit exempt uses), such as domestic and stockwater wells, and non-consumptive geothermal uses. What feedback do you have on the proposed new uses? (See 690-512-0030 in the proposed rules)

I would like to use domestic and stock water

Question 15. Please describe what personal impacts you expect these rules might have on you (either positive or negative).

Question 16. Please describe what basin impacts you expect these rules might have on the broader basin or community (either positive or negative). (See the Fiscal Impact Statement).

Question 17. Describe actions that you would like the Department to consider that could mitigate or minimize anticipated impacts to you or the basin. This could include support for proposed policies or changes to the proposed policies.

Question 18. When you look into the future, what is most important to you? What do you hope to see for yourself and for the basin? What are you most concerned about?

We had to borrow money to buy the property in the Critical Ground Water Area. If we can not pump the water we expected it won't be good.

Question 19. What else is important for you to communicate to the Department?

Question 20. Do you have any other feedback on the proposed rules or groundwater management?

For questions about the proposed rules, please contact Kelly Mainz at the Water Resources Department (WRD_DL_rule-coordinator@water.oregon.gov or 971-718-7087).

For assistance with developing effective written comments, please reach out to Harmony Burrig with the High Desert Partnership who can help (541-846-8863 or harmony@saltandfresh.solutions).

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AUG 01 2025
OWRD

High Desert Partnership
PO Box 252
Burns OR 97720-0252

PORTLAND OR RPDC 972

30 JUL 2025 PM 5 L



Kelly Meinz - Rulemaking Coord.
OR Water Resources Dept.
725 Summer St. N.E. Suite A
Salem, OR 97301-1271

HARTT Laura A * WRD

From: Laurie O'Connor <laurieoc53@gmail.com>
Sent: Monday, August 11, 2025 8:02 PM
To: ericquaemptswrc@gmail.com; Woody Wolfe; joemollwrc@gmail.com; janleewrc@gmail.com; juliesmithermanwrc@gmail.com; kathykiharawrc@gmail.com; WRD_DL_rule-coordinator
Subject: 512 Rules comment to Water Resources Commissioners and OWRD

Some people who received this message don't often get email from laurieoc53@gmail.com. [Learn why this is important](#)

Commissioners and WRD staffers:

Thank you for dedicating your time and energy toward finding solutions to the critical water situation in the Harney Basin. As I participated in the grueling CBWP from 2016 thru 2021 it was clear that changes in OWRD regulation were long overdue, a fact witnessed by most of us on the ground for more than a decade before that critical study was started. When we drilled our domestic/stock well on our property north of Harney Lake in 1996, our well had fresh recharge, thirty feet of static reserve, and was of good quality. By 2016, our static level had dropped in half and minerals had concentrated substantially. In the past ten years, we have had to flush our well (\$6000 personal expense), in order to drop the pump and gain a few years of hopeful access to water with about ten feet of static for now. Similar declines and injuries have been experienced all around us in the orbit of Weaver Springs and throughout the Harney Basin. Extensive science was not needed for Harney residents to predict a huge problem was unfolding as the water rush to unlimited pumping was waved in. Now that the data is in place, there is hope that this tragedy will be curtailed, here as well in other parts of the state. Unfortunately, it is scientifically obvious that many of us will still lose our access to water in the near future, devaluing our properties and marginalizing our basic human rights.

I believe the science and data are thorough and accurate. I also want to emphasize that implementation must NOT BE DELAYED any longer! Throughout the community planning, everyone on the Domestic (Stock) Municipal Users group foolishly believed that we were working for immediate, if incremental, reductions of injurious allocations in the areas with serious declines. WRD chose not to enact regulations that clearly should have been enforced with the declines already evident. Now nine years later, the proposed Division 512 Rules only expect to achieve durably stable groundwater levels by 2058! Rather insulting, isn't it? And using a six-year window to review and adjust as needed also frightens me, having seen drastic damage in similar timeframes right around our location. Furthermore, the goal does not actively provide a plan to actually restore groundwater levels to pre-injury. Again, the majority of rural citizens (residential and stock well users) are being grossly marginalized.

Communication and factual information are hindered in a sparse, underserved rural community such as this. Throughout the collaborative process, many of us despaired over lack of citizen participation, yet living here ourselves we were not surprised. When the DMU group got a grant to circulate a survey to every registered domestic well owner in the summer of 2019, we were extraordinarily pleased with the response rate. I have included links to that survey and results here. [Harney Basin DMU survey](#) In order to monitor ongoing injury to rural wells, there must be more outreach efforts similar to this survey in the coming years! Restitution to these injured wells remains underfunded and overlooked. The Division 512 rules have recognized financial harm to agricultural users, but gives next to nothing to the 1000+

residential well owners who will experience grave injuries brought on by the over allocation of water for the past 30+ years, and more harm will certainly come with the slow corrections in the current plan.

Thank you all again for your dedication to this complex situation. Please do not delay implementation of the Division 512 Rules. I also hope there is a future possibility of adjusting toward faster stability and beyond to recovery, along with improved restitution to injured residential well owners.

Sincerely,
Laurie O'Connor
60114 McCanna Rd
Burns OR 97720

HARTT Laura A * WRD

From: Lorissa Singhose <lsinghose@yahoo.com>
Sent: Tuesday, August 12, 2025 4:13 PM
To: WRD_DL_rule-coordinator
Subject: Division 512 comments
Attachments: Silver Creek Subarea Sign on letter- signed.pdf

Some people who received this message don't often get email from lsinghose@yahoo.com. [Learn why this is important](#)

Please see attached comments. Can I please get a confirmation you received this.

Thank you,
Lorissa Singhose

July 23, 2025

Kelly Mainz – Rulemaking Coordinator
Oregon Water Resources Department
725 Summer St. N.E. Suite A
Salem, OR 97301-1271

Subject: Silver Creek Subarea Public Comments on Proposed Division 512 Rules

Dear Mr. Mainz,

Please accept these comments on behalf of the below signed individuals. Many of these individuals live in the Silver Creek Subarea or support businesses within the Silver Creek Subarea. We collectively request that the Department follow its existing policies and makes a greater effort to limit the economic impacts of proposed groundwater reductions in this area. Specifically, we make the following requests for the Division 512 rules:

- Designate the Upper Silver Creek area and the Lower Silver Creek/Warm Springs Valley/Harney Lake area as distinct groundwater reservoirs and establish distinct groundwater management goals based in existing policies of the state.
- Remove the Silver Creek Subarea from the Critical Groundwater Area designation or set the permissible total withdrawal to updated pumpage levels to protect existing users and uses.
- Include the definition of “reasonably stable” and “overdrawn” from OAR 690-008-0001 in the Division 512 rules and apply it in a management context.
- Identify in rule that regulatory reductions will not be made until wells are determined to no longer be “reasonably stable” or until decline conditions in permits are met or exceeded.
- Prevent transfers from other areas into this Subarea because it is not the same source.
- Encourage voluntary reductions in groundwater use through the development of a voluntary agreement in this Subarea.
- Specify the process by which the Department will consider local knowledge when making a determination of what constitutes “representative” wells for analysis. Actively partner with groundwater users to monitor groundwater levels and groundwater use and rebuild credibility and trust in Department data and science.
- Actively partner with groundwater users and others to better understand aquifer characteristics, the flow of groundwater and the change in spring discharge over time (setting a baseline for measuring change).

Representatives of the Silver Creek Subarea engaged in good faith in the Division 512 rulemaking process. Most of the questions asked still have not received answers from the Department and many of the concerns or suggestions raised were never meaningfully addressed. The representatives of this Subarea feel that the Department consistently took an approach of devising, presenting, and defending its position without meaningfully involving the public and impacted groundwater users. The Department has been selective in the information it presents and considers. Furthermore, the Department has not taken steps to minimize the fiscal impact on small businesses as required by ORS 183.330 and ORS 183.540. As written, the proposed rules will decimate our local economy, bankrupt local businesses, disrupt families, and destroy the social fabric and culture of our community.

For most of the rulemaking process Department was proposing no reductions in the Silver Creek area and modeling results showed that without reductions this area would achieve “near stable” groundwater levels (defined as ~0.1 ft/yr of decline). The Department changed its approach relatively late in the rulemaking process and is now requiring that the entire basin reach “durably stable” conditions (0 ft/yr of decline) within 30 years. The Department is currently proposing a 28% reduction from current estimated pumpage in the Silver Creek area despite the fact that groundwater conditions meet the definition of “reasonably stable.” This level of reduction is not warranted for this Subarea based on existing policies and existing data.

According to ORS 537.525 and ORS 536.220 the Department is required by law to protect existing water rights. ORS 536.525 clearly states a preference for voluntary joint action with groundwater users prior to relying on the police power of the state. We urge the Department to honor previous commitments and existing statutory requirements and first meaningfully pursue joint action with groundwater users in the Silver Creek Subarea prior to pursuing punitive regulatory action. We are committed to maintaining our way of life and sustainably managing groundwater resources for future generations.

Groundwater users were recently allowed by the Department to develop additional acres in this area under the current Division 512 rules with the full understanding that if the decline conditions reached 18 feet in the approved wells and substantial site-specific evidence showed that wells were not reasonably stable, that those wells would be subject to regulation. During the previous rulemaking process Department leadership, including now Director Gall, and staff indicated that this area may actually be able to sustain additional development. For the past decade Department leadership and staff have indicated that there is not a problem in the Silver Creek area. The Department also consistently committed to partnership and collaboration through the Groundwater Study Advisory Committee process and the place-based integrated water planning process.

Groundwater levels in the Silver Creek Subarea are reasonably stable as per the definition in OAR 690-008-0001. The Department’s own data shows that declines throughout this area have been minimal. The Groundwater Level Trends analysis performed in 2024 show that the median overall decline is -2.5 to -3.5 ft and the median rate of decline is -0.4 to 0.5 ft/yr. Notably, these trends are well within the range of what is considered reasonably stable by the Department. Groundwater users have raised questions and concerns regarding the inclusion of some wells in this network that do not appear to track with the majority of wells and may not accurately represent conditions. These questions and concerns remain unaddressed by the Department. Data recently collected by groundwater users in the area are showing that groundwater levels in portions of the basin are stable depending on the timeframe used for analysis and some wells have even risen above reference levels set by the Department. No available data show that this area has met the criteria for designation as a critical groundwater area. There are no wells that have met the Department’s threshold for declining excessively or excessively declined. If Weaver Springs is treated as a separate area, which it should be, then Silver Creek is not overdrawn or about to be overdrawn by the Department’s own definition.

Groundwater users have been responsibly using water within the terms and conditions of their permits for decades. To our knowledge, no domestic wells in this area have lost access to groundwater or have been forced to deepen due to declining groundwater levels. No concerns have

been publicly raised by domestic well users or stockwater users in this Subarea. We share an interest and concern in groundwater fed ecosystems and are committed to partnering with the Department and others to set a baseline for understanding and measuring impacts to springs, improving our understanding of the complex hydrogeology in this region as it relates to spring discharge, and pursuing voluntary measures to protect ecologically significant springs. Unless downstream springs are protected with a senior water right, we do not believe that the Department currently has legal authority to regulate other groundwater users in favor of unprotected springs.

Groundwater in the Silver Creek area is distinct from groundwater in the Silvies area, Weaver Springs area, Northeast parts of the basin, and Donner Und Blitzen area. Groundwater in much of the Silver Creek Subarea is modern water and is recharged through precipitation and streamflow in the uplands. The groundwater chemistry and quality are particular to this recharge area. The geology and subsurface are distinct from other parts of the basin. The Silver Creek subarea was providing minimal recharge to the Weaver Springs area prior to the overallocation and over pumpage of groundwater in that Subarea, which created a new, artificial, low point in the basin. Weaver Springs is now drawing in groundwater from surrounding areas, leading to groundwater level declines that emanate from that cone of depression to other Subareas while the Weaver Springs area equilibrates. We believe that there is sufficient information to demonstrate that these areas are hydrologically distinct and should be managed as different groundwater reservoirs.

If the Silver Creek Subarea was not hydrologically connected to the Weaver Springs area we question whether the Department would be proposing regulatory action. Basin stakeholders have been raising concerns about overdevelopment of the Weaver Springs area for over a decade. Despite significant evidence demonstrating a significant and growing problem in Weaver Springs, the Department and Commission chose not to take immediate action to remedy the issues there. The Silver Creek Subarea is now unfairly being held responsible for the Department's own inaction in Weaver Springs.

The Department previously made a determination in the Silver Creek area that groundwater is available, within the capacity of the resource, and that groundwater use was in the public interest as required by ORS 537.621. The groundwater study clearly shows that groundwater is not overdrawn and is still available by the Department's own definition if additional development is not allowed to occur and if Weaver Springs is treated as a distinct Subarea. We urge the Department and Commission to adhere to existing statutes and rules rather than pursuing unprecedented groundwater reductions through regulations that lack a defensible legal and technical basis.

The groundwater users in this area are primarily family owned and operated businesses that have a strong desire to stay in business and pass our operations onto our children and grandchildren. We believe we can sustainably manage groundwater and voluntarily reduce groundwater use without putting any farms out of business in this area. Our recommendations will ensure that groundwater management in this area is consistent with groundwater laws and policies, protects groundwater for current and future uses, builds a culture of partnership and collaboration with the state, reduces litigation and implementation costs of the Department, and minimizes economic impacts to Harney County. We stand ready to work with the Department to responsibly and sustainably manage groundwater in the Silver Creek Subarea.

Signed by:

First and Last Name	Representing/Affiliation
Leslie Richman	Self - Silver Subarea Irrigator
Shane L. Olley	Self/Irrigator Silver Subarea Irrigator
Cynthia A. Olley	Self/Irrigator Silver Subarea
Matth Bailey	Self/Irrigator Silver Subarea
Kathy Tommermacher	Clearwater Irrigation Business (Local)
Beth Tommermacher	Manager of Clearwater (Irrigation Business)
Daniel F. Danner	Self Mid Butte Irrigator
Craig Nelson	Ed Stamb & Son's Petroleum - Burns Manager
Greg Selby	Robbins Equipment - Burns Inc.
Frank Haggins	Harvey Electric Cooperative, Inc.
Scott Scott	BURNS POINT 5
Salvatore	ACW, INC.
Campbell	Tate Blackman Road Estate
Steven Dorensple	Hatchkiss Farms LLC
Dorell Dorepl	President Hatchkiss Co Inc

Signature Page

Signed by:

First and Last Name	Representing/Affiliation
Tyler J. Singh	Irrigator
Birdie Singh	Farmer
Parker Singh	Farmer
Ashley Singh	Farmer / Rancher
Phillip Singh	Rancher / Irrigator
Leisa J. Singh	Farmer / Irrigator

Signature Page



WaterWatch of Oregon

Protecting Natural Flows In Oregon Rivers

June 10, 2025

Oregon Water Resources Commission
Sent via email to: Cassidy Fredlund, Mindy Lane

RE: WRC June 12, 2025 Item F (Division 512 Rulemaking)

Dear Chair Quaempts and Members of the Commission:

Thank you for the opportunity to comment on the Division 512 Rulemaking. WaterWatch, which served on the 512 RAC, will be providing more detailed comments through the rulemaking process but wanted to provide you with these higher level comments in conjunction with Item F.

1. *The Proposed Rules will result in additional unacceptable impacts to springs, streams, and native vegetation which runs afoul of the Water Code.*

WaterWatch very much appreciates the Department's work on developing the rules and running the extensive related RAC process. However, we remain very concerned that Proposed Rules will unduly impact springs, streams, and native vegetation in order to allow additional groundwater pumping for irrigation.

Under Oregon's Groundwater Act, among the provisions that OWRD must include in any rule designating a critical groundwater area is the following:" "[a]ny one or more provisions making such additional requirements as are necessary to protect the public welfare, health and safety in accordance with the intent, purposes and requirements of ORS 537.505 to 537.795 and 537.992." ORS 537.735(2)(d).

The provisions for protecting the public welfare, health and safety are provided at ORS 537.525 and include that "[a]dequate and safe supplies of ground water for human consumption be assured, while conserving maximum supplies of ground water for agricultural, commercial, industrial, thermal, recreational and other beneficial uses." ORS 537.525(5).

Under Oregon law, public instream uses of water are beneficial uses. ORS 537.332 and ORS 537.334(1). These uses include the "conservation, maintenance and enhancement of aquatic and fish life, wildlife, fish and wildlife habitat and any other ecological values[.]" ORS 537.332(5)(b). These uses are therefore included in the requirement of ORS 537.535(5) to "conserve[e] maximum supplies of ground water" for "other beneficial uses" (among other uses). We also read the term "within the capacity of available sources" in ORS 537.525(3) to require consideration of these same aspects the groundwater resource because they are supported by the capacity of the source. Importantly, ORS 537.525(5) does not refer just to other water rights; because instream uses are beneficial uses, they are uses for which critical groundwater area rules must conserve a maximum supply (whether or not there is a relevant instream water right).

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Lisa Brown 1/15

Relevant instream uses here include, but are not limited to: habitat and ecological values supported by natural evapotranspiration (ET) (e.g. native vegetation); habitat provided by groundwater fed wetlands; habitat provided by springs (including for aquatic species and terrestrial species); habitat provided by groundwater dependent lakes such as Stinkingwater Lake on the Malheur National Wildlife Refuge (which hosts an endemic crayfish); and habitat provided by groundwater discharges into streams. These landscape elements also provide for non-fish and wildlife uses, such as supporting domestic animals.

None of these were utilized as criteria in designing the Proposed 512 Rules. Rather, the USGS model was run to maximize irrigation pumping while ultimately stabilizing groundwater levels. We think this ultimately contributed to an imbalance in the Proposed Rules favoring irrigation pumping.

The magnitude of reductions in groundwater dependent ecosystems is significant. USGS has estimated that between pre-1980 and 2018 there has already been a reduction in natural evapotranspiration across the basin of 45%, with an annual loss of 40,000 acre-feet. (USGS, Groundwater Model of the Harney Basin, Southeastern Oregon, Scientific Investigations Report 2024–5017, p. 82, Adobe 96). The proposed rules are estimated to reduce this further so that by 2060 only 43.7% of lowland natural evapotranspiration remains across the basin, with some sub-areas experiencing even greater losses. (RAC 14 PPT, p. 181). USGS estimates that discharge to streams and springs has already been reduced by 43.5% between pre-1980 and 2018, basin wide, with the proposed rules certain to decrease this further as groundwater levels are allowed to further decline. While these are modelled results, which may not be as precise as the projected groundwater levels, it is the best available information regarding these impacts.

We also note that the 512 rulemaking did not have the benefit of review of additional entities, such as ODFW. Impacts from the rules are highly relevant for Oregon’s Sage-grouse Conservation Strategy (especially because sage-grouse need seeps, springs, and green spots during the summer months) and Oregon’s Wildlife Action Plan (including for sage-brush, and aquatic systems that support State Sensitive redband trout). Further, it is unclear whether the impacts to the Malheur National Wildlife Refuge were adequately minimized and addressed.

In sum, we do not think the Proposed Rules struck an appropriate balance between irrigation pumping and limiting additional impacts to springs, streams and native vegetation and thus urge further refinement to address these.

2. *Oregon’s Groundwater Act prioritizes ensuring groundwater for human consumption and the Proposed Rules do not do so.*

As noted above, the critical groundwater rules require that “[a]dequate and safe supplies of ground water for human consumption be assured, while conserving maximum supplies of ground water for agricultural, commercial, industrial, thermal, recreational and other beneficial uses.” ORS 537.525(5). This plainly elevates protecting supplies of groundwater for human consumption over irrigation and other uses, but that is not how the Proposed Rules were designed.

The Proposed Rules are projected to result in 98 additional domestic wells being dried up as a result of continued irrigation pumping (compared to 200 if no action is taken). Even if it were legal to address this impact through funding (*i.e.* paying to deepen wells or truck in water or the like), there is no plan in place (nor money) to do so. While an analysis is beyond the scope here, neither of the two existing Oregon programs—the statewide WARF fund or the Harney Domestic Well Fund—have the money or appropriate eligibility criteria to address situations with these 98 additional dry wells. This clearly fails to meet the statutory requirement related to assuring groundwater for human consumption.

To address these issues, we think that further reduction in the Permissible Total Withdrawals, further frontloading of the curtailment implementation, and further consideration regarding assurance of groundwater for human consumption are needed.

Thank you for the opportunity to comment and for your service on the Commission.

Sincerely,

/s/ Lisa A. Brown

Lisa A. Brown
Staff Attorney
lisa@waterwatch.org

MEINZ Kelly A * WRD

From: Lisa Brown <lisa@waterwatch.org>
Sent: Wednesday, August 13, 2025 4:57 PM
To: WRD_DL_rule-coordinator
Subject: WaterWatch comments on Proposed Rules for Division 512
Attachments: WaterWatch Comments re 512 Proposed Rules (8-13-2025).pdf

Mr. Mainz –

Please find attached WaterWatch of Oregon's comments on the Proposed Rules for Division 512.

Best,

Lisa Brown | Staff Attorney
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213 SW Ash St, Suite 208
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WaterWatch of Oregon

Protecting Natural Flows In Oregon Rivers

August 13, 2025

Kelly Mainz

Oregon Water Resources Department

By email to: WRD_DL_rulecoordinator@water.oregon.gov

RE: Comments on the Division 512 Proposed Rules

Dear Mr. Mainz:

Thank you for your work on the Division 512 rulemaking process and for the opportunity to comment on the Proposed Rules. We greatly appreciate the extensive time and effort that Department staff invested in this rulemaking process and in the related processes that proceeded it. It is imperative that the agency expeditiously adopt strong rules to put the basin on a more sustainable path into the future. We offer the following comments regarding the Proposed Rules, including suggestions for strengthening certain provisions.

Comments

1. The Division 512 rulemaking process has been in-depth, exhaustive, information rich and science-based.

As a member of the Rules Advisory Committee (RAC), who has worked on Harney Basin groundwater issues since raising concerns in 2014, I want to thank Department staff for running an in-depth, exhaustive RAC process. The RAC met for a little more than two-years, with 15 RAC meetings mostly lasting at least one full day. The Department also contracted Oregon Consensus and the High Desert Partnership to prepare materials and hold Discussion group meetings between RAC meetings, totaling 14 additional meetings.¹ The 512 RAC process surpasses the exhaustiveness of even the recent Groundwater Allocation RAC, which likely set the previous record at 8 RAC meetings over the course of a year and half. It's important to note that this was a tradeoff: every year that passes without curtailing groundwater comes with the cost of worsening the problem, and results in lower groundwater levels that may never be recovered, but this was allowed in order to have more process.

During RAC meetings, Department staff provided information on a myriad of topics—such as the available groundwater level and pumping data and how it was being utilized, model runs, and rule and statutory requirements—and received feedback and often adjusted course based on the discussion. For instance, the Department first proposed 15 sub-areas, but reduced this to 7 based on feedback from irrigators and others on the RAC that smaller areas would make it harder for irrigators to be successful at developing Voluntary Agreements and would heighten neighbor to neighbor conflict. It is important to note, though, that RACs are not voting bodies, are often (as

¹ <https://www.oregon.gov/owrd/programs/policylawandrules/OARS/Pages/Division-512-Rulemaking.aspx> (visited 8-11-2025)

in this case) not balanced in terms of numbers representing different interests, and lack the authority to dictate the content of rules proposed or enacted by an agency. It is the agency that must ultimately enact rules that uphold its authorities and duties.

Harney groundwater discussions also long proceeded this RAC. A RAC met in 2015 and 2016 regarding the 2016 amendments to Division 512. This RAC included hard but important discussions about the basin's groundwater challenges and the adopted rules helped put the basin in a better position today. This was followed by a Groundwater Study Advisory Committee, jointly appointed by the Harney County Court² and Oregon Water Resources Department (OWRD), that met with OWRD and USGS to discuss the development of the groundwater study starting in July 2016 and meeting quarterly through 2019 (except for 2019 when it met 6 times), and then meeting again in 2022 when the study was finalized.³ The purpose of the committee was to: "foster an open exchange of information, data, and ideas between Harney County residents, other interested parties, and the OWRD and USGS Groundwater Study Team with the intent of strengthening the groundwater study. In order to accomplish this, the Advisory Committee will: • Create a forum where groundwater scientists can share data, information, analyses, and observations on a regular basis with the committee; and, • Collect, compile, and share local knowledge, expertise and data that is relevant to the study."⁴ Per current OAR 690-512, members of the Groundwater Study Advisory Committee were invited to join the RAC. Even prior to these processes, the Harney County Watershed Council received Oregon Watershed Enhancement Board grants starting in 2009 to do landowner outreach and study groundwater.⁵ Groundwater has also been a major focus of the Community Based Water Planning process (Harney Place Based Planning), entailing many years of discussion and development of strategies (including some that are already in place such as the Harney CREP program), and ultimately consensus on a Groundwater Plan which included strategies such as measurement and reporting of non-exempt groundwater use that is much like the Serious Water Management Problem Area provisions in the Proposed Rules.

All of these previous processes have provided an ongoing foundation and exchange of knowledge for interested stakeholders, and for discussions with the agency, that are relevant to this rulemaking.

The in-depth nature of the Department's Division 512 presentations, the RAC discussion, changes made based on RAC input, and the in-depth Discussion groups that the Department contracted out to Oregon Consensus and the High Desert Partnership, are evident in the robust record available on the Department's 512 rulemaking webpage.⁶ We highlight this to

² The County Court both co-appointed and had a seat on the Groundwater Study Advisory Committee; it also was a RAC member on both the 2016 Division 512 RAC and the instant Division 512 RAC.

³ Meeting materials and the charter for the Groundwater Study Advisory Committee are available here: <https://www.oregon.gov/owrd/programs/gwwl/gw/harneybasinstudy/pages/gwsac.aspx> (visited 8-12-2025)

⁴ *Id.*

⁵ <https://hcwatershedcouncil.com/groundwater-investigation/> (visited 8-13-2025)

⁶ <https://www.oregon.gov/owrd/programs/policylawandrules/OARS/Pages/Division-512-Rulemaking.aspx> (visited 8-13-2025)

demonstrate the level of effort that went into communication in this rulemaking process and to emphasize that the agency is well-positioned to act expeditiously.

2. Groundwater pumping has already resulted in significant impacts to springs, streams and native vegetation.

Groundwater dependent ecosystems in the Harney Basin include features such as springs, streams and wetlands supported by groundwater, and groundwater supported native vegetation. These provide crucially important habitat and resources for native fish and wildlife, such as migratory and resident birds (including sage grouse), redband trout, and wild ungulates, to name a few, and also some domestic animals. Based on the Groundwater Model of the Harney Basin, Southeastern Oregon, prepared by USGS in cooperation with OWRD,⁷ USGS reports that simulated discharge to streams between 1980 and 2018 declined 43% (declining from 46,000 acre-feet annually prior to 1980 to 26,000 acre-feet annually by 2018).⁸ Similarly, USGS reports that the monthly volume of simulated natural evapotranspiration (ET) (which is a signal for native vegetation) “averaged about 7,400 acre-ft (about 89,000 acre-ft annually) prior to 1980, but with the exception of a few wet periods, declined relatively steadily after that, so that by 2018 the monthly simulated ET was about 4,100 acre-ft (about 49,000 acre-ft annually).” This is a decrease of 45%.

Under Oregon’s statutory Groundwater Act, among the provisions that OWRD must include in any rule designating a critical groundwater area (such as the Proposed Rules) is the following: “[a]ny one or more provisions making such additional requirements as are necessary to protect the public welfare, health and safety in accordance with the intent, purposes and requirements of ORS 537.505 to 537.795 and 537.992.” ORS 537.735(2)(d). This includes the requirement to protect groundwater dependent ecosystems which are included within at least these two statutory “public welfare, health and safety” criteria:

“Policy. The Legislative Assembly recognizes, declares and finds that the right to reasonable control of all water within this state from all sources of water supply belongs to the public, and that in order to insure the preservation of the public welfare, safety and health it is necessary that:

(3) Beneficial use without waste, *within the capacity of available sources*, be the basis, measure and extent of the right to appropriate ground water.

(5) Adequate and safe supplies of ground water for human consumption be assured, *while conserving maximum supplies of ground water* for agricultural, commercial, industrial, thermal, recreational *and other beneficial uses*.

***”

ORS 537.525 (emphasis added).

⁷ <https://pubs.usgs.gov/sir/2024/5017/sir20245017.pdf> (visited 8-12-2025)

⁸ *Id.*

Under Oregon law, public instream uses of water are beneficial uses. ORS 537.332; ORS 537.334(1). These uses include the “conservation, maintenance and enhancement of aquatic and fish life, wildlife, fish and wildlife habitat and any other ecological values[.]” ORS 537.332(5)(b). These uses are therefore included in the requirement of ORS 537.535(5) to “conserve[e] maximum supplies of ground water” for “other beneficial uses.”⁹ In the context of the 512 rulemaking, these instream uses would include, but not be limited to: native vegetation supported by groundwater and the habitat and ecological values it supports; habitat provided by groundwater fed wetlands; habitat provided by springs (including for aquatic species and terrestrial species which would include game and other wildlife); habitat provided by groundwater dependent lakes such as Stinkingwater Lake on the Malheur National Wildlife Refuge (which hosts an endemic crayfish); and habitat provided by groundwater discharges into streams. We also read the term “within the capacity of available sources” in ORS 537.525(3) to require consideration of these same aspects the groundwater resource because they are supported by the capacity of the source.

As the agency considers the Proposed Rules, it is important to remember and consider where the basin is on the trajectory of impacts to these important groundwater dependent ecosystems. Without recovery of groundwater levels (which the Proposed Rules generally do not do), it appears that losses already incurred will not be reversed. Allowing groundwater levels to lower further through additional groundwater pumping will worsen these problems. We therefore urge the agency to promptly adopt the strongest possible rules. As detailed below, these instream features could be further protected through incorporation into the Adaptive Management system, and by shortening the timeline to stabilization of the groundwater levels.

3. Curtailment should not be reduced in the Lower Blitzen-Voltage sub-area.

After reviewing the Memorandum regarding Evaluation of Division 512 RAC Alternate PTW Scenario (May 30, 2025) (“Memo”), we do not support the discussion idea put forth for consideration by some RAC members to shift curtailment from the Lower Blitzen-Voltage sub-area to the NE Crane sub-area. The Lower Blitzen-Voltage sub-area, which supports internationally important bird habitat on and around the Malheur National Wildlife Refuge, as well as redband trout, fresh water mussels and other fish and wildlife, is the sub-area that has already suffered the highest decline (by percentage) in discharge to lowland springs and streams. (Memo, Table 2). Shifting some of the curtailment in the Proposed Rules from the Lower Blitzen-Voltage sub-area up to the NE Crane sub-area would increase the impacts to spring and streams in the Lower Blitzen-Voltage. (*Id.*). In light of the importance of groundwater dependent ecosystems in the Lower Blitzen-Voltage, including on the National Wildlife Refuge, which not only provide essential habitat but also contribute to the basin’s economy by drawing visitors to the area—and the outsized impacts that pumping has already had on these ecosystems—we do not support increasing the allowed pumping in the Lower Blitzen-Voltage sub-area as evaluated in the Memo.

⁹ ORS 537.535(5) does not refer to other water rights, but rather to uses.

4. Oregon’s Groundwater Act prioritizes ensuring groundwater for human consumption: drying up additional domestic wells with no effective means to remedy the problem is not appropriate.

As noted above, the critical groundwater rules must protect:

“Adequate and safe supplies of ground water for human consumption be assured, while conserving maximum supplies of ground water for agricultural, commercial, industrial, thermal, recreational and other beneficial uses.”

ORS 537.525(5); ORS 537.735(2)(d). This plainly elevates protecting supplies of groundwater for human consumption over irrigation and other uses. The Proposed Rules would cut the number of domestic wells expected to go dry as a result of groundwater pumping for irrigation from 200 to 98. (NoticeFilingTrackedChanges (Notice) at 18, 26).

There is no well fund in place today that could address the drinking water needs of these well owners, even if fully funded. (*See e.g.* Notice at 26). There are two well deepening/remediation funds and neither one has either the money nor the guidelines to be capable of addressing the ongoing, let alone upcoming, impacts to domestic wells. The statewide Well Abandonment, Repair, and Replacement Fund (WARRF) has been over-subscribed and underfunded, and is currently (since March 10, 2025) not accepting new applications due to lack of funds.¹⁰ Any WARRF applications from the Harney Basin would be competing with applications from several other parts of the state also experiencing problems. Further, to be eligible for that fund, one must be of low to moderate income (defined as \$49,000/year for one person). The current cost of replacing a well averages \$29,000, but varies widely. This means a person making \$50,000 a year would not be eligible for a WARRF grant, even though replacing a well could cost upward of 58%, on average, of their annual income. The Harney Domestic Well Fund (which only received \$500,000) is even less amenable to use, paying out a maximum of \$10,000 or 75% of cost (whichever is less), prioritizing low to moderate income residences, and having various other priorities and restrictions.¹¹ This places potentially tens of thousands of dollars of cost on an applicant, regardless of how low their income is. Further, to be eligible for the Harney fund, the resident had to be using the well by April 15, 2016. While that made sense for the first round, so that funds were focused on people already experiencing known impacts, it would be inadequate to address the additional wells projected to go dry over the next 30+ years because people may move to existing residences within the basin, build new residences, drill new wells that then go dry maybe decades later, or move into the basin.

It is critical to have a plan and fully funded programs that *assure* “[a]dequate and safe supplies of ground water for human consumption.” Through discussions in the Community Based Water Planning (Harney Place Based Planning) process, it became clear that the water quality of deeper groundwater in the basin is often not adequate for drinking. Where this is the case, simply paying to deepen a domestic well does not meet the statutory requirement of assuring “adequate and safe supplies of ground water for human consumption.”

¹⁰ <https://www.oregon.gov/owrd/programs/GWWL/WARRF/Pages/default.aspx> (visited 8-12-2025)

¹¹ <https://www.oregon.gov/owrd/programs/FundingOpportunities/HDWF/Pages/default.aspx> (visited 8-12-2025)

Some states, such as Minnesota, have processes where private irrigators with high capacity wells that are shown to impact domestic wells pay to address the problem.¹² This is a different model from Oregon's, where the public and the government pay to address the problem, even though there is a private economic profit accruing from the irrigation pumping. There may be some variation of a program such as Minnesota's, such as a fund that irrigators would pay into, that could work to address at least some of the domestic well issues in the Harney Basin.

In summary, the significant increase in large scale groundwater pumping for irrigation has impacted many domestic wells across the Harney Basin, and continued irrigation pumping allowed under the Proposed Rules will impact many more in the coming years. The state currently lacks any effective way to address this loss of drinking water for rural residents. We urge the Department and Commission to determine how it will do so and then implement needed programs.

5. The Proposed Rules properly designate the Critical Groundwater Area boundary and properly set the target level decline at no decline.

The designation of the Harney Basin Critical Groundwater Area Boundary as the area coincident with the Greater Harney Valley Groundwater Area of Concern Boundary (*Proposed* OAR 690-512-0020(7)) is consistent with the Groundwater Act and its implementing rules, and with extensive analysis of relevant data. *See* ORS 537.730; OAR 690-008-0001. This is documented in detail in the Groundwater Report for the Harney Basin Critical Groundwater Area Rulemaking posted to OWRD's 512 Rulemaking webpage in June, 2024.¹³ Further, breaking the Critical Groundwater Area into 7 sub-areas, based on criteria and analysis that were explained and discussed in the RAC process (*see* materials on the OWRD 512 Rulemaking webpage), provides for appropriately tailored curtailment schedules and PTWs that recognize differences in these areas.

We also support setting the target groundwater level decline within the Critical Groundwater Area at a median groundwater level decline of no more than 0 feet per year over a five-years period calculated as provided in the Proposed Rules. (*Proposed* OAR 690-512-0041(1)). This could be strengthened by incorporating a "median plus" approach that also would account for any outlier wells experiencing large declines; such declines could coincide with unanticipated impacts to other groundwater uses such domestic wells or springs making it important to address these. That aside, the definition of target groundwater level decline in the Proposed Rules is the right definition to attain and maintain sustainability for the basin and in a manner that meets the requirements of the Groundwater Act.

¹² https://www.dnr.state.mn.us/waters/watermgmt_section/appropriations/interference.html (visited 4-25-2025)

¹³ <https://www.oregon.gov/owrd/Documents/Groundwater%20Report%20for%20the%20Harney%20Basin%20CGWA%20Rulemaking.pdf> (visited 8-13-2025)

6. The proposed Adaptive Management system should be amended to include evaluation of impacts to springs, streams, native vegetation and domestic wells, with adjustments to curtailment triggered as needed.

The proposed Adaptive Management system (*Proposed* OAR 690-512-0080) includes a system for increasing or decreasing the scheduled quantity of reduction for any sub-area based on a comparison every six years of the median groundwater level change with the groundwater level change envelope defined in Exhibit 14. The proposed system is based on median groundwater level change and does not incorporate consideration of whether the impacts on domestic wells or groundwater dependent ecosystems are falling within expected ranges. This is a serious oversight including because the USGS model used to develop the Permissible Total Withdrawals (PTWs) and curtailment schedules may be more spatially accurate regarding groundwater levels than domestic wells or groundwater dependent ecosystems. Without incorporating consideration of domestic wells and groundwater dependent ecosystems into the Adaptive Management system, allowed pumping could cause unanticipated impacts with no remedies to address these impacts other than reopening the 512 rules or using vehicles outside the rule framework.

We suggest adding a new *Proposed* OAR 690-512-0080(6) stating this or similar:

(6) At each adaptive management checkpoint, the Department will evaluate, for each sub-area, the impacts to: domestic wells; groundwater discharge to lowland springs and streams; and natural evapotranspiration. If impacts to any one of these is beyond anticipated impacts in one or more sub-areas, the Department shall increase the scheduled curtailment quantity in such sub-areas.

The Department has presented and analyzed data related to these impacts using the USGS-OWRD model and, therefore, could create an envelope as it did for the median groundwater levels. Adding an Adaptive Management provision pertaining to domestic wells and groundwater dependent ecosystems provides a layer of assurance that these will not suffer further harms beyond what is anticipated by the continued irrigation pumping that will be allowed under the Proposed Rules.

Incorporating these consideration into the Adaptive Management is also important because the PTW was determined based on modelling that maximized groundwater pumping while still eventually stabilizing groundwater levels. (*See* Notice at 20, stating “The Department optimized the Harney Groundwater Model (Gingerich et al., 2024) to find the smallest reductions in groundwater pumping necessary to achieve groundwater stability of zero feet of decline at the end of 30 years.”). This means that the non-irrigation values and uses of groundwater were not incorporated as the PTW was determined, increasing the importance of addressing these through Adaptive Management.

7. The Adaptive Management provision delaying curtailment if certain water levels and water level trends are found in 2027 should be amended to better protect the resource.

The Proposed Rules provide that if 2027 groundwater levels and groundwater level trends fall within certain parameters, including a decline of zero or above from 2022 to 2027, “the regulatory reductions scheduled for 2028 will be reduced to zero.” (*Proposed* OAR 690-512-

0080(2) and (2)(c)). This would mean, pursuant to *Proposed* OAR 690-512-0070, for any sub-area meeting these parameters, there would be no reductions in allowed pumping until 2034.

There are at least two problems with this. First, given the overall condition of the basin, it does not seem justified to waive curtailment in a sub-area until nearly a decade from now just because groundwater levels in a five-year period look good. Second, this is a one-way valve allowing for elimination of curtailment for a six year period if conditions are better than expected in 2027, but not requiring enhanced curtailment if conditions are worse than expected in 2027. This potentially sets the basin up for problems meeting targets. Adjusting it to provide balanced use of this Adaptive Management concept would produce a better result.

8. The agency should consider shortening the timeline for stabilizing groundwater levels.

The Proposed Rules would stabilize groundwater levels by 2058, more than 30-years from today. Longer time frames to stabilize groundwater levels result in lower groundwater levels at time of stabilization and this creates more harm to the resource, domestic wells, and groundwater dependent ecosystems as levels are stabilized. This is an excessive timeline. We urge the Department and Commission to consider shortening the timeline. To do this, we propose that *Proposed* OAR 690-512-0070(2) (Notice at 54) be modified as follows (additions in bold, deletions in strikethrough):

(2) Water use within all remaining subareas of the Critical Groundwater Area will be scheduled for reduction to the permissible total withdrawal with 40% of the total reduction scheduled in 2028, 30% of the total reduction scheduled for **2031** ~~2034~~, 15% of the total reduction scheduled for **2034** ~~2040~~, 10% of the total reduction scheduled for **2037** ~~2046~~, and 5% of the total reduction scheduled for **2040** ~~2052~~;¶

This would result in a still very generous timeline allowing 15 years from now to get to the PTW.¹⁴ Alternately, the agency could adopt a tighter schedule utilizing five increments of two-years each, arriving at the final curtailment step in 2036. Especially considering the extent of unfettered pumping that has been allowed to continue while extended processes were conducted and delayed, these timelines would provide appropriate time for adjustments to be made while also providing strong protection for Oregon's groundwater resources.

9. The rules should include a clear and timely implementation process for determining if pumping is occurring within the PTW and for adjusting allowed pumping quantities in real-time if pumping has exceeded the PTW.

The rules are silent regarding how the Department will ensure that pumping volumes do not exceed the allotted PTW, as described in the Proposed Rules. The every-six year review of median water level trends included in the Adaptive Management provision (*Proposed* OAR 690-512-0080) will not achieve this essential implementation piece. While this will also be a critical enforcement issue once the contested case is completed, it is important to articulate in these rules

¹⁴ These changes would require changes to other dates in the rules, for example, the Adaptive Management dates and the 2058 date in *Proposed* OAR 690-512-0080(7).

how the Department will determine whether PTW is being met and how adjustments will be made if the PTW is being exceeded.

We propose an additional section in *Proposed* OAR 690-512-0070 along the lines of:

(8) Each holder of a water right that is not regulated off shall report to the Department monthly the volume of water pumped in that month. The Department shall compile reports by sub-area and determine whether pumping is within the permissible total withdrawal as scheduled in this section. For each sub-area, if pumping exceeds the allowable permissible total withdrawal as scheduled in this section, the Department shall reduce the allowable permissible total withdrawal in such sub-area for the remainder of the irrigation season and for following years as necessary to correct for the over-pumpage. The Department shall also regulate off any water rights that exceeded the allotted permissible total withdrawal but may establish a process for allowing the water right to be pumped again upon a showing that the overage was the result of an innocent error.

Including a provision like this in the rules is essential to ensuring that the basin does not get off-track—and that if it does, the problem is corrected in a timely manner. If such provision is not added to the 512 rules, we request that the Department and Commission commit to establishing an implementation procedure that ensures, in real-time, that the PTW is being met, that any deviations are promptly corrected, that the allowable PTW is reduced going forward to account any over-pumpage, and that any water rights exceeding allotted pumping amounts are appropriately addressed.

10. The EConorthwest study contains significant errors and should not be relied upon.

The report prepared by EConorthwest for Oregon Solutions and the Department, discussed at pages 20-24 of the Notice, contains significant errors.¹⁵ A complete analysis is beyond the scope here, but for instance, the report assumes that revenue in the Harney Basin livestock industry will be reduced by the same percentage at which groundwater pumping is reduced under the Proposed Rules. That does not make sense for several reasons. Much of the livestock industry in Harney County involves growing meadow hay using surface water rights to flood irrigate and also utilizing grazing allotments on federal lands. The fact that livestock growers may also feed alfalfa under certain conditions does not mean that a 35% reduction in groundwater pumped (which the study equates to 35% less alfalfa grown in Harney Basin) will increase costs and decrease revenue by 35%. To do this calculation, one would need to know how much of the costs are directly tied to alfalfa and whether, and by how much, the price of alfalfa in the basin (whether grown in the basin or imported from other areas) may (or may not) increase under the Proposed Rules. Without doing any of those calculation, the report instead assumes a 35% reduction in profits to this industry, which then accounts for more than half of the economic impact projected in the report. This is like saying if apples are 1% of one's grocery budget and there will be 50% fewer apples grown locally (but no known reduction of apples grown outside of the local area), then one's grocery bill will go up by 50%. Also important to note is that the

¹⁵ The Notice (at 20) misstates that the RAC requested this report; this was a request by certain RAC members, not the RAC.

alfalfa yields used for the report were “derived from self-reported averages from farmers across five of the seven subareas,” thus introducing potentially significant error. Another broader problem with the report is the use of 2018 as the baseline against which to compare the Proposed Rules. This misses the point: it is impossible for things to go on at the pumping levels seen in 2018. Wells in Weaver Springs have already gone dry and become unusable. Limits on pumping will help the basin maintain a sustainable level of irrigation into the future—an economic benefit that the report misses.

Use of the ECONorthwest report should proceed with caution to ensure that the economic impact of the rules is not being misstated or misunderstood.

11. The Serious Water Management Problem Area (SWMPA) designation and continued classification for exempt groundwater uses only are critically important parts of the Proposed Rules.

Measurement and reporting of water use, which would be required under the SWMPA portion of the Proposed Rules, and the prohibition on new groundwater permits are both essential the success of the critical groundwater area. As explained above, to ensure that pumping is within the PTW, water use reporting should be either real time via a transducer, or at least more frequent and more frequently reported (e.g. monthly reporting of the volume pumped each day). It should also include the rate of appropriation in addition to the volume, which is an important compliance issue.

The classification of the Harney Basin for exempt groundwater uses only (which essentially continues *current* OAR 690-512-0020(2)) is obviously critically important to the success of the curtailment proposal because it forecloses new permits defeating the purpose of the Critical Groundwater Area.

12. The Department and Commission should not delay adoption of the rules.

Over-allocation of groundwater in the Harney Basin has been a widely known problem for well more than a decade and, during that time, there have been many delays in addressing it and pushback in efforts to begin. A full history is beyond the scope here, but for example, denials of new groundwater permits have been protested; denials of extensions of time have been challenged at the Court of Appeals and otherwise rebuffed and reversed; most recently, opposition to the Department enforcing the decline permit condition that was placed on new permits due to agency concern regarding declining groundwater levels has, at least temporarily, shut down efforts to enforce this critically important permit condition, which would meaningfully contribute to stabilizing groundwater levels. Years ago, recognizing the significant timeline to begin implementing pumping limits, the Department issued one or more press releases “advising permit holders in the Harney Basin against increasing their groundwater use, even if they have a water right permit that allows for additional pumping to increase the amount of land being irrigated” because “additional development of groundwater will only make groundwater declines worse in the basin and may be subject to curtailment in the future as the Department and community implement actions to reduce groundwater use and stabilize groundwater levels,” but it’s unclear to what extent this advice was heeded as new wells

continued to go in under existing permits and transfers.¹⁶ This rulemaking was on-hold for an extended period of time, at least in part awaiting completion of the USGS-OWRD groundwater study, and then the rulemaking process itself experienced significant delays. After this long road, issuance of the Proposed Rules is a major step towards finally addressing the over-pumping and providing a more sustainable future for the basin and we urge the agency to move forward without delay.

Thank you again for your work on the Division 512 rulemaking process and for consideration of these comments.

Sincerely,

/s/ Lisa A. Brown

Lisa A. Brown
Staff Attorney
lisa@waterwatch.org

¹⁶ See e.g.: <https://southernoregonbusiness.com/departments-cautions-against-further-groundwater-development-in-the-harney-basin-as-data-indicate-groundwater-is-being-depleted/> (visited 8-12-2025). OWRD Press Release titled “Department Cautions Against Further Groundwater Development in the Harney Basin as Data Indicate Groundwater is Being Depleted” (July 2, 2020).

Return public comments by August 7, 2025 via email or mail to the Water Resources Department

PROPOSED HARNEY BASIN GROUNDWATER POLICIES – WRITTEN COMMENT FORM

This written comment form can be used to help you formulate effective written public comments for the Division 512 Harney Basin Program Rules being proposed by the Oregon Water Resources Department, which will be used to manage and regulate groundwater use in the Harney Basin. The questions provided in this form address various aspects of the rules. Each question includes space to write your answer and some questions include options for you to consider. Reach out to Harmony Burright if you want help talking through or recording your comments (541-846-8863 / harmony@saltandfresh.solutions).

Public comments and related materials must be received no later than **August 7, 2025 at 5pm:**

By Email: WRD_DL_rule-coordinator@water.oregon.gov

By Mail: Kelly Mainz – Rulemaking Coordinator
Oregon Water Resources Department
725 Summer St. N.E. Suite A
Salem, OR 97301-1271

Your Name (required): LC3L Properties, LLC Tyler Ranch
Your Email (optional): _____
Your Phone (optional): _____
Note: All personally identifiable information may be made public. Please do not include this information if you do not want it included in the public record. A first name and last initial must be included to be considered.

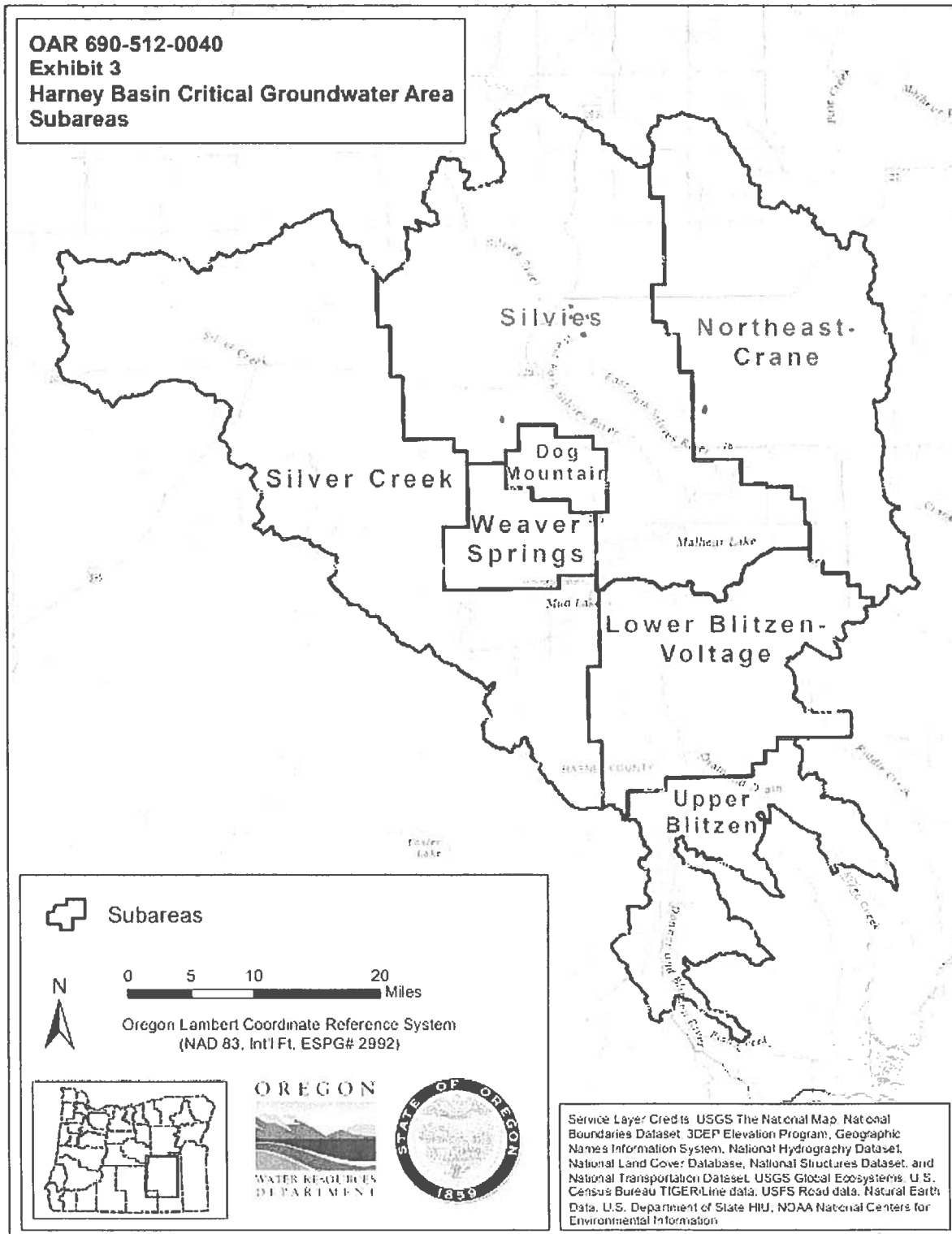
Please check all interests that apply to you:

☒	I have at least one well that supplies groundwater to my home for domestic purposes.
☒	I have at least one well that that supplies groundwater to my livestock.
☐	I have at least one well that supplies groundwater to a non-farm business (e.g., store).
☒	I irrigate/grow crops with groundwater in the Harney Basin.
☐	I have a groundwater fed spring on my property that is important to me.
☒	I value groundwater contributions to the environment (e.g., springs and native vegetation).
☒	I value fish and wildlife in the basin, including those that benefit from groundwater.
☒	I use agricultural products that are produced with groundwater.
☒	I value the economic contributions of agricultural operations that use groundwater.

Question 1. Please tell us about yourself and describe why groundwater is important to you. If you use groundwater, describe how you use it.

Own/operate a ranch in the Harney Basin. Groundwater is a fundamental part of the ecosystem & economy. It provides drinking water for us, the animals, irrigates crops ect.

Question 2. If you use groundwater in the Harney Basin, mark with a color dot on the map provided where you use groundwater (this can be a rough approximation).



Question 3. The Water Resources Department proposes to designate the area in the map outlined in black as a **Critical Groundwater Area**, which would give them the authority to regulate or curtail/reduce groundwater use. Do you have any feedback on the boundaries or the basis for designating a Critical Groundwater Area described in the **Division 10 report**? (See 609-512-0041 in the proposed rules)

Weaver Springs and N'E Crane are the two subareas that have experienced significant static water declines making them the critical groundwater area. The other 5 subareas haven't seen substantial drops in static water levels. Harney County was in a severe drought during most the static water measurements. The last 3 years have been wet years, giving the aquifer a chance to recharge. The regulation/reduction of groundwater use will impact the Harney Basin permanently.

Question 4. The map on the previous page shows the seven proposed **subareas** that the Department will use to regulate groundwater use (with different levels of regulation for each area). Based on your knowledge of the basin, are there any changes you would suggest to the boundaries? Draw them on the map and describe the reason below. (See 609-512-0041 in the proposed rules)

The proposed boundaries create generalized areas. It doesn't allow for the various aquifers found within the boundaries. A well by well static measurement shows which well is experiencing the biggest drops on a yearly basis. Not a proposed boundary line for a subarea, which may or maynot include problem wells.

Question 5. Please describe **groundwater conditions** where you are and what changes in groundwater levels or other groundwater changes you have observed in the last decade. If you have not observed any changes, please note that. You are also welcome to note any questions you have.

The wells in your "Silvies" subarea haven't seen substantial drops. They are relatively stable. Our wells located w/in the "N'E Crane" subarea have had declining & rising static water measurements. However the trend shows an overall decline.

Question 6. If you have been or expect to be **impacted by changing groundwater conditions**, please describe how you have been impacted.

We really haven't been impacted. The proposed regulations could change that.

Question 7. The Water Resources Department proposes to achieve the **groundwater management goal** of durably stable groundwater levels (0 feet per year of decline) by the year 2058 for the entire basin by curtailing groundwater use in 6-year intervals. Do you have feedback on the groundwater level goal and target groundwater level trend? (See 609-512-0041 in the proposed rules)

☐	I support the groundwater management goal and target groundwater level trend as proposed.
☐	I support the target groundwater level trend, but I would like to see more time allowed to achieve the goal. Year achieved:
☐	I support the target groundwater level trend, but I would like to see the goal achieved in less time on a quicker timeline. Year achieved:
☐	I think minor declines are acceptable and should be allowed. Acceptable amount of decline (in total feet or feet per year):
☐	I would like to see groundwater levels come back up or recover. Desired amount of recovery (in feet):
☒	I would like to be able to see groundwater levels be allowed to fluctuate between certain levels (+/- within a certain "band" of acceptable declines)

Groundwater levels aren't a constant. It fluctuates w/ weather cycles & the surrounding ecosystem.

Question 8. The proposed **initial allocation** (duty) for groundwater irrigation rights is 2.5 acre feet of water per acre for acres that were irrigated (wetted acres) sometime between 2020-2024. What feedback do you have on this proposal? (See 690-512-0060 in the proposed rules)

☐	I support the initial allocation of 2.5 acre feet for groundwater irrigation rights.
☐	I think the initial allocation should be greater than 2.5 acre feet. Proposed amount:
☐	I think the initial allocation should be less than 2.5 acre feet. Proposed amount:
☐	I support that wetted acres should be calculated based on use between 2020-2024.
☒	I think wetted acres should be calculated based on a different time period. Suggested time period: <i>10 yrs</i>

In subareas w/ substantial static water level declines, a 2.5 acf could be a start for the Jr water right users. Sr water right users should have the right to their full allocated rights to begin w/.

Question 9. The proposed **initial allocation** for municipal or quasi-municipal groundwater rights is 110% of water equal to 110% of the greatest single year in the previous five-year period. What feedback do you have on this proposal? (See 690-512-0060 in the proposed rules)

The proposed allocation will determine what growth can happen if any, essentially, paralyzing the community.

Question 10. The proposed **permissible total withdrawal (PTW)** for each of the seven subareas is described below. This is the amount of water that “represents the amount of water that the Water Resources Department has determined can achieve the target groundwater level trend by 2058. The Department may not reduce groundwater pumping to a value less than the permissible total withdrawal.” Highlight your feedback about the level of reductions for each area below. A **memo** produced by the Department explores a different allocation between the Lower Blitzen-Voltage area and the Northeast-Crane area. What additional feedback do you have on these proposed levels of groundwater use (PTW) and reductions? (See 690-512-0050 in the proposed rules)

Weaver Springs	Lower Blitzen-Voltage	Northeast-Crane	Silver Creek	Silvies	Dog Mountain	Upper Blitzen
PTW: 4,800 afy	PTW: 8,300 afy	PTW: 35,000 afy	PTW: 15,200 afy	PTW: 21,200 afy	PTW: 4,200 afy	PTW: 100 afy
75% reduction from 2018 use	39-40% reduction from 2018 use	34% reduction from 2018 use	27-28% reduction from 2018 use	15-16% reduction from 2018 use	9-10% reduction from 2018 use	0% reduction from 2018 use
Too much?	Too much?	Too much?	Too much?	Too much?	Too much?	Too much?
Too little?	Too little?	Too little?	Too little?	Too little?	Too little?	Too little?
Just right?	Just right?	Just right?	Just right?	Just right?	Just right?	Just right?
I don't know	I don't know	I don't know	I don't know	I don't know	I don't know	I don't know

The PTW have been determined from a model. Models are only as good as the inputs and assumptions used. The PTW should not be set. The PTW should be dependent on the changes seen in the water levels. The reductions should start w/ the most Jr. water rights that show the greatest static water level drops. A stable water level could be reached before the modeled PTW. Any water rights relinquished will have irreversible consequences

Question 11. The reductions in each subarea will be phased in over time following a **proposed reduction schedule**, with the largest percent of reductions made initially and later reductions phased in over 6 year intervals based on existing groundwater level trends to ensure that groundwater levels are on track to achieve the groundwater management goal. Reductions will be based on priority date using the initial allocation as a starting point. What feedback do you have on the proposed reduction schedule? (See OAR 690-512-0070 in the proposed rules).

	2028	2034	2040	2046	2052	2058
Other Subareas	40% of total reductions	30% of total reductions	15% of total reductions	10% of total reductions	5% of total reductions	Stability achieved
Weaver Springs	75% of total reductions	25% of total reductions	--	--	--	--

☐	I support the proposed reduction schedule (percent reductions and implementation timeframe).
☐	I would like to see higher reductions implemented in the near-term.
☐	I would like to see lower reductions implemented in the near-term.
☒	I would like to see 20% reductions implemented at each step.
☐	I would like to see all reductions implemented immediately.
☐	I would like to see a shorter implementation timeframe (achieve stability sooner).
☐	I would like to see a longer implementation timeframe (longer period to achieve stability).
☒	If groundwater levels have not been declining in a subarea, I would like to see a grace period during the first 6-year period where no reductions are implemented.

These #'s are produced from models. The subareas w/ significant water level declines should proceed w/ careful consideration given to each well before reductions are issued. Each water right reduction will have an economic impact. No reductions should occur once water levels are stable. The CREP program should be more flexible, making it a more viable option for voluntarily relinquishing your rights. Allowing water rights to be relinquished on a parcel not an entire water right. Also representing the true economic impact seen.

Question 12. The Department is proposing to follow an **adaptive management approach** for implementing reductions informed by groundwater level trends. If groundwater level trends are "on track" then no adjustments would be made. This approach allows the Department to make changes to the reductions to achieve the goal. Reductions could be adjusted up or down depending on how groundwater levels change over the previous 6 years. What feedback do you have on the adaptive management approach? (See 690-512-0080 in the proposed rules)

A flexible approach is better. However the need to be careful and go slowly is important.

Return public comments by August 7, 2025 via email or mail to the Water Resources Department

Question 13. By 2028 all groundwater rights holders will be required to install a flowmeter to **measure** groundwater use and will be required to **report groundwater use** on an annual basis. A flowmeter must be installed on this timeframe in order to continue to legally use groundwater under existing rights. What feedback do you have on this requirement? Will you seek any assistance to meet this requirement? (See 690-512-0110 in the proposed rules)

If a water user has a high chance of being cut, they shouldn't be required to spend thousands on equipment that won't be used or needed. The Dept should have an idea what wells will be affected and give the water user a chance to prepare. We would seek assistance to meet this requirement. Have 7 wells that currently don't ^{require} flowmeters.

Question 14. Under the proposed rules the only **new uses** that will be allowed are those uses that do not require water rights (i.e., permit exempt uses), such as domestic and stockwater wells, and non-consumptive geothermal uses. What feedback do you have on the proposed new uses? (See 690-512-0030 in the proposed rules)

They should limit these. They could cause issues by pumping groundwater.

Question 15. Please describe what **personal impacts** you expect these rules might have on you (either positive or negative).

All negative. Water rights on irrigated cropland could be lost, after spending hundreds of thousands to develop them. So water rights will be restricted.

Question 16. Please describe what **basin impacts** you expect these rules might have on the broader basin or community (either positive or negative). (See the Fiscal Impact Statement).

The power company will struggle - increased rates. Local businesses will close. These rules have the potential to create a bigger negative impact than the spotted owl. If you ruin agriculture, there will be nothing for industry in the valley.

Question 17. Describe actions that you would like the Department to consider that could **mitigate or minimize anticipated impacts** to you or the basin. This could include support for proposed policies or changes to the proposed policies.

They could let Jr. water rights to irrigate until July. Allowing at least one crop to grow w/ minimal ground water use.

Question 18. When you look into the future, what is most important to you? What do you hope to see for yourself and for the basin? What are you most concerned about?

I hope the Harmony Basin can still be an economically viable community. Agriculture is the main industry supporting this community. These regulations can easily cripple the Hg. economy. After these regulations, will there be opportunities for growth? (New businesses, industries) Will the utility companies survive? Or will these regulations turn this basin into a "ghost town"?

Question 19. What else is important for you to communicate to the Department?

They should fire Ivan Ball. Every meeting I attended he kept saying "finish your water rights." This caused many to waste thousands of dollars on water rights, that are now going to be taken.

Question 20. Do you have any other feedback on the proposed rules or groundwater management?

There is a huge uncertainty w/ the groundwater users. Do you continue to invest in more efficient ways to irrigate? Also groundwater users should have a grace period to "reset" the land back to dry land grasses. Curtailing an explosion of weeds & invasive grasses.

For questions about the proposed rules, please contact Kelly Mainz at the Water Resources Department (WRD_DL_rule-coordinator@water.oregon.gov or 971-718-7087).

For assistance with developing effective written comments, please reach out to Harmony Burright with the High Desert Partnership who can help (541-846-8863 or harmony@saltandfresh.solutions).

HARTT Laura A * WRD

From: Longfello Ragoczy <bigsword13@ymail.com>
Sent: Tuesday, June 17, 2025 7:00 AM
To: WRD_DL_rule-coordinator
Subject: Harney County Citizen Public comment

Some people who received this message don't often get email from bigsword13@ymail.com. [Learn why this is important](#)

Dear Kelly Mainz,

1. The installation of any/all meters on wells in the Harney Basin area should be mandatory for pivots, land lines and/all wells used for irrigation on non-residential lots over 15 acres in size.
2. Installation of water meters for Commercial/Industrial use of water wells should be mandatory.
3. Residential Domestic water wells for household use should always be exempt from meter installation on wells.

Thank you!

Sincerely,
Concerned Harney County Citizens

[Sent from Yahoo Mail for iPad](#)

July 28, 2025

Oregon Water Resource Department

725 Summer Street NE, Ste A

Salem, OR 97301

RE: Comments on the proposed Division 512 Rules

Thank you for the opportunity to provide comments on the proposed Division 512 Rules.

My name is Lorissa Singhose. I am a Farmer and Rancher in Riley, OR. My husband and I moved to Riley 19 years ago because it provided an opportunity to pass on our passion for farming to our children and grandchildren. I am a mother of 4. All 4 of my children are involved in the day-to-day farming and ranching operations. 3 of my children are adults and are on the farm full time with the youngest in high school and can't wait until he can farm full time. My children have financially invested in the farming and ranching operations. This farming lifestyle is everything. It's our business, our livelihood, our investment, our home, our family life, our social life, our community. As written, the proposed Division 512 rules, would destroy everything we have worked our whole life for. We could lose our farm, our home, our property will be severely devalued and we will lose the equity we have built over the years. We have been responsibly using water within the term of our permits. We believe in being good stewards of our resources. We strongly believe we can sustainably manage groundwater and voluntarily reduce groundwater use without putting any farms out of business in our area. I have been involved in the Division 512 rules for 10 years. I was on the Study Advisory Committee, the Rules Advisory Committee, and been a part of the local Harney Basin collaborative. I have spent the last 10 years listening, learning, and educating myself to better understand the groundwater of Harney Basin and Oregon water policy.

Harney Basin is not one groundwater reservoir

In the USGS report, the term groundwater reservoir was never used. They said it was hydrologically connected, but never implied it was one groundwater reservoir. There can be several Groundwater Reservoirs within a basin and still be hydrologically connected. OWRD has delineated the entire Harney Basin as a single groundwater reservoir. This simplified definition of a groundwater reservoir, does not consider different aquifer characteristics, like geology, recharge and discharge areas, groundwater levels and site-specific data. The implications of this

over simplified use of the definition could have devastating consequence for the basin and the rest of the state. This would allow the department to take a few critical wells in a portion of a water basin and use them to regulate water use in the entire basin, which is irresponsible water management.

Proposal: The Department should recognize the different aquifer characteristics of each subarea within the Harney Basin to define groundwater reservoirs while still recognizing that they are hydrologically connected.

Harney Basin is overallocated, but not overdrawn

If the department want to call the basin one Groundwater reservoir, then overdrawn criteria cannot be used to designate the basin. The Department severely overallocated the Harney Basin, but fortunately the Harney Basin does not meet the overdrawn definition as defined in law. Furthermore, only portions of the basin have wells that have declined excessively or are excessively declining.

ORS 537.730 Designation of critical groundwater area

(a) Ground water levels have declined excessively or excessively declining

(e) Ground water is being or about to be overdrawn

As defined in OAR 690-008-0001

Declined excessively as lowering the water level greater than 50'

Excessively declining as downward trend of 3' or more a year for at least 10 years

Overdrawn as exceeds the average annual recharge to the groundwater

Means pumpage is greater than the recharge.

As stated in the Groundwater report for the Harney Basin Critical Groundwater Area Rulemaking, that the Harney basin estimated pumpage is 144,800 Ac/ft a year and the annual estimated recharge is 173,000 Ac/ft a year. By definition the pumpage is less than the recharge and does not fit the criteria for overdrawn.

Proposal: Limit Groundwater use to the current pumpage to prevent the basin from being overdrawn. Focus critical groundwater area designation on the portions of the basin where wells have declined excessively or are excessively declining.

Silver Creek Subarea is its own groundwater reservoir

There are different Groundwater reservoirs within the Harney Basin that are only hydrologically connected because they all flow toward the same area. Groundwater Reservoirs boundaries can be established from evidence and reasoning. As stated in OAR 690-10-0130 the boundary shall

indicate which groundwater reservoir either in whole or in part. The boundary of a critical groundwater areas may be reasonably inferred or ascertained: by physical natural boundaries, hydrological conditions, recharge/ discharge areas, or administratively. The Silver Creek subarea has its own recharge area. It has is own distinct characteristic that set it apart from the rest of the basin. There is enough information about the distinct characteristics of the groundwater to consider it its own groundwater reservoir. The upper portion of the Silver Creek subarea is modern water and recharges from precipitation and stream flow in the uplands. The groundwater chemistry and quality of groundwater, the geology and subsurface are distinct from other parts of the basin. The Silver Creek subarea was providing minimal recharge to Weaver Springs before that area was over allocated and over pumpage of the groundwater in that area, which created a cone of depression that is now drawing groundwater from surrounding areas, that have led to declines. There is enough information to show that these are hydrologically distinct and should be managed as different areas.

Proposal: Designate the Silver Creek subarea as its own groundwater reservoir to develop targeted management objectives and actions, allow for effective voluntary agreements, and to stop transfers from other subareas that could be considered “same source” unless different groundwater reservoirs are delineated.

Silver Creek Subarea is not overdrawn

Silver Creek subarea is not overdrawn and is not about to be overdrawn if Weaver Springs is addressed as a distinct area. There are no viable permits that can be developed in this area. The irrigators in the area have not used their full allotment of water because they don’t need it and are responsibly using their water rights. Using the paper water rights allotment to mislead the commission into believing that we will be overdrawn is an attempt by the Department to further their policy position to the detriment of our community.

Western Water budget region -Pump 42,500 Ac/ft, Recharge 47,000 Ac/ft (4,500> recharge) reduce Weaver springs by 14,400 Ac/Ft then recharge would be about 19,000 ac/ft greater than pumping.

Realistically paper water rights will never be fully utilized. The full allocated amount has never been historically used, no new development can occur, and with the regulating of Weaver Springs the Silver Creek subarea will never be overdrawn.

Proposal: The Silver Creek Subarea be removed from the Critical Groundwater area designation.

Silver Creek Subarea has not met the criteria for a Critical Groundwater area designation

Groundwater levels in the Silver Creek subarea are reasonably stable as per the definition in OAR 690-008-0001. The Department's own data show that declines in this area have been minimal. The Groundwater Level Trends analysis from 2024 show that median overall decline is -2.5 to -3.5 Ft and median rate of decline is -0.4 ft/yr. These trends are well within the range of what is considered reasonably stable by the department. No available data shows that this area has met the criteria for a critical groundwater areas designation. If Weaver Springs is treated as a separate area, which it should be, then Silver Creek is not over drawn or about to be and has not declined excessively or excessively declining. This shows that the Silver Creek Subarea does not meet the requirement of a Critical Groundwater area designation per OAR 690-010-0120.

Proposal: The Silver Creek Subarea be removed form the Critical Groundwater area designation.

Conditions in the Silver Creek Subarea are reasonably stable

The Department's own data show that declines in Silver Creek area have been minimal. The Groundwater Level Trends analysis from 2024 show that median overall decline is -2.5 to -3.5 Ft and median rate of decline is -0.4 ft/yr. These trends are well within the range of what is considered reasonably stable by the department. The departments model results showed that without reductions this area would achieve "near stable" groundwater levels (defined as ~0.1 ft/yr of decline). At this rate it would take 300 years to reach the permit condition of 25' decline. To hit the critical condition of > 50' decline is would take 600 years. That is if the rate continues. When I talked about 7' in 70 years was .1' a year average decline. I was told by OWRD that I was incorrect in my yearly decline rate, because the water showed greater declines in the earlier years and the rate of decline slowed toward the end of the 70 years, modeled at full pumpage. If this is so then wouldn't that show the rate of decline will slow on its own over time without regulations?

As stated in ORS 537.525 Reasonably stable groundwater levels be determined and maintained. The data clearly shows that the Silver Creek Subarea is reasonably stable by definition.

Proposal: The Silver Creek Subarea be removed from the Critical Groundwater Area designation. The Department retain the language "Reasonably Stable".

Department lacks a legal and technical basis for regulation in the Silver Creek Subarea.

The Silver Creek Subarea does not meet the criteria of Critical groundwater area designation as defined in ORS 537.730. They lack the legal authority to designate an area critical without substantial evidence that justifies the designation according to ORS 690-010-0130. The department does not have the information to backup this designation. The Silver Creek Subarea does not meet the criteria for a Critical Groundwater Area Designation as defined in OAR 690-008-0001. Silver Creek Subarea is not declining excessively or excessively declining and is not overdrawn. There are no wells that have declined excessively or excessively declining.

I have 20 wells that I have to take yearly March static water levels measurements. The 2025 measurements show that 19 of the 20 wells all went up from the previous year. Many went up by feet. 3.2' to .5' increases. Average was over 1 ft of increase.

I have static well conditions and 8 of those are at the starting static or above. One as much as 13 feet above. Range from 0-13' above.

The Groundwater Level Trends analysis from 2024 show that median overall decline is -2.5 to -3.5 Ft and median rate of decline is -0.4 ft/yr. Which by definition is Reasonably stable.

Western Water budget region -Pump 42,500 Ac/ft, Recharge 47,000 Ac/ft (4,500> recharge) reduce Weaver springs by 14,400 Ac/Ft then recharge would be 19,000 ac/ft greater than pumping.

Proposal: Remove Silver Creek Subarea from the critical Groundwater areas designation. I urge the department and Commission to adhere to existing statues and rules rather than pursuing unprecedented groundwater reductions through regulations that lack defensible and technical basis.

Uncertainty around spring data and modeled relationship with groundwater use

The department has led the RAC to believe that springs are declining, but do not have the data to support this claim. They have not responded to comments or provided a written basis for this claim. When I asked for historical data used to determine spring declines. I was not provided any information, but I was referred to the USGS hydrologic report and the groundwater study report. What I found in the reports are shown below.

As stated in the report Groundwater resources of the Harney basin, Southeastern Oregon, (pg. 76) "no measurable decrease in flow from springs in the Warm Springs Valley was observed between the early 20th century (Piper and others, 1939) and the period of this study; however, long-term records of flow on which to robustly calculate trends also are lacking."

As stated in the report Hydrologic budget of the Harney Basin groundwater system, Southeastern Oregon, (pg.35) "Piper and others (1939) noted that temporal fluctuations in discharge among the five largest springs in the Warm Springs Valley range from about 40 to 100 percent and likely result from changes in the spring pool stage from intermittent irrigation diversions and multi-year fluctuations in precipitation."

Also stated in hydrologic report, (pg. 36) "In Warm Springs Valley (south of the Weaver Springs/Dog Mountain pumping area) July 2017 springflow measurements totaling 23,500 acre-ft/yr are within 11 percent of the 1931 estimate reported by Piper and others (1939) (26,500 acre-ft/yr). within 20 percent of the 1907-2017 mean, and within the range of early 1900s measurements at 6 of the 7 springs measured. Considering the variability noted by Piper and others (1939) and springflow measurement accuracy of about 15 percent (Oregon Water Resources Department, 2020), differences between 2017 and the early 1900s springflow in the

Warm Springs Valley likely reflect climate variability and (or) management of irrigation diversions rather than nearby groundwater development.”

If the department recognizes springflow accuracy of 15 percent, then the department recognize that 11 percent difference would imply no measurable decline. If the Hydrology and groundwater resources report states that there are no measurable spring declines since the 1930’s, then how did the OWRD model spring declines in the Warm Springs Valley? There is no historical data to put into the model to show declining results. Where did those results come from? How did the department generate data that supports its position?

The department has led us to believe that the public welfare, health and safety is being affected by the Warm Springs Valley springs and should be used to regulate water rights, but the data show that there is no measurable decline at these springs. If so, then there is no loss to the ecological value, no ecosystem loss and no lowland ET being lost, as no measurable declines are occurring since the 1930’s.

OWRD cannot regulate a Water Right in favor of something that does not have a water right. For example, unpermitted springs and native vegetation. The Department cannot regulate a Water right for the benefit of unpermitted springs or Natural ET that do not have a water right. OWRD is using springs to justify regulating the Groundwater of the Silver Creek subarea. The department has not considered all factors that could affect spring discharge. The only thing they have focused on is pumping. They have not discussed or research the effect of drought and precipitation, the geology of the springs and how underground shifts and fault lines could change the flow of a spring. They have not considered the effect the Brothers Fault Zone could have on the Warm Springs valley springs. The department has admitted that they don’t have enough data for the springs to be used in the model. In the slide presentation (Rac#14) the following statements were made:

The model has some uncertainty (specifically Warm Springs Valley)

Not enough information to model effectively.

Model is only as good as the inputs we have: limited historical spring discharge measurements.

Less confident in calibration to springs discharge and natural ET.

Proposal: The Department does not have legal authority to regulate groundwater users in favor of unpermitted uses. There is no data to support the claim that Warm Springs Valley springs are declining, so the department should not use springs to regulate groundwater.

The Department has drastically changed their approach to Regulate Silver Creek Subarea and the Harney Basin.

For most of the rulemaking process the Department was proposing no reductions in the Silver Creek area and modeling results showed that without reductions this area would achieve “near Stable” groundwater levels (defined as ~0.1 ft/yr of decline). The Silver Creek area meet the definition of “reasonably stable”, but the department is still proposing a 28% reduction from

estimated pumpage. The department initial approach to not regulate all subareas is noted in the memo, Explanation of Draft Harney Basin Critical Groundwater Area Map, found on the OWRD website, "Please note that while there are 15 proposed subareas, the department does not intend to propose curtailment in all of them." Also noted in the memo as discussed in RAC#2. Curtailment: "..... goal of reducing Groundwater level declines within portions of the groundwater reservoir where declines are most severe." Same memo states that the Department will discuss at RAC#3 ".....The department does not anticipate curtailment in all Subareas." The departments intention to not regulate all subarea, just the critical areas, was a common understanding at the RAC meeting until recently. There was no discussion, explanation or reason given for the sudden change. What caused this drastic change? There was no new data to base this sudden change on. I started seeing this change in regulations occur at RAC #12. This was late in the process for the Department to make a complete shift in their approach to regulations in the Basin, with no new data to base it from.

Department has a responsibility to protect Water Rights

As required by ORS 537.525 the Department is required to protect existing water rights.

When the department issues a permit, they have a set of criteria they have to follow to ensure public welfare, safety and health as stated in ORS 537.621. When the department issues a permit, they are assuring that the criteria is met and the permit is a benefit to the public. By issuing a permit the department has insured it is a benefit to the public. By taking back a water right/ or regulating it is an admission by the department that the issuing of permits did not insure the public wellbeing, then the department is negligent and should be held accountable. This negligence has done unrepairable harm to the Harney basin. Now their unlawful proposed regulation of non-critical areas will do even more harm.

Public welfare, safety and health has been used by OWRD to defend their position. The interpretation of this term may not actually be protective of the public, but do more harm than good.

OWRD has only used public welfare, safety, and health to address springs and natural ET. They have failed to discuss or consider other aspects. They have not considered the negative environmental impact of drying up farmland. Soil degradation, loss of soil quality and nutrition, erosion, run off, loss of ecosystems, wildlife habitat, and the major loss of carbon sequestering. Harney basin would loss 19,000 ac to 29,000 ac of irrigated land. The Harney County economy will be devastated by impacts the proposed Division 512 rules will have. Effecting schools, healthcare, and the general wellbeing of the citizens who could lose everything or struggle to get by. A \$61 million economic loss a year, 320 jobs with a \$18 million labor income loss is too much for this community to survive. There will be an extreme increase in our electricity rates. These rules have not minimized the impacts to small business that is required by ORS 183.330 and ORS 183.540. The proposed rules will destroy our local economy, bankrupt local businesses, devastate family farms and Ranches.

Proposal: The department remove subareas that do not meet the criteria for a Critical Groundwater Area Designation, which are Upper Blitzen, Lower Blitzen- Voltage, Silver Creek, and Silvies Subareas. This will lessen the economic impact to the community and be adhering to Oregon water law and protecting Water Rights.

Department has a responsibility to engage in Voluntary Joint action

Clearly stated in ORS 531.525 a preference for voluntary joint action with groundwater users, rather than relying on the police power of the state.

Proposal: That the state work with groundwater users to establish voluntary agreements.

There is enough information to delineate subareas

Four of the seven subareas do not meet the criteria for the Critical ground water area designation. Declined excessively or excessively declining criteria is only met in very specific localized areas of the basin, as shown in figure 3 and figure 4 of the Groundwater report for the Harney Basin Critical Groundwater Area Rulemaking (Boschmann, 2024). It shows that the areas that meet this decline are in the Weaver springs, Dog Mountain and the NE Crane subareas. Which means that Upper Blitzen, Lower Blitzen-Voltage, Silver Creek, and Silvies Subareas do not meet any criteria for a Critical designation under Oregon Law ORS 537.730 and should be removed from Proposed Division 512 rules.

Water law says that part of a Groundwater reservoir can be designated as critical. OWRD has chosen to include subareas of the basin that do not fit the criteria, thus putting unjustified regulations on areas of the basin. This is not dictated by law, but chosen by the department. Why would the department want to put undue hardships on a community that is not necessary?

Proposal: Remove Upper Blitzen, Lower Blitzen-Voltage, Silver Creek, and Silvies Subareas from the Critical Groundwater Area Designation.

Permissible Total Withdrawn are set too low and restrictive

Proposal: The PTW are too restrictive and should be reassessed to better reflect what is really happening in the Harney Basin according to data. The water laws should be used and they were intended. Four of the seven subareas do not fit the definition of Critical and their PTW numbers should be removed from the proposed rules.

Durably Stable is not an acceptable term to use to regulate

The department should use Reasonably stable, as used in their own rules, not create an entirely new and more restrictive definition. Under the new updated Division 8 allocation rules just adopted less than a year ago, water is considered reasonably stable if the rate of decline is .6' a year and a total decline of 25'. This is updated water policy that is considered a sustainable use of the groundwater. Yet the department has chosen not to use this standard, but wants to

enforce stricter regulations on the Harney Basin. This will cause more unnecessary hardships. I question the legality of the use of a term to regulate groundwater that is not defined in statute.

Why has the department taken a 0 decline to define reasonably stable in the Harney Basin, even in areas that show less than 0.6 ft/yr of decline? Why is the basin being held to higher standards than set for the rest of the state. Does this not give the department permission to step outside water policy and make their own rules?

Proposal: The department use the legal terms as provided in statute. Retain “Reasonably stable” language to define the groundwater of the Harney Basin.

Water Resource Department should be held accountable

The Department should be held accountable for their negligence in over allocating the Groundwater of Harney Basin. As noted in the Groundwater resources of the Harney Basin, SE Oregon report “As of 2015 more than 287,000 acre-ft of maximum allowable annual groundwater used had been permitted, exceeding a 1968 estimate of the total annual Groundwater recharge for the entire Harney Basin (260,000 acre-ft) (Robison, 1968).” Water resource had the data/ informational report that showed them that they were over allocating the basin. Part of the permit process is for the department to ensure there is sufficient water available. Their job was to protect the resource and the people. They were negligent in their duty to protect the resource and the people of Harney County. The department has admitted they created this problem, and should be held accountable. This should not be allowed to happen in other basins.

The Department should set up a buy back program. Should the Department take away or regulate water rights they should have to financially compensate for it. Water users should not be financially devastated for the mistakes of the Department. The Department should be held accountable for their negligence.

Other Comments

The springs discharge in the Warm Springs Valley is considered to be ancient water, 8,000+ years old, anywhere along this long flow path disruptions in the flow could occur. Water in Riley is Modern (meaning recharged after 1950) at pumping depth of at least 150'. The department has failed to discuss or consider other factors that could affect a spring other than pumping. The Department never discussed or researched effects of drought and precipitation, geological factors like shifts in the subsurface that could cause spring openings to be restricted. Many questions about springs were asked, but never received any response.

To our knowledge, no domestic wells in the Riley area have lost access to groundwater or have been forced to deepen due to declining groundwater levels. No concerns have been publicly raised by domestic well users or stockwater users in this subarea. In the Riley area, there are no domestic wells at risk of going dry. The model predicted 4 could go dry. The Department could not give me those wells, so I looked them up on the website. What I found was that only one

well had the potential to have issues. The OWRD website map shows it to be in an irrigated field. No house around. This well is no longer in use.

The Silvies, Lower Blitzen-Voltage, and the Upper Blitzen do not meet the criteria for a Critical Groundwater area designation. These subareas have enough information to delineate them from critical areas, and be seen as distinct areas, such as their own Groundwater Reservoir or subarea not Critical.

Silvies subarea has a median rate of decline of 0.3 ft/yr, with no wells meeting the excessively decline or declining excessively criteria. These trends are within the range of what is considered by the department Reasonably stable.

Lower Blitzen-Voltage subarea has a median rate of decline of 0.3 ft/yr, with no well excessively declining or declining excessively. The department considers these trends to be reasonably stable.

Upper Blitzen subarea has a median rate of decline of 0.2 ft/yr, with no wells excessively declining or declining excessively. These trends are considered reasonably stable.

The community has already engaged in conversations around conserving water. Many have already implemented water conservation practices. The community understands that we have to conserve water in order to preserve our way of life. The community is better equipped to manage water than a government agency, because our future depends on it.

Economic impact to the Harney Basin will have devastating effects. Division 512 rules have not minimized impacts to small businesses as required by law. They have unduly increased impacts, by imposing unnecessary regulations on parts on the basin that are not critical as defined by statute. The department has chosen to overregulate where laws do not require it.

I ask why does the department continue to justify the proposed regulations that do not follow statute and are not backed by substantial evidence? What is the motivation for overregulation that will destroy our local economy, bankrupt local business, devastate family farms and Ranches.

I urge the department and Commission to adhere to existing statutes and rules rather than pursuing unprecedented groundwater reductions through regulations that lack defensible and technical basis.

The people of Harney County deserve better than this!

Thank you for reviewing and considering these comments.

Lorissa Singhose

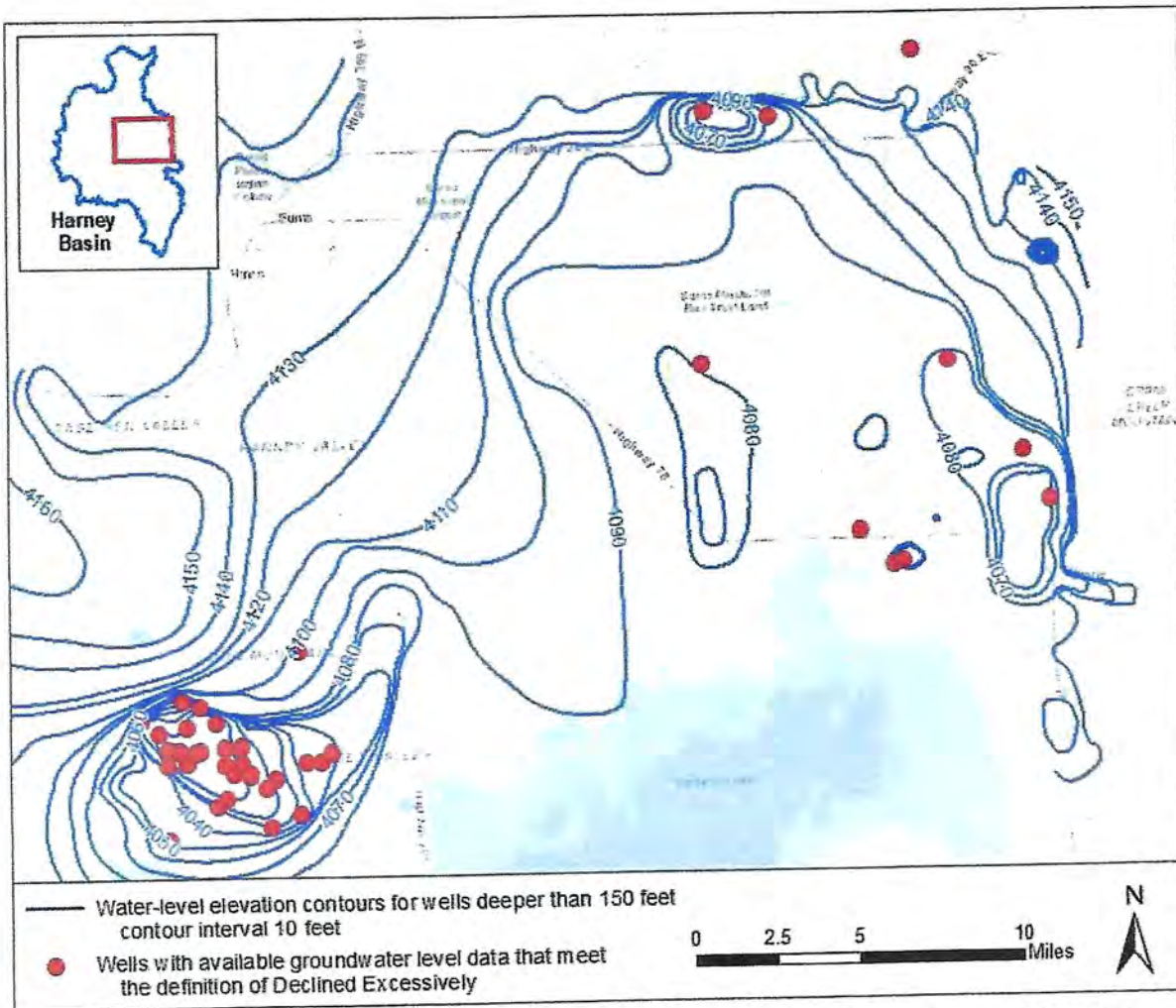


Figure 3: Wells with available groundwater level data that meet the definition of Declined Excessively as per OAR 690-008-0001(4)(d) as of April 2, 2024; Groundwater level elevation contours for wells deeper than 150 feet.

Table 1: List of wells with available groundwater level data that meet the definition of Declined Excessively as per OAR 690-008-0001(4)(d) as of April 2, 2024. *Wells located in Grant County not shown on Figure 3. Click each well log ID in the table to view hydrograph.

HARN0001028	HARN0001990	HARN0051233	HARN0051760	HARN0052003
HARN0001061	HARN0050179	HARN0051259	HARN0051765	HARN0052028
HARN0001094	HARN0050315	HARN0051272	HARN0051783	HARN0052064
HARN0001096	HARN0050362	HARN0051445	HARN0051791	HARN0052121
HARN0001097	HARN0050422	HARN0051448	HARN0051825	HARN0052170
HARN0001098	HARN0050516	HARN0051507	HARN0051836	HARN0052834
HARN0001318	HARN0050741	HARN0051586	HARN0051847	GRAN0051009*
HARN0001322	HARN0050766	HARN0051693	HARN0051871	GRAN0051271*
HARN0001323	HARN0050887	HARN0051694	HARN0051904	
HARN0001335	HARN0051146	HARN0051701	HARN0051970	

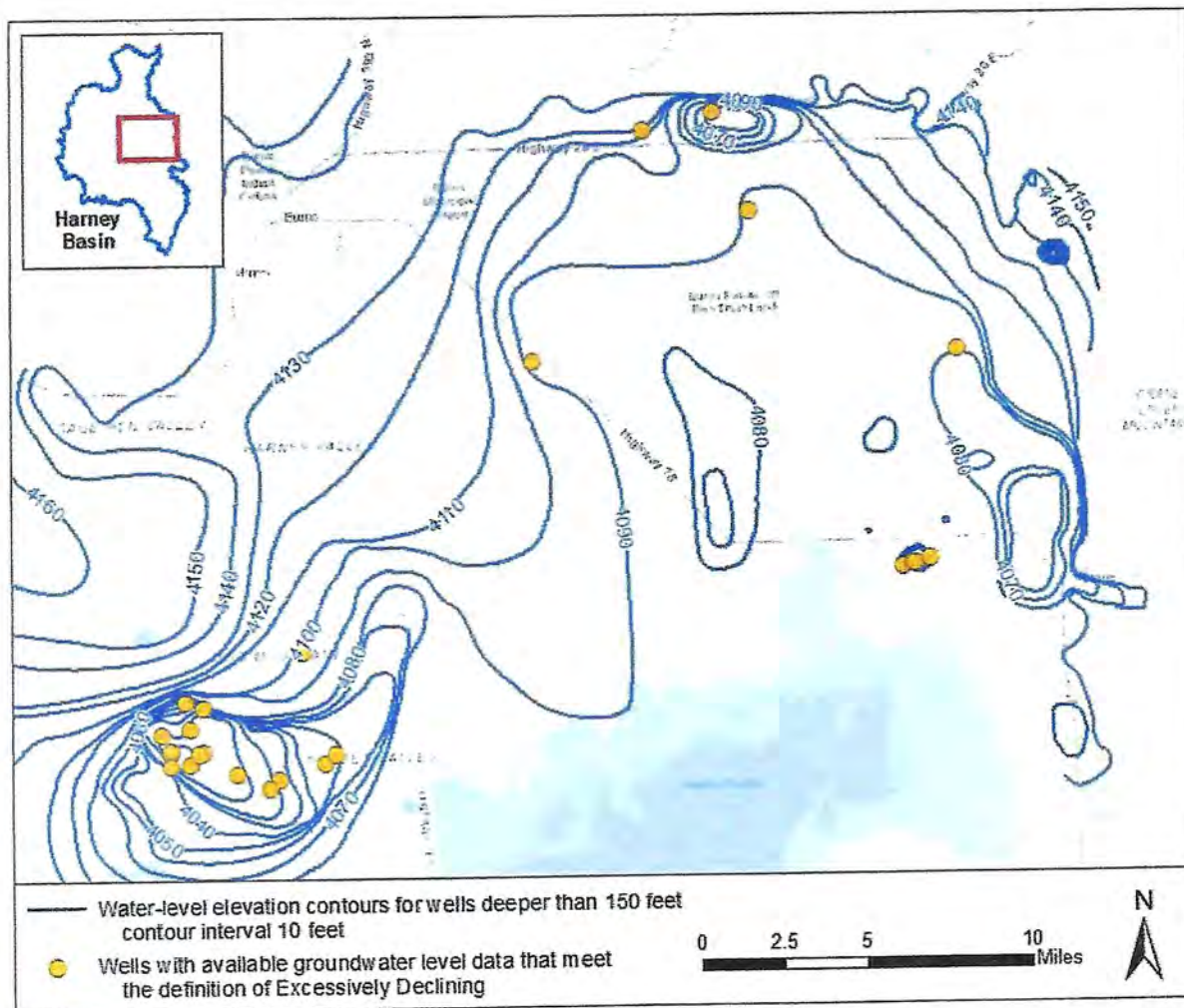


Figure 4: Wells with available groundwater level data that meet the definition of Excessively Declining as per OAR 690-008-0001(6)(b) as of April 2, 2024; Groundwater level elevation contours for wells deeper than 150 feet.

Table 2: List of wells with available groundwater level data that meet the definition of Excessively Declining as per OAR 690-008-0001(6)(b) as of April 2, 2024. Click each well log ID in the table to view hydrograph.

HARN0000901	HARN0050362	HARN0051272	HARN0051586	HARN0051701
HARN0001094	HARN0050516	HARN0051353	HARN0051587	HARN0051765
HARN0001096	HARN0051146	HARN0051445	HARN0051637	HARN0051783
HARN0001990	HARN0051233	HARN0051448	HARN0051693	HARN0051904
HARN0050315	HARN0051259	HARN0051585	HARN0051694	HARN0052050

HARTT Laura A * WRD

From: Lorissa Singhose <lsinghose@yahoo.com>
Sent: Monday, August 11, 2025 10:12 AM
To: WRD_DL_rule-coordinator
Subject: Division 512 comment
Attachments: Fig 3 and 4 for Comments Div 512.pdf; Comments on proposed Division 512 Rules-2.docx

Hi Kelly Mainz

I have attached my comments on the proposed Division 512 rules along with figures that are referenced in comments. Could you please provide a confirmation that you have received them.

Thank you,
Lorissa Singhose

MEINZ Kelly A * WRD

From: Lou Davies <davieslou196@gmail.com>
Sent: Wednesday, August 13, 2025 3:23 PM
To: WRD_DL_rule-coordinator
Subject: Proposed Harney Basin Groundwater Policies- Written Comment Form

[Some people who received this message don't often get email from davieslou196@gmail.com. Learn why this is important at <https://aka.ms/LearnAboutSenderIdentification>]

Name- Lou Davies

I have a water right.

Stop issuing drill permits for new irrigation wells.

Do not allow transfers from one sub area to another.

Our groundwater levels are dropping.

Allowing more drilling will damage all existing water rights.

By waiting until 2058 to reach your goals would in fact be letting the horse escape the barn before shutting the barn door. Why are you waiting so long. You should know if the ground water is still dropping in 5 years.

On question 8 of your survey you propose a 2.5 acre feet of water for land irrigated between 2020 and 2024. Any land irrigated before the 2020 -2024 as well as during that period should be treated the same.

Municipal and quasi-municipal groundwater usage should also be curtailed!

On question 10 of your survey. Do not wait until 2058 to do something! 5 years should be long enough to see positive improvements.

Flow meters should be installed on all irrigation wells.

Don't wait until 2058. Do something major now!

Thank you.

July 23, 2025

**Kelly Mainz – Rulemaking Coordinator
Oregon Water Resources Department
725 Summer St. N.E. Suite A
Salem, OR 97301-1271**

Subject: Lower Blitzen-Voltage Subarea Comments on Proposed Division 512 Rules

Dear Mr. Mainz,

Please accept these comments on behalf of the below signed individuals. Many of these individuals live in the Blitzen-Voltage Subarea or support businesses within the Blitzen-Voltage Subarea. We collectively request that the Department follow its existing policies and make a greater effort to limit the economic impacts of proposed groundwater reductions in this area. Specifically, we make the following requests for the Division 512 rules:

- Include the Upper Blitzen area with the Lower Blitzen area (especially if Subarea boundaries may affect transfers).
- Designate the area that is primarily recharged from the Steens Mountain uplands and the Donner Und Blitzen river as a distinct groundwater reservoir and establish distinct groundwater management goals based on current groundwater conditions and existing policies of the state.
- Remove the Blitzen-Voltage Subarea from the Critical Groundwater Area designation or, if it is designated, set the permissible total withdrawal to estimated recharge levels.
- Include the definition of “reasonably stable” and “overdrawn” from OAR 690-008-0001 in the Division 512 rules and apply it in a management context.
- Prevent additional transfers into the Blitzen-Voltage Subarea from other Subareas because it is not the same source.
- Identify in rule that regulatory reductions will not be made until wells are determined to no longer be “reasonably stable” or until decline conditions in permits are met or exceeded.
- Encourage voluntary reductions in groundwater use through the development of a voluntary agreement in this Subarea. The groundwater users in this area expect to bring a Voluntary Agreement forward to the Commission by December 2025.
- Specify the process by which the Department will consider local knowledge when making a determination of what constitutes “representative” wells for analysis. Actively partner with groundwater users to monitor groundwater levels and groundwater use and rebuild credibility and trust in Department data and science.
- Actively partner with groundwater users and others to better understand aquifer characteristics, the flow of groundwater, groundwater level changes, and the change in spring discharge over time (setting a baseline for measuring change).

Representatives of the Lower Blitzen-Voltage Subarea engaged in good faith in the Division 512 rulemaking process. Most of the questions asked still have not received answers from the Department and many of the concerns or suggestions raised were never meaningfully addressed. The representatives of this Subarea feel that the Department consistently took an approach of

devising, presenting, and defending its position without meaningfully involving the public and impacted groundwater users. The Department has been selective in the information it presents and considers. Furthermore, the Department has not taken steps to minimize the fiscal impact on small businesses as required by ORS 183.330 and ORS 183.540. As written, the proposed rules will decimate our local economy, bankrupt small businesses, disrupt families, and destroy the social fabric and culture of our community.

For most of the rulemaking process Department was proposing no reductions in the Lower Blitzen-Voltage area. The Department changed its approach relatively late in the rulemaking process and is now requiring that the entire basin reach “durably stable” conditions (0 ft/yr of decline) within 30 years. The Department is currently proposing a 39% reduction from current estimated pumpage in the Lower Blitzen-Voltage area despite the fact that groundwater conditions meet the definition of “reasonably stable.” This level of reduction is not warranted for this Subarea based on existing policies and existing data.

Groundwater users were allowed by the Department to develop additional acres in this area under the current Division 512 rules with the full understanding that if the decline conditions reached 18 feet in the approved wells and substantial site-specific evidence showed that wells were not reasonably stable, that those wells would be subject to regulation. During the previous rulemaking process, Department leadership, including now Director Gall, and staff indicated that this area may actually be able to sustain additional development. For the past decade Department leadership and staff have indicated that there is not a problem in the Donner Und Blitzen area and have even highlighted the need for and benefit of additional data given that this part of the basin was relatively data sparse. The Department also consistently committed to partnership and collaboration through the Groundwater Study Advisory Committee process and the place-based integrated water planning process.

According to ORS 537.525 and ORS 536.220 the Department is required by law to protect existing water rights. ORS 536.525 clearly states a preference for voluntary joint action with groundwater users prior to relying on the police power of the state. We urge the Department to honor previous commitments and existing statutory requirements and first meaningfully pursue joint action with groundwater users in the Lower Blitzen-Voltage Subarea prior to pursuing punitive regulatory action. We are committed to maintaining our way of life and sustainably managing groundwater resources for future generations.

Groundwater levels in the Lower Blitzen-Voltage Subarea are reasonably stable per the definition in OAR 690-008-0001. The Department’s own data shows that declines throughout this area have been minimal. The Groundwater Level Trends analysis performed in 2024 show that the median overall decline is -2.9 ft and the median rate of decline is -0.3 ft/yr. Notably, these trends are far below the range of what is considered reasonably stable by the Department. Groundwater users have raised questions and concerns regarding the inclusion of some wells in this network that do not appear to track with the majority of wells and may not accurately represent conditions. Data recently collected by groundwater users in the area are showing that groundwater levels in portions of the basin are stable depending on the timeframe used for analysis and some wells have even risen above reference levels set by the Department. No available data show that this area has met

the criteria for designation as a critical groundwater area. There are no wells that have met the Department's threshold for declining excessively or excessively declined.

Groundwater users have been responsibly using water within the terms and conditions of their permits for decades. To our knowledge, no domestic wells in this Subarea have lost access to groundwater or have been forced to deepen due to declining groundwater levels. No concerns have been publicly raised by domestic well users or stockwater users in this Subarea. We share an interest and concern in groundwater fed ecosystems and are committed to partnering with the Department and others to set a baseline for understanding and measuring impacts to springs, improving our understanding of the complex hydrogeology in this region as it relates to spring discharge, and pursuing voluntary measures to protect ecologically significant springs. Notably, it is the Department's own actions to authorize a transfer out of Weaver Springs and into the Lower Blitzen-Voltage Subarea that may have the most significant localized impact on springs in this area. Unless downstream springs are protected with a senior water right, we do not believe that the Department has legal authority to regulate in favor of unprotected springs or native vegetation.

Groundwater in the Lower Blitzen-Voltage area is distinct from groundwater in the Silvies area, Silver Creek area, Weaver Springs area, and Northeast-Crane area. Groundwater in much of the Lower Blitzen-Voltage Subarea is modern water and is recharged through precipitation in the uplands and streamflow infiltration in the lowlands. The groundwater chemistry and quality are particular to this recharge area. The geology and subsurface are distinct from other parts of the basin. Although the Lower Blitzen-Voltage and Northeast-Crane Subareas may drain or discharge to the same place, we question whether the Lower Blitzen-Voltage Subarea provides significant recharge to the Northeast-Crane area due to the existing hydraulic gradient. We believe that there is sufficient information to demonstrate that these areas are hydrologically distinct and should be treated as different management areas.

The Department previously made a determination in the Lower Blitzen-Voltage area that groundwater is available and that groundwater use was in the public interest. The groundwater study clearly shows that groundwater is not overdrawn and is still available by the Department's own definition, even if all water rights were fully developed. We urge the Department and Commission to adhere to existing statutes and rules rather than pursue unprecedented groundwater reductions through regulations that lack a defensible legal and technical basis.

The groundwater users in this area are primarily family owned and operated businesses that have a strong desire to stay in business and pass our operations onto our children and grandchildren. We believe we can sustainably manage groundwater and voluntarily reduce groundwater use without putting any farms out of business in this area. Our recommendations will ensure that groundwater management in this area is consistent with groundwater laws and policies, protects groundwater for current and future uses, builds a culture of partnership and collaboration with the state, reduces litigation and implementation costs of the Department, and minimizes economic impacts to Harney County. We stand ready to work with the Department to responsibly and sustainably manage groundwater in the Lower Blitzen-Voltage Subarea.

Signed by:

First and Last Name	Representing/Affiliation

Signature Page

Signed by:

First and Last Name	Representing/Affiliation

Signature Page

Signed by:

First and Last Name	Representing/Affiliation

Signature Page

Signed by:

First and Last Name	Representing/Affiliation

Signature Page

Lower Blitzen-Voltage Subarea Division 512 Public Comments Sign-On Letter

Signed by:

First and Last Name	Representing/Affiliation
Frank Kerns	water user
Judy Davis	water user
Pat Heer	user

Lower Blitzen-Voltage Subarea Division 512 Public Comments Sign-On Letter

Signed by:

First and Last Name	Representing/Affiliation
Don D. Hanks	Self
Ron Tatland	OWNER
Rob Elder	user of water (groundwater)
Krati Elder	water user - groundwater
Paul & Citley	ground water water right holder
MARY KERNS	USER
Angie	user
Jeff Dinnon	user
Julie Davis	user
Tom R. Oarns	user
W. R. Rouse	user
Jessie Duke	user
Carl	user
Van Ande	user
John	user

Signature Page

Lower Blitzen-Voltage Subarea Division 512 Public Comments Sign-On Letter

Signed by:

First and Last Name	Representing/Affiliation
Gerrit Jager Benita Jager	IRR;
Patricia Jager Patricia Jager	land owner
Austin Jager	Farm hand
Krysten Jager	↓
Ashton MOON	
Kristen D. Jagers	T I Ranch
Lee Thynberg	Rancher
Matthew Jager	Citizen
Will Munn	Citizen

Signature Page

Lower Blitzen-Voltage Subarea Division 512 Public Comments Sign-On Letter

Signed by:

First and Last Name	Representing/Affiliation
Brew Seward	Tree Top Ranches
Thomas J Gonzalez	Rancher (Princeton)
John Percy	Rancher
Heath F	Banker
Mike Svejcar	Rancher
Lindsay Lovelady Howland	Banker
Diana J. Gonzalez	Rancher
Cindy Koenig	Rancher

Signature Page

Signed by:

Signature Page