Community-Driven Well Water Testing Program

A VISION FOR RURAL WATER JUSTICE IN OREGON

December 2025

Oregon Water Futures

In Partnership with

- Euvalcree
- Oregon Health Authority
- Oregon State University Institute for Water and Watersheds
- University of Oregon Environmental and Natural Resources Law Center

Oregon Water Futures is a collaboration between Verde, Coalition of Communities of Color, Willamette Partnership, and the University of Oregon's Pacific Northwest Just Futures Institute and the Environmental and Natural Resources Law Center.

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1. INTRODUCTION

When asked about water at home, Isela said: "My understanding is that the water isn't good to drink," reiterating how many other participants feel. Most people interviewed spend money buying bottled or purified water to drink and, at times, to cook with. Some shared that they only give their children bottled water because they perceived it to be cleaner. Two of the participants shared that they have young babies and they only give them bottled water. Many participants boil their tap water before using it to cook or drink.[1]

These were some of the themes that came up during interviews conducted in 2020 with Euvalcree, a community-led non-profit organization that works in Malheur and Umatilla counties that develops social capital and leadership capacity of community members. From 2020-2021, Oregon Water Futures (OWF) collaborative spoke with Native, Latinx, Black, and various migrant communities across the state – including Indigenous Latin American, Caribbean, Southeast Asian, Middle Eastern, Arab, Pacific Islander, and Somali communities – to understand what specific concerns communities have about their water.

Rural communities have specific water priorities and concerns that inform water justice narratives in Oregon. A recurring theme across diverse rural communities was the need to understand drinking water quality. Many rural communities rely on decentralized water sources (such as domestic wells or very small community water systems) which are not eligible for most federal and state resources that ensure safe drinking water. In our community conversations, many communities stated that they did not trust their water quality, often choosing to buy bottled water instead. It is critical that all rural community members know what is in their water so that they can advocate for clean drinking water – especially those that have limited access to water resources including but not limited to: low-income community members, community members that speak other languages aside from English, renters, families with seniors, pregnant women, and children, and those living in farmworker housing. Several contaminants commonly found in Oregon wells are odorless, tasteless, and colorless which makes individual system testing essential to identify what, if any, environmental and health hazards are present in their drinking water.

Our vision is to build local leadership in water justice and provide community members with the information needed to advocate for sustained, equitable investments in water infrastructure for rural communities across Oregon. We do this by working alongside community-based organizations to create community education and capacity on water, co-create well water testing protocols, and provide well and drinking water testing kits. Community leaders and volunteers led water testing, while the water and policy analysis was completed in collaboration with OSU's Institute for Water & Watersheds and UO Natural Resources Law Center.

Oregon Water Futures team at UO water testing training

1 Reyes-Santos, Alaí, Cheyenne Holliday, Stacey Dalgaard, Taren Evans, and Kristiana Teige Witherill. "Oregon Water Futures Project Report." University of Oregon, 2021. https://www.oregonwaterfutures.org/report-20-21.

WHY IS COMMUNITY LEADERSHIP IMPORTANT?

Community leadership is indispensable for long term success because it ensures that frontline perspectives are centered and meaningfully engaged. Community leadership promotes social capital, creating networks for support and opportunities while bolstering community resilience in times of crisis. Finally, community leaders have the best solutions for their own communities and are best poised to advance community well-being, development, and policy.

WHAT IS WATER JUSTICE?

Oregon Water Futures believe that all water policy should embody the following principles to advance water justice in our state. Inspired by environmental and social justice movements that lay a strong foundation for us, we must recognize the intersectionality of people and our Earth, the right to self-determination, the rights of workers and renters, and that authentic and meaningful community engagement leads to stronger and more just policy.

1. Driven by community priorities, expertise, and needs of the most impacted.
2. Protects the environment, improves health, and creates economic inclusion.
3. Puts money and power into the hands of frontline communities.
4. Does not recreate broken systems.
5. Builds social infrastructure, not just construction.
6. Invests in projects that match a vision of the future: multigenerational, multi-beneficial, and just.[2]

Rural communities have unique qualities that may compound water justice concerns. Race continues to be the strongest correlating demographic factor to unsafe drinking water across the nation, including in rural communities.[3] Furthermore, we learned from the community conversations published in the Oregon Water Futures Report that communities want more data and information about their drinking water quality so that they can advocate for infrastructure upgrades and investments. To complicate matters further, climate change is having a radical impact on rural communities' access to safe drinking water, as disasters like droughts, mega-fires, and floods pose increasingly grave risks to these small-scale water sources. Now more than ever, it is critical to invest in community-led research and advocacy so that impacted communities can directly uplift priorities that build resilience for a changing future.

2 Read more about these principles in the Oregon Water Justice Framework. Oregon Water Futures Collaborative. "Oregon Water Justice Framework." Accessed July 28, 2025. https://www.oregonwaterfutures.org/water-justice-framework.

3 Dig Deep and US Water Alliance. "Closing the Water Access Gap in the United States: A National Action Plan." Accessed July 28, 2025. https://www.digdeep.org/close-the-water-gap.

2. METHODS

In the Summer of 2023, we organized two community workshops and a home testing program to support community education on well water. We spent a week with Euvalcree conducting community science well water tests in the Hermiston area. We provided education about wells, groundwater, renters rights (if applicable), and water quality. We taught participants how to use a water conductivity meter, calculate total dissolved solids (TDS), and test for nitrates/nitrites using test strips. For participants that complained about water smell and color, we also conducted iron-bacteria tests. For any elevated findings, we sent samples to the lab.

Our visits coincided with Spring Break, and many children were home from school. They often led the testing and helped get the family more involved with questions related to water. We provided children's books donated from the library that depicted children playing in nature.

We removed identifying information and shared data with Euvalcree, including suggested follow up responses to participants. If any initial tests had elevated findings, we paid for additional lab tests with all information going directly to the impacted home.

LOWER UMATILLA BASIN GROUNDWATER MANAGEMENT AREA

Our community well water testing concept and partnership with Euvalcree came out of the 2020-2021 OWF conversations. At a similar time, OHA was launching a large-scale domestic well water testing program in the Lower Umatilla Basin Groundwater Management Area (LUBGWMA) to address high nitrate levels. Since our initial testing, Euvalcree has become a local community partner working with OHA to address nitrate concerns. Learn more about that initiative at https://lubgwma.org/.

Community Well-Water Testing Methods

WHO?

We connected with well water testing participants through referrals from our community partner and their existing community relationships. After the first day, participants told their friends, family, and neighbors about the well water testing service. By the end of the week, all of our testing slots were full, showing the importance of working with partners trusted by the community and the speed and power of social networks. We did home visits alongside the trusted partners of our partner community based organization, Euvalcree. Our staff were able to offer information in English or Spanish.

HOW?

Our general protocol to home visits and community education is outlined below. For our full testing protocol, please refer to Appendix A.

1. **Introductions**
   Spend time introducing yourselves, organizations, and getting to know the family.

2. **Why Are We Here?**
   Explain that you are offering community education through preliminary water tests to teach community members about the basics of well water testing and care, and to answer questions they have about their drinking water.

   The initial tests include a conductivity test, nitrate/nitrites, and iron-bacteria if there are concerns with odor or color. If resources allow, offer to send a water sample to a certified lab if there are any elevated findings.

3. **Encourage Family Participation**
   Engage all generations of the household, especially children! Invite all family members to participate in or perform the water testing.

4. **Perform Tests**
   Walk through the water tests, explaining each step in accordance with test guidelines. Include participation as much as the family is interested. Discuss what each test is for and the health impacts of the contaminants.

5. **Inspect Wells**
   Ask to locate well head and identify well label number (if applicable). Assess surroundings such as proximity to livestock or septic.

6. **Answer Questions**
   Answer the questions you can, and take notes of any questions or information that requires consultation with groundwater experts and follow-up within the week.

7. **Provide Resources**
   Provide resources such as OWRD's Water Well Owner's Handbook, OHA Contaminant Fact Sheets, testing guidelines, and additional water resources. Make direct referrals and warm connections where possible. Consider a gift for families' time, for example, the library donated children's books showing children playing in nature and engaging with water.

8. **Thank You!**
   And of course, thank families for their time and offer opportunities to stay engaged.

Community Workshop Methods

Building off the work from our Hermiston trip, we hosted two additional domestic well water community education workshops. These hands-on workshops were developed to engage community members in conversations about groundwater while sharing knowledge, lived experience, and concerns.

The workshops were completed in June, 2023 at Changing Currents, an annual Tribal Water Summit hosted in North Bend, OR and in September, 2023 in Newport, OR at the Hatfield Marine Science Center.

3. FINDINGS

Well Observations in Hermiston, OR

The following information is limited to the small set of well owners and renters who provided addresses to the Oregon Water Futures team. This provides a snapshot of some of drinking water issues that well users face and can provide some insight into needed policy and infrastructure investments, but it is not meant to be a complete or exhaustive list. The analysis was completed in partnership with Oregon State University Institute for Water and Watersheds.

OBSERVATION 1: MISSING WELL DATA

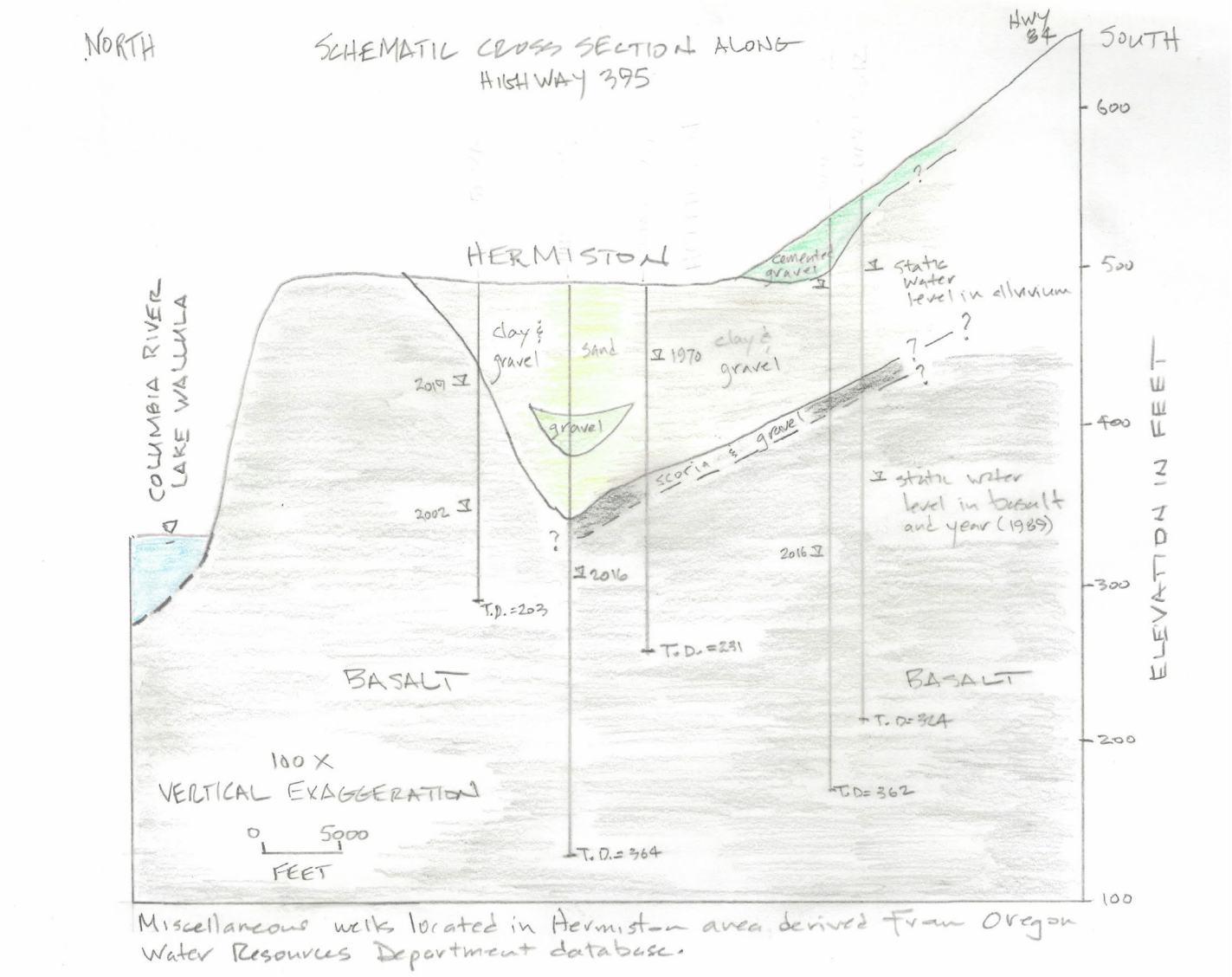
We learned that addresses and locations matter in assessing wells. During our well log query using addresses provided by participants, we found that not all of the well logs can be found on the Oregon Water Resources Department (OWRD) database. The OWRD well logs do not report where the submersible pumps are set which can make assessments and repairs challenging. Well logs tell home owners and renters information about their well such as age, depth, and material. However, in many cases we were not able to find information from the online database, making it even more difficult for homeowners to know how to care for their wells.

OBSERVATION 2: WELL CONSTRUCTION DIVERSITY

What one quickly learns is that each well is "unique" with respect to construction. There is no standard approach to well construction. Some wells are constructed of plastic pipe, some welded steel pipe, some hand sawn perforations for water to enter, some with no perforations, so it can be assumed the water is entering from the bottom of the well, and some open-hole completions where the basalt aquifer stays open after drilling the borehole. The list of differences goes on, and it is safe to say each well is like a person with unique responses to geology, budgets for drilling, and unique hydrologic performance because of the differences in construction.

In our small sampling summarized in the following geologic cross section, we found that:

- Some wells are over 30 years old.
- Some wells have been deepened from the alluvium to the underlying basalt in the past few years.
- Newer wells typically target the deeper basalt and install well seals from top of basalt to ground surface.
- Newer wells tapping the alluvial aquifer are located in undeveloped areas.



Schematic Cross Section Along Highway 395. This cross section shows the hydrogeology of the area using well logs in the Oregon Water Resources Department database.

OBSERVATION 3: HYDROGEOLOGICAL CONSIDERATIONS

There is a downward hydraulic gradient from the shallow aquifer to the deeper aquifer. Water levels in the alluvium are shallower than the water levels found in the basalt aquifer. Wells open to both the shallow aquifer and deeper basalt aquifer may permit commingling of aquifers. If the shallow aquifer is contaminated, it can contaminate the deeper aquifer through an improperly constructed well.

OBSERVATION 4: LAND USE CONSIDERATIONS

The reconnaissance-level land use review was limited to aerial photographs. Some of the wells appear located next to what are interpreted to be Confined Animal Feeding Operations with metal roof buildings, some look located near Center Pivot Irrigation systems, and almost all look like they have green lawns nearby. Onsite wastewater systems likely serve all residences. Further study is recommended to understand how various land use operations impact groundwater.

OBSERVATION 5: CONTAMINATION

Of nineteen tests, only one home had elevated levels of nitrates. We sent the sample into the lab for follow up, and additional analysis was sent directly to the family. Five homes had evidence of iron-bacteria.

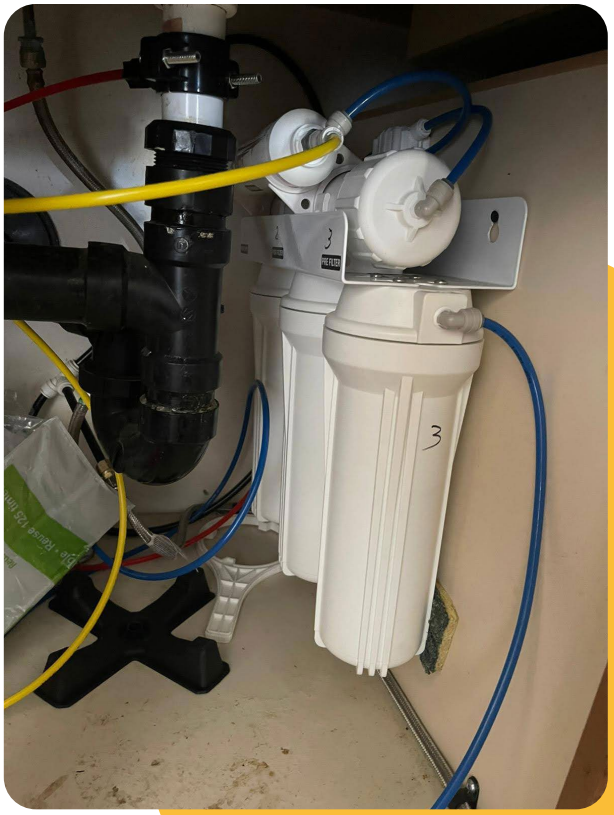
Themes from Coastal Community Workshops

- **Herbicides:** Many people were concerned about herbicides contaminating their drinking water and asked for more information about testing for herbicides.
- **Dynamic systems:** Coastal aquifer systems are dynamic. In contrast to inland systems, the changing ocean tides impact coastal aquifers.
- **Salt water intrusion:** With rising sea levels from a warming climate, salt water intrusion of domestic wells is a risk along the coast.
- **Dry Wells:** People reported wells going dry. A few days before the workshop was hosted, uncommon drought emergencies were declared in several counties along the coast including Lincoln County.[4]
- **Agency mistrust:** Community members expressed mistrust of agencies like EPA. Participants noted the conflicting information on some contaminants from the EPA and the scientific community. For example, the EPA states that glyphosate is safe to use as an herbicide but that scientific research has shown it can have adverse effects to human health.

Program Impact

The highlights from our program include:

- Education and testing for 19 homes
- Three local staff trained to provide basic groundwater, well protection, and water testing information
- Two groundwater education videos created in English and Spanish
- Created and distributed renter's rights information sheets related to well water
- Two community workshops addressing coastal community concerns
- Supported two local partners in accessing $100,000 of funds to support well water tests and education
- Increased capacity and leadership for Euvalcree in the water space who are now working with OHA for local water advocacy



4 Castillo, Elizabeth. "Uncommon drought emergency affects coastal Lincoln City." Sept. 13, 2025. Oregon Public Broadcasting.

4. GROUNDWATER JUSTICE:
POLICY CHALLENGES & OPPORTUNITIES

In 2023, the Oregon Water Futures team set out to answer specific legal and policy questions around groundwater in Oregon with a water justice lens. This resource highlights questions and challenges that came out of community groundwater events around resources, testing, data, and access to safe water—particularly for communities who rent, experience unsafe housing, and are impacted by drought and wildfire. We must explore these questions to understand the specific vulnerabilities in rural Oregon and protect access to clean water for all.

Research was compiled by Michelle Smith, University of Oregon, ENR Center, Research Associate, mesmith2@uorgeon.edu; and ENR Center Fellows: Natalie Gillard, Elissa Karim, Cooper Mittelhauser, Caleb Todd, and Kellie Warren in 2023, and updated in 2025.

Challenge 1: Renters that rely on domestic wells face additional challenges in accessing a safe water supply as compared to homeowners.

Programs to address issues with domestic wells, including water quality and well drying frequently exclude rental properties, creating barriers for both landlords and renters to address issues. Legal frameworks also fail to ensure renters have access to information about their water supply, risks associated with contaminants, and resources to address water supply concerns. A law passed during the 2025 legislative session begins to address this challenge.

HABITABILITY REQUIREMENTS TO WELL WATER

Oregon's Residential Landlord and Tenant Act requires landlords to maintain habitable units (ORS 90.320(1)). With respect to a water supply, landlords must provide tenants with a "safe" water supply, which includes both a requirement to provide water that is safe in quality and of sufficient quantity to support the tenant's reasonable use of the property. The home must also be connected to a sewage disposal system, have appropriate fixtures, and have hot and cold running water. Habitability requirements do not distinguish between and apply equally to homes that rely on water from a public water system and a non-public water system, such as a domestic water supply well. Therefore, if a rental unit's domestic well fails to meet safety or sufficiency standards, the landlord may be in violation of habitability requirements.

DRINKING WATER STANDARDS FOR RENTAL UNITS

The Oregon Health Authority (OHA) regulates water systems serving the public to ensure the safety of drinking water. Two main laws regulate drinking water quality in Oregon—the Oregon Drinking Water Quality Act and the federal Safe Drinking Water Act (SDWA). OHA has been delegated the authority to administer the SDWA. Under the state drinking water law and SDWA, OHA adopts standards designating maximum contaminant levels and water testing requirements.

Only public water systems, which are systems that serve over four homes or public premises, are regulated. That means that the homeowner is responsible for maintaining an individual domestic well. However, we can use the drinking water quality standards as a threshold for domestic well water. While not explicitly incorporated into landlord-tenant law, these standards are the best measure for determining whether water, including domestic well water, is safe.

RESPONSIBILITY FOR REMEDIATING UNSAFE WATER

Landlords must make necessary repairs to address insufficient or unsafe water supplies as long as the issues are within their control. For example, if renters do not have access to safe water because of faulty water fixtures or a failing private well, their landlord is responsible for fixing that issue.

For renters served by a public water supplier, the unsafe condition may be related to the public water supply, for example, contaminated water. In these cases, the public water system should provide information and resources to address the conditions.

CONTAMINANTS AND NATURALLY OCCURRING UNSAFE WATER

Even naturally occurring contaminants, such as arsenic or high Total Dissolved Solids (TDS), render water unsafe under public health standards. Oregon does not exempt landlords from responsibility simply because a contaminant occurs naturally. Reasonable remediation, such as treatment installation, is expected. If treatment is not possible, landlords may need to provide bottled or alternative water, though the law is less clear on such circumstances.

DRY WELLS

Groundwater depletion and changing climate patterns increasingly result in low-output or dry wells. These conditions could violate a landlord's obligation to provide a safe and sufficient water supply. A landlord could be required to provide an alternative water supply.

RENTER RIGHTS AND REMEDIES

Renters have legal rights to safe drinking water. If a landlord fails to meet this duty, renters can provide notice and request repairs. For repairs costing $300 or less, renters may fix the issue and deduct the cost from rent after providing seven days' written notice (ORS 90.368). When the issue is severe enough that renters may face serious danger or health risks if they remain in their home, renters may have additional rights related to payment of rent or terminating their lease (ORS 90.380). Additionally, Oregon prohibits landlord retaliation (ORS 90.385), protecting renters from eviction or rent hikes after raising habitability concerns. We recommend that renters in these situations seek additional resources and guidance from organizations like the Community Alliance of Tenants (CAT) or contact an attorney.

Challenge 2: There are information and resource gaps for renters who use domestic wells.

While Oregon's Residential Landlord and Tenant Law gives renters a right to safe drinking water and remedies to enforce that right, a gap exists in ensuring that renters have information to understand their water supply and identify water quality concerns. Without pathways for renters to understand whether their water supply is safe, renters are unable to meaningfully enforce their right to safe water.

POLICY OPPORTUNITY:

The implementation of HB 3525 (2025) will be critical to ensure that the required well testing information is communicated in an accessible way to tenants, including offering interpretation of technical results in multiple languages. Further, the law only requires testing in limited areas of the state; expanding testing requirements to the whole state would protect renters statewide.

BARRIERS TO RENTER ACCESS AND INFORMATION

Despite their rights, renters often lack access to essential information about their water supply. Prior to 2025, Oregon only required well testing during property sales for arsenic, nitrate, and coliform bacteria. Further, while OHA recommends regular testing of well water, landlords have no obligation to pay for water testing for rental properties.

However, new law from the 2025 legislative session will now require landlords to test wells and provide information to renters. Oregon House Bill 3525 (2025) requires landlords of rental units that rely on private exempt wells within designated groundwater quality management areas to regularly test drinking water for arsenic, lead, coliform bacteria, and nitrates. Landlords must notify tenants in writing about the well, provide test results, and share health-related information if contaminants exceed federal limits. Testing must be conducted annually (or as required), with results submitted to the Oregon Health Authority (OHA). The law takes effect June 1, 2027, and aims to improve drinking water safety in rental properties not connected to public water systems.

Existing groundwater quality management areas include portions of the Southern Willamette Valley, Northern Malheur County, and Northern Morrow and Northwestern Umatilla counties. In all other areas of the state, renters will remain responsible for testing their domestic wells.

COMMUNITY AND POLICY RESPONSES TO UNSAFE WATER

If multiple renters or a broader community are affected by contaminated groundwater, they may seek assistance from OHA or elected officials. For example, communities can advocate to the Oregon Department of Environmental Quality for the designation of a Groundwater Management Quality Area, which triggers a coordinated state response to address contamination. Community organizations like the Community Alliance of Tenants also support renters with advocacy and legal information.

AVAILABILITY OF WELL TESTING DATA AND REPORTING

Testing results from real estate transactions must be submitted to OHA but are not publicly available unless requested. No law prohibits OHA from creating a public database; however, additional legislation would be needed to mandate routine test result submission and database creation. Accredited labs could transmit results directly to OHA under such a program.

POLICY OPPORTUNITY:

The legislature could modify the real estate well sampling program to better support well users in understanding their drinking water quality. OHA collects water quality information but does not require dissemination of testing results outside of the parties to the transaction or remediation options if contamination is discovered. To increase the use of real estate testing information, the legislature could direct OHA to inform water users about elevated contaminants, public health concerns with elevated contaminants, treatment options to address contamination, and programs to support households in addressing contamination. It could also expand groundwater databases to include priority lists of potential contaminants across various regions.

FUNDING AND SUPPORT FOR WELL USERS, INCLUDING RENTERS

The Water Well Abandonment, Repair, and Replacement Fund (WWARF) provides grant funding to pay costs associated with well repair, replacement, or abandonment. The legislation authorizes the use of funding by a broad range of entities and individuals to address domestic well issues related to water level, water quality, resource management, and natural disasters.

Current funding for WWARF prioritizes funding for wells affected by fire and drought and OWRD has limited available funding for homeowners. However, future program funding could expand eligibility to address domestic well issues not related to natural disasters and to support renters.

POLICY OPPORTUNITY:

Expand funds for well water and septic testing, remediation, and replacement to include grants for low-income homeowners and renters by engaging with OWRD in rulemaking.

Challenge 3: Depletion of groundwater resources is resulting in dry wells, exacerbating challenges faced by frontline communities.

Domestic well users are frequently the first to experience depletions of groundwater because their wells are typically shallower than municipal, agricultural, and industrial wells. The purposeful recharge of water into aquifers is one tool to mitigate impacts from declining groundwater.

ARTIFICIAL RECHARGE

The artificial recharge of groundwater is the use of water through human-controlled means to increase groundwater levels. These practices are subject to regulation because they can have environmental and public health impacts. The complexity of these regulatory frameworks can be a barrier to using recharge activities to address drying of individual domestic wells.

Oregon has two categories of groundwater recharge. Artificial Recharge (AR) is the use of water for the purpose of recharging groundwater. Practices to recharge groundwater include spreading water on land or through an injection well. AR practices require a Recharge Permit, which authorizes the use of water for recharge and conditions the AR practices to ensure they protect groundwater resources. Any subsequent use of the recharged water would require a separate water use permit.

Oregon has a separate process for existing water rights holders to store water in an aquifer for later use—termed Aquifer Storage and Recovery (ASR). ASR can only be conducted through an injection well. A permit is required for ASR activities, which reviews and conditions the activities to ensure they are safe and do not pollute groundwater.

In Oregon, both AR and ASR permitting processes are complex and include testing periods, minimum water quality standards for the recharge water, and groundwater quality and quantity monitoring. OWRD is the primary permitting agency and ensures the use of water for AR or ASR is allowed, the Oregon Health Authority ensures drinking water quality is protected, and the Department of Environmental Quality ensures recharge practices protect water quality.

POLICY OPPORTUNITY:

Use of rainwater to recharge wells.

CAPTURED RAINWATER FOR RECHARGING GROUNDWATER

The use of captured rainwater or spring water for recharging groundwater through human-controlled means is a novel issue in Oregon. The use of water from these sources can be exempt from water use permitting requirements; however, recharge practices would still require state authorization.

Subject to limited exemptions, Oregon requires state authorization to divert, store, and use water from any source. Most exemptions allow for the use of water for a specific purpose without a permit, for example, the use of groundwater for domestic purposes of up to 15,000 gallons a day does not require a permit. There is no exemption for water used for aquifer recharge.

There are two circumstances where the use of water from a particular source does not require a permit without respect to type of use: spring water that does not flow off private property and rainwater harvested from impervious surfaces. However, it is likely that the use of these waters for artificial recharge activities would require state permit.

Artwork by Arcadia Trueheart

An ASR Permit authorizes the storage of water in an aquifer and the water's subsequent recovery. Therefore, even if the water used for recharge did not require a water use permit (such as rainwater captured from an impervious surface), a permit would still be required for the recharge activity.

Similarly, an AR permit provides both an authorization for the use of water for recharge and the recharge activity and would still be required for recharge practices even in cases where the recharge water would otherwise be exempt from water use permit requirements. A Recharge Permit is required to appropriate water "from any source" for purposes of artificial recharge. The rules do not distinguish between exempt and non-exempt sources. In addition, as with the ASR permitting framework, the purpose of the permit includes ensuring the benefits and impacts of the recharge activity on the aquifer are understood and monitored.

To support the use of captured rainwater or exempt spring water for recharge, the state can develop guidance to clarify potential benefits and harms, regulatory requirements, and best practices to ensure that innovative water recharge approaches protect human health and the environment.

Challenge 4: Oregon needs greater community and workforce capacity on water infrastructure to address the water needs of rural Oregon.

EXPANDING WELL AUDIT AND INSPECTION CAPACITY

Only licensed well constructors can legally build, alter, or abandon wells. Recent rule changes require welding proficiency and continuing education. OWRD estimates that 1 in 10 wells has a construction deficiency but currently inspects only 30% of Oregon's 250,000+ wells. New legislation has increased OWRD capacity and created well inspection roles, though broader reforms are still needed.

POLICY OPPORTUNITY:

The development of training programs and funding to support completion of well construction and welding programs can increase the number of licensed well constructors. For example, in 2022, the Oregon Legislature approved a $975,000 bond for well construction curriculum at the Klamath Community College. They are building a three-year apprenticeship program and have purchased a drilling rig.

Other program ideas that came out of our community work in Eastern Oregon include development of an Onsite Water Systems Examiner Program that would train students—ideally through a community college internship or apprenticeship—to inspect and evaluate wells, septic systems, and onsite water infrastructure. With hands-on tools like aquifer and septic tank models, the program could prepare graduates for careers serving real estate transactions, well drillers, pump installers, inspectors, and homeowners, while filling a niche workforce needed in rural Oregon.

TRAINING AND COMMUNITY CAPACITY FOR SAMPLING

Outside of property transactions, there are no rules restricting who may collect well water samples for routine testing—though samples must be sent to accredited labs. OHA could expand eligibility to test under current rules. Additional funding for training, awareness campaigns, and treatment assistance is needed to improve public health outcomes related to private well use, especially in low-income and rural communities.

POLICY OPPORTUNITY:

Barriers to well sampling include awareness of the need for testing, how to access and use sampling kits, testing costs, how to interpret test results, and identifying and implementing treatment options. Increased community capacity is needed to address these barriers and to identify at-risk households and communities and implement solutions.

State funding to support training and outreach to existing community partners and defray costs associated with treatment is a non-regulatory pathway to address unsafe drinking water.

5. Q&A WITH A GROUNDWATER EXPERT

It's not everyday that you can call up a groundwater expert to get answers, despite many people having questions about their well water. Common questions include how to care for wells, protect drinking water, and understand how groundwater works.

One groundwater expert responds to real questions we heard in Hermiston, Oregon. We're sharing these conversations to make them more accessible, highlighting the specific questions raised by community members in Hermiston – many of which apply to communities across the rural west.

1. **I have low water pressure and my well is not as deep as my neighbor's well that was built in close proximity. Should I dig a deeper well for better water pressure? My neighbor mentioned that they are having issues with sulfur smell. Would that happen to me if I dig a deeper well?**

   Low water pressure does not necessarily mean your well is running dry. It could refer to the water pressure from the well storage tank (typically a small tank under the house or in a well house near the home) that is pressurized by a bladder in the tank. The low pressure might indicate the bladder tank needs to be evaluated by a well servicing professional, someone who services well pumps.

   It is possible that the neighbor's deeper well is pulling from a different aquifer. However, deeper does not necessarily mean better or cleaner. It is recommended to have someone get a sample of water from the neighbor. It might be hydrogen sulfide, or it might be iron bacteria.

2. **How often should we replace wells? Our well is about 50 years old.**

   It's probably time to have the well replaced after 30-35 years. Replacement is not only a function of the well seals and steel casing corroding, but also in response to land use changes around the well. For example, maybe there are more homes in the area than when the well was installed. New wells also mean new septic tanks. Or, maybe there is more agricultural land use or industrial land use. The main concern of an old well is whether the well seal is deep enough to keep contaminants from getting into the well or well bore if the seal is shallow.

3. **Should I use bleach to clean wells?**

   Disinfection of the well should be completed by a well servicing professional who can get the liquid disinfectant from the bottom to the top of the water in the well. Dumping bleach in the well usually means it stays near the water level. Another technique is to use disinfectant tablets which you can drop to the bottom of the well. All of this material should be purchased and installed from a well servicing contractor because chlorine gas is toxic.

4. **Sometimes in the summer, the water pressure changes. We notice that we can't run sprinklers if we are using water somewhere else, for example. One neighbor thinks that his water pressure has gone down since his neighbor built a well next to his. The neighbor's well is deeper. He states that he gets 12-13 gallons per minute.**

   There are many things that can cause these observations. Wells can store many gallons of water in the well casing (called casing storage) which can make it appear that the well is very productive. The rate of entry of water from the aquifer may be much less than the rate of the pumping equipment, either naturally, or it can decrease over years due to incrustation or mineral precipitation in the well perforations, build-up of iron bacteria over the well perforations, or a combination of these common well clogging problems.

   If the well owner thinks the well performance is due to interference from a neighboring well, this is one of the many issues addressed by the local OWRD Watermaster.[5]

5 Oregon Water Resources Department, Regional Offices and Watermasters Directory, https://www.oregon.gov/owrd/aboutus/contactus/pages/regionalofficesandwatermastersdirectory.aspx.

5. What are community wells? Anything special we should know about?

   A "Community Well" means a water supply well, whether publicly or privately owned, which serves or is intended to serve more than three connections for residences or other connections for the purpose of supplying water for drinking, culinary, or household uses and it is subject to state regulation; whereas a "Domestic Well" serves 1-3 households and it is the owner's responsibility for maintenance and testing. The Oregon Water Resources Department does not monitor agreements between folks sharing wells, and this can lead to conflicts between neighbors.

6. What should I do if lab tests show high nitrate levels?

   Nitrate concentrations come and go, so it is best to start a long-term monitoring program during different seasons to see if there is an ongoing problem.

7. I have iron bacteria in my water. What should I do?

   Iron bacteria is impossible to remove. It can only be controlled. If the iron bacteria colonies are not large in number it is probably best to not do anything. If the iron bacteria are causing staining in fixtures or clogging pipes in the house or the well and well pumping equipment, these problems can be controlled by well servicing professionals. Many folks think dumping chlorine or chlorine tablets in a well will kill the bacteria, but such treatment only kills some of the bacteria, and the dead bacteria become food for the residual bacteria, potentially causing a "bloom" in bacteria growth.

8. I am a new homeowner and I don't know where my septic is buried and can't find public documents on it. Any suggestions?

   The county planning or health department may have permit documents. A more efficient approach is to contact a local septic tank service contractor to visit the residence as they are experts at locating septic tanks. Given the homeowner is new to the area, it is likely their septic tank needs to be pumped, too. A good time to begin a positive working relationship with the local contractor in case of a future emergency. Yelp has many contractors listed.[6]

9. My community is known to have hard water. Can that make my hair fall out? If not, are there other things in water that can make hair fall out?

   Yes. According to this website,[7] one of the signs of hard water is when "hairs break off at the base– this is due to calcium deposit build-up on the scalp and is what many may mistake for hair loss. The problem may not be with the hair root, but in the brittleness of the hair shaft. Hard water will make your hair weak, no matter how healthy your follicles are functioning." It is probably best to confirm this with a licensed cosmetologist to learn more.

10. When we use hot water, our water smells like eggs. We noticed the smell after we installed a water softener. Can a softener make it smell more?

    Maybe. According to this website,[8] "If there is only an odor in the hot water, this indicates a problem with the water heater. The most likely source is a reaction between an anode rod in the water heater and natural sulfate ions in the water."

11. There is livestock near my wellhead. What's the recommended distance between wellhead and livestock?

    State regulations regarding well locations indicate a 100 feet setback from a septic tank drainfield. This setback distance is probably a good guideline for livestock.

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6 Yelp, "The Best 10 Septic Services near Boardman, OR 97818," https://www.yelp.com/search?cflt=septicservices&find_loc=Boardman%2C+OR+97818.
7 Water Right, "Can Hard Water Cause Hair Loss? 4 Tips To Strengthen Your Hair", https://www.water-right.com/homeowner-resources/can-hard-water-cause-hair-loss/#:~:text=Hairs%20break%20off%20at%20the,healthy%20your%20follicles%20are%20functioning.
8 Aquatell, "Water Softeners," https://www.aquatell.ca/pages/water-softeners.

6. RENTERS' RIGHTS TO SAFE WATER
DOMESTIC WELLS

Environmental and Natural Law Center,
University of Oregon for Oregon Water Futures

Artwork by Arcadia Trueheart

RENTERS HAVE A LEGAL RIGHT TO SAFE AND ACCESSIBLE WATER.

Oregon's Residential Landlord and Tenant law requires landlords to maintain habitable premises. If the homes' water source is from a domestic well, the landlord must ensure the well provides sufficient water for household uses and is safe. This includes:

- hot and cold running water
- working fixtures
- safe water for household uses

DETERMINING IF YOUR WELL WATER IS SAFE.

The state maintains information about safe contaminant levels, public health risks associated with elevated contaminant levels, and treatment and maintenance options. Water that exceeds public health standards is unsafe even if the elevated contaminant level is naturally occurring.

Contaminant	Action level	Resource
Arsenic	Not safe for children at 35 parts per billion Not safe for adults at 130 parts per billion	Factsheet
Nitrates	Not safe over 10 milligrams per liter	Factsheet
Coliform and E.coli Bacteria	Not safe for drinking, food preparation, brushing teeth, or use in eyes. Safe for other household uses. (Irrigation, cleaning)	Factsheet

The Oregon Health Authority recommends well users test water annually for nitrates, coliform, and E.coli bacteria, and every three to five years for arsenic. Cost for tests range from $20 to $45.

While not recommended for routine testing by the state, tenants may wish to also test for lead, which may be naturally occurring or leached from household plumbing or well components. Public health concerns occur with lead levels exceeding 15 parts per billion. You can learn more about testing and treating lead contamination here: https://www.oregon.gov/oha/PH/HealthyEnvironments/DrinkingWater/Monitoring/Documents/health/lead.pdf.

Domestic wells that serve fewer than four homes are not subject to state regulation to ensure safe water. The state also does not require landlords to routinely test domestic wells or pay costs associated with testing wells except in specially designated areas of the state.[9] As a result, renters need to proactively

9 New law from the 2025 legislative session will now require landlords to test wells and provide information to renters within designated groundwater quality management areas. Existing groundwater quality management areas include

maintain and test their well water and will generally have to pay for testing.

You can learn about contaminants in your area here: https://geo.maps.arcgis.com/apps/MapSeries/index.html?appid=c0d7daea497049c1a686d07dab7106e5.

Oregon's Domestic Well Safety Program may have information about your well if it was tested as part of a real estate transaction: https://www.oregon.gov/oha/PH/HEALTHYENVIRONMENTS/DRINKINGWATER/SOURCEWATER/DOMESTICWELLSAFETY/Pages/Program-Information.aspx.

Learn about collecting a well sample here: https://sharedsystems.dhsoha.state.or.us/DHSForms/Served/le8312.pdf.

Find labs accredited to test well samples: www.healthoregon.org/wells.

The state has programs to help pay the costs to test well water. Contact the Oregon Health Authority or your local health department to find out if there are resources to pay testing costs in your area.

Local public health departments can help connect well users with resources and identify treatment options: https://www.oregon.gov/oha/ph/HealthyEnvironments/DrinkingWater/Documents/staff_county.pdf.

LANDLORDS' DUTIES WHEN WATER IS NOT SAFE OR ACCESSIBLE.

Hatiye Garip

Landlords are responsible for fixing conditions that make water inaccessible or unsafe if those conditions are in the landlord's control. For rental properties relying on domestic wells, landlords must address conditions that make water unsafe or inaccessible, which may include treating the well water, installing filtration or other treatment devices, and changing fixtures or pipes. If water is not accessible or unsafe, landlords may need to provide an alternative water source.

For information about maintaining domestic wells: https://www.oregon.gov/oha/PH/HEALTHYENVIRONMENTS/DRINKINGWATER/SOURCEWATER/DOMESTICWELLSAFETY/Pages/Resource-Toolkit.aspx.

ADDRESSING DRY WELLS

Landlords are responsible for ensuring residents have an adequate water supply to support household uses. For households relying on a domestic well, landlords will be responsible for resolving issues with dry wells. Landlords cannot pass on costs associated with the necessary repairs or maintenance to the tenant (ORS 90.320).

The state tracks dry domestic wells to help it better understand the status of groundwater. You can report a dry well here: https://go.usa.gov/xFbW3.

portions of the Southern Willamette Valley, Northern Malheur County, and Northern Morrow and Northwestern Umatilla counties. In all other areas of the state, renters will remain responsible for testing their domestic wells.

RENTERS' REMEDIES IF WATER ISN'T SAFE OR ACCESSIBLE.

If your well goes dry or you identify contaminants in the water, contact your landlord and request they remediate the issue.

Safe drinking water is considered an "essential service" and renters may have legal remedies if a landlord is not providing safe water. Depending on the severity of the problem, remedies could include:

- For minor repairs that cost less than $300, renters can make an agreement with their landlord to pay for the cost of the repair upfront. Then, the landlord would deduct the total amount from that month's rent.
- In some cases, renters may also be able to sue their landlord for damages. When the issue is severe enough that renters may face serious danger or health risks if they remain in their home, renters may have additional rights related to payment of rent or terminating their lease.

Before accessing these remedies:

- Renters MUST provide written notice to the landlord of the problem, request that it be repaired, and provide time for the landlord to act (seven to 30 days).
- Renters SHOULD keep careful records of habitability problems, their communications with landlords, including any requests for repair, and all expenses related to the problem.
- Renters SHOULD reach out to renters' rights advocates to better understand their rights and SHOULD ALWAYS talk to a lawyer before withholding rent. Remember, landlords can sue their tenants for violating rental agreements.

Community Alliance of Tenants:

- Renters' Rights Hotline: 503.288.0130
- Know Your Rights: https://heron-dory-m496.squarespace.com/know-your-rights.

Legal support:

- Oregon Law Help: https://oregonlawhelp.org/ and 503.224.4086
- Legal Aid Services of Oregon: https://lasoregon.org/ and 1-800-288-6958.

7. APPENDICES

The following resources are the protocol, script, and science log that we used for the well water testing program.

A. Well Water Testing Script and Protocol

1. INTRODUCTIONS

a. Names
b. Who we are, Oregon Water Futures project, we heard people had questions about water, especially well water.
c. This is a community science project where we will learn more about what's in your water together. We have health, humanities, and law backgrounds but are still new to learning about groundwater.
d. We are working with OSU Well water experts, so if we can't answer your questions today, we will be able to follow up with you.
e. Today we want to chat about water, do some testing together (if you have kids they can participate).
f. How's your water? Have you ever had it tested? Do you know where your well is located? Any big questions you have before we get started?
    i. If applicable, share the image of the well and well reports.

2. VIDEO - GROUNDWATER

We want to start off today watching a short video – it's animated and a little silly, but we feel like it has really great information.

a. Show youtube videos
    i. English: https://youtu.be/oNWAerr_xEE
    ii. Spanish: https://www.youtube.com/watch?v=_o-uFPTFMVY

3. TESTING

We will do 2 tests with you today that will let us know if we need to do more testing with the lab. We might do one more test if you have problems with smell or staining.

Everyone testing wears gloves.

3.1 Test Conductivity

What is the conductivity test?
How much mineral content is in the water.

What are the health risks?
This only shows elevated levels of materials in the water, but not what they are or if it's unhealthy for you. If there is a positive finding, we will do extra tests and send tests to the lab.

Protocol:
Rinse the container out 3 times with the water you will use. Then fill the container to the line and hold down the button. Take the number on the meter (conductivity) and multiply by 0.67 to find dissolved ppm.

Standards:

If higher than 500 ppm, need more testing.

3.2 Test Nitrite/Nitrate

Note: This is a good one to do with children.

What is nitrite and nitrate and where does it come from?
Nitrate is a naturally occurring form of nitrogen that has no color, smell or taste. It is an essential component of living things. Although nitrate can occur naturally in groundwater, high levels are often associated with human activities. Nitrate is a major part of animal manure, human sewage waste and commercial fertilizers. Nitrate in your well water is a potential health hazard.

El nitrato es una forma natural de nitrógeno que no tiene color, olor ni sabor. Es un componente esencial de los seres vivos. Aunque el nitrato puede aparecer de forma natural en las aguas subterráneas, los niveles elevados suelen estar asociados a las actividades humanas. El nitrato es una parte importante del estiércol animal, de las aguas residuales humanas y los fertilizantes comerciales. El nitrato en el agua de su pozo es un peligro potencial para la salud.

What are the health risks?
Presence of nitrate in drinking water can cause a variety of long- and short- term effects. Infants fed baby formula mixed with nitrate-contaminated water above 10 mg/L are at risk for blue baby syndrome, a condition causing decreased ability of red blood cells to carry oxygen. Breastmilk is safe for infants even if the water the mother is drinking has more than 10 mg/L nitrate. Women who are pregnant or may become pregnant should not drink water with high nitrate. There is some evidence that drinking water with nitrate above 10 mg/L can increase the risks of spontaneous abortion (miscarriage) and certain birth defects.

La presencia de nitratos en el agua potable puede provocar diversos efectos a corto y largo plazo. Los bebés alimentados con fórmula para bebés mezclada con agua contaminada y con altos niveles de nitrato por encima de 10 mg/L están en riesgo de desarrollar síndrome del bebé azul, una condición que causa una disminución de la capacidad de los glóbulos para transportar oxígeno. La leche materna es segura para los bebés, incluso si el agua que la madre está bebiendo tiene más de 10 mg/L de nitrato. Las mujeres que están embarazadas o pueden quedar embarazadas no deben beber agua con alto contenido de nitrato. Existe cierta evidencia de que beber agua con nitrato por encima de 10 mg/L puede aumentar los riesgos de aborto espontáneo (aborto espontáneo) y ciertos defectos de nacimiento.

Resources: English info sheet, Spanish info sheet

Protocol:
Dip strips in water. Look at both nitrate/nitrite findings and follow directions on the bottle. Generally, if more than 10 ppm (mg/L), we will want to collect water for lab tests.

Standards:
The safe drinking water standard (also called maximum contaminant level or MCL) for nitrate is 10 mg/L. If your water has nitrate levels above 10 mg/L, you should switch to bottled water or another source of safe drinking water and seek treatment options.

El estándar de agua potable (también llamado nivel máximo de contaminante o MCL (por sus siglas en inglés)) para el nitrato es de 10 mg/L. Si su agua tiene niveles de nitrato superiores a 10 mg/L, debe cambiar al agua embotellada o a otra fuente de agua potable segura y buscar opciones de tratamiento.

3.3 Test Iron Bacteria.

Ask if there is any smell or staining from their water. If no, don't test, if yes:

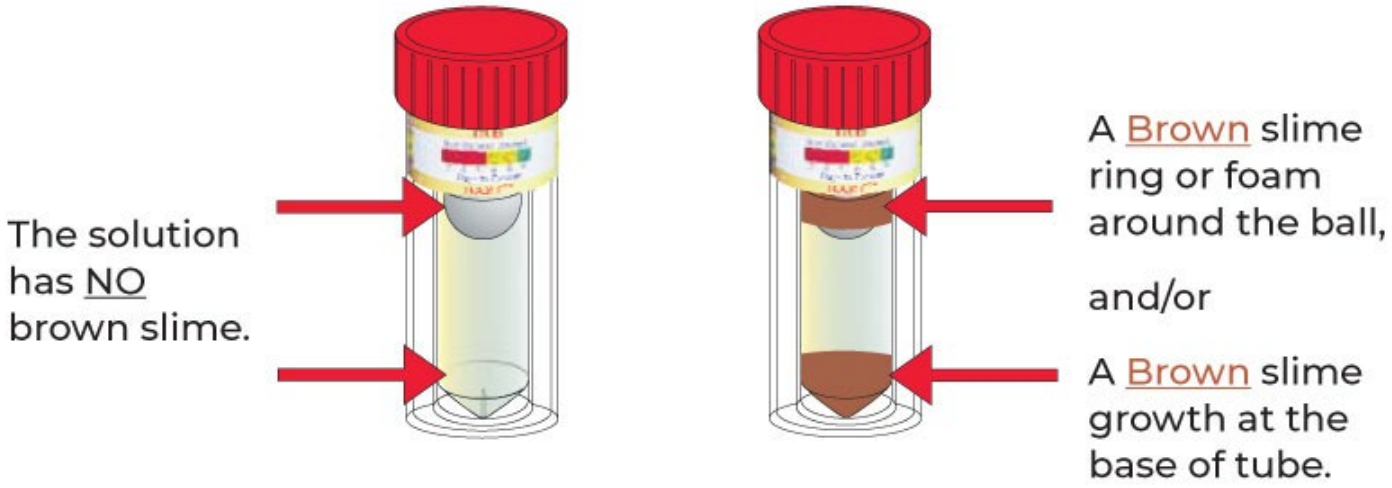
What is iron-bacteria?
Iron bacteria are small living organisms that naturally occur in soil, shallow groundwater, and surface waters. These bacteria combine iron (or manganese) and oxygen to form deposits of "rust," bacterial cells, and a slimy material that sticks the bacteria to well pipes, pumps, and plumbing fixtures.

Is it bad for your health?
Iron bacteria are not known to cause disease. However, it can affect smell and taste and can make water

unappetizing or create conditions for other things to grow.

Protocol:
Fill with water as per instructions. Have the family send us a picture of it everyday for up to 8 days. The speed shows us how much bacteria is living in there.

Standard:
Follow up with Todd Jarvis for positive findings.



3.4 If any elevated levels are found

Fill up the Real Estate Kit from the lab. This tests arsenic, nitrate/nitrite, and e coli and coliform bacteria, or sign them up to get tested with OHA, whichever is their preference.

4. RESOURCES FOR TESTING

Lower Umatilla Basin Domestic Well Testing and Treatment Assistance:
If you live within the Lower Umatilla Basin Groundwater Management Area (LUBGWMA) of Morrow and Umatilla Counties, you may be eligible for free/subsidized private well testing and treatment, and if needed access to bottled water. The Oregon Health Authority is currently providing vouchers for private or "domestic" water testing to LUBGWMA well users. Vouchers will cover testing for Nitrate, Arsenic, Bacteria, Lead, and Iron, Manganese, and Hardness. OHA will soon begin providing vouchers for in-home treatment systems for households whose domestic well water has tested high for nitrates (whether through tests funded by OHA beginning in February 2023 or testing carried out since June 2022 by Morrow or Umatilla Counties). For more information, visit the Lower Umatilla Basin Groundwater Management Area Domestic Well Testing and Treatment page. Para información en español, oprima aquí.

5. RESOURCES FOR WELL WATER REMEDIATION

Treatment options range from removing the source of the contamination and shock chlorinating the well and pipes to more advanced treatments such as ion exchange or reverse osmosis. If water treatment is not an option, other options may include connecting to a new source, or constructing a new deeper well.

Visit the Well User Resource Toolkit for more information.

Depending on what's in your water and the condition of your well, there are different options. We may need to consult our specialist and wait for lab results before suggesting the next steps. However, there are a couple of resources available.

For Homeowners:
Water Well Abandonment, Repair, and Replacement Fund: The Oregon Water Resources Department (OWRD) is currently accepting applications from low-to-moderate income households with domestic wells that are impacted by drought or wildfire. The Water Well Abandonment, Repair, and Replacement Fund provides financial assistance to permanently abandon, repair or replace a water well used for household purposes. Applications will be accepted year-round, depending on availability of funds.

At this time, funding is available only for dry or declining wells, or wells impacted by wildfire.

Please see the OWRD website for the most current information. Para información en español, oprima aquí.

Private well owners with health-related questions about nitrate in their water may call 971-673-0440 or email domestic.wells@state.or.us.

For Renters:
The Oregon Residential Landlord Tenant Act (ORS 90.320) requires that all landlords maintain their rental units in a habitable condition, including providing a water supply maintained so as to provide "safe drinking water." This means that the landlord is responsible for fixing or replacing the plumbing, or providing another source of safe drinking water if the well is contaminated. The Community Alliance of Tenants can assist you should you encounter any resistance from your landlord.

We can help get you signed up and figure out how much it costs to be a member at CAT. They have a hotline to call.

B: Community Science Well Water Testing Log

Community Science Well Water Testing Log

Name	Date	Time

Results

Nitrite	Nitrate	Conductivity	Iron-Bacteria *Circle* Yes No *Reminder to have participants send us photos in 7 days*

Comments or concerns about water

Questions

Follow-up