Improving Domestic Well Stewardship In North Central Oregon

Jeremy Hawkins
North Central Public Health District
Background
Partnerships

The Dalles Water Quality Lab

OSU Extension Services
# Contaminants

<table>
<thead>
<tr>
<th>Test</th>
<th>Source</th>
<th>Interpretation</th>
<th>Remedy</th>
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</thead>
<tbody>
<tr>
<td>Total Coliform Bacteria / E. coli</td>
<td>Enters well through groundwater, surface water run-off, cracked or broken well parts, poor construction, or leaking septic tanks</td>
<td>Qualitative result</td>
<td>Hyperchlorination of the system based on volume of the well, chlorine concentration, and contact time.</td>
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<tr>
<td>Nitrate</td>
<td>High rates are usually linked to human activities including animal manure, human sewage waste, and commercial fertilizers</td>
<td>Quantitative result: Maximum Contaminant Level (MCL) = 10.00 ppm</td>
<td>Distillation, Ion Exchange, or Reverse-Osmosis Filters</td>
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RESULTS

Summary of Lab Results

<table>
<thead>
<tr>
<th></th>
<th>Wasco</th>
<th>Sherman</th>
<th>Gilliam</th>
</tr>
</thead>
<tbody>
<tr>
<td>TCB</td>
<td>7</td>
<td>9</td>
<td>4</td>
</tr>
<tr>
<td>E. Coli</td>
<td>4</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Nitrate &gt;MCL</td>
<td>1</td>
<td>6</td>
<td>3</td>
</tr>
<tr>
<td>Elevated Nitrate</td>
<td>4</td>
<td>15</td>
<td>5</td>
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</table>
## Conclusions

<table>
<thead>
<tr>
<th>Challenges</th>
<th>Opportunities</th>
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<tbody>
<tr>
<td>• Identifying vulnerable populations</td>
<td>• Sharing results with local government and community partners</td>
</tr>
<tr>
<td>• Geography</td>
<td>• Capitalize on new public interest in water quality</td>
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<tr>
<td>• Time for additional follow up and analysis</td>
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</tbody>
</table>
To-Do’s for Public Health Professionals

- Form relationships with willing partners.
- Identify or create workforce development opportunities.
- Collaborate with coworkers in different public health programs.
DROUGHT PREPAREDNESS

A PROLONGED DROUGHT CAN HAVE SIGNIFICANT CONSEQUENCES ON PHYSICAL AND MENTAL HEALTH. BY TAKING STEPS TO PREPARE NOW, AND APPLYING WATER CONSERVATION STRATEGIES, WE CAN LOWER THE HEALTH RISKS OF DROUGHT IN OUR COMMUNITY.

ADDITIONAL RESOURCES

OREGON DOMESTIC WELL SAFETY PROGRAM
www.healthoregon.org/wells

OSU EXTENSION SERVICE
www.extension.oregonstate.edu/rough_times

COVENOR’S DROUGHT PAGE

OREGON CLIMATE AND HEALTH PROGRAM
www.healthoregon.org/climate

DROUGHT RISKS & TIPS FOR PROTECTING YOUR HEALTH

1. CONTAMINATION OF DRINKING WATER
   Viruses, toxic algae, protozoa, bacteria, cyanotoxins or septic emissions could become more concentrated in wells with lower water levels and less flow.
   WHAT YOU CAN DO: If you rely on a private well for your drinking water, consider testing the quality of your water for bacteria, viruses, and cysts each year, alternating testing in both wet and dry seasons. For more information on how to test your water, go to: www.healthoregon.org/wells

2. STRESS, ANXIETY, AND DEPRESSION
   Severe and ongoing drought can result in significant income loss for those who work in agriculture, landscaping, and related fields. Changes to a familiar place (such as pets, fields or forests) or ways of life (such as impacts to hunting and fishing) can also trigger grief and depression.
   WHAT YOU CAN DO: If you or someone you know is experiencing stress related to drought, consider using the resources listed on OSU Extension Service’s website “Finding Help in Tough Times” (http://extension.oregonstate.edu/tough_times/findings-help-tough-times) or call the talk-line number 1-800-585-5850 or text TalkWithUs® to 68468. Openpath speakers can text “helpline” to 65700 for support and crisis counseling.

3. VECTOR-BORNE DISEASES
   Mosquitoes carrying diseases, such as West Nile Virus, can move into new areas when stagnant bodies of water create new breeding grounds. Ticks carrying Lyme Disease are also moving into new areas.
   WHAT YOU CAN DO: It’s possible, remove stagnant pools of water. When you observe the presence of mosquitoes, consider using repellent and wearing appropriate clothing, especially at dusk and dawn. After spending time outdoors, check your skin for ticks. If present, remove immediately and visit a doctor promptly. The risk of Lyme disease is greatest in late spring and summer and serious effects can be avoided if antibiotics are used soon after a bite.

4. WILD ANIMALS NEAR YOUR HOME
   Wild animals, such as bats, rats, and rats live on your home. They can enter residential areas more often in search of water. Some wild animals can be poisonous or carry diseases, such as rabies.
   WHAT YOU CAN DO: Remind young children not to touch live or dead wild animals. If a bite occurs, seek medical care.

5. EXTREME WEATHER EVENTS
   Extreme weather events like wildfires, dust storms, floods, and heat waves may become more frequent. Smoke and dust affect people in the air, which can aggravate asthma and other lung and heart diseases. When rain falls, flooding could be more likely. Heat waves can cause an increased risk of injury and death from heat exhaustion or heat stroke, especially among the young, pregnant or elderly.
   WHAT YOU CAN DO: During a wildfire or dust storm event, keep indoor air as clean as possible by keeping all doors and windows shut and reduce your time spent outside. Stay informed with the Oregon Smoke Blog www.oregonmired blogspot.com
   During a heat wave drink more water than usual, take cool showers or baths, limit outdoor activity, and seek shade. If you do not have an air conditioner, approach your health care provider about assistance with purchasing an AC unit for your home.

WATER CONSERVATION TIPS

- Store drinking water in the refrigerator.
- Do not let the tap run while you are waiting for water to cool.
- Repair dripping faucets by replacing washers. One drop per second wastes 2,700 gallons of water per year.
- Retrack all household faucets by installing aerators with flow restrictors.
- Insulate water pipes to reduce heat loss and prevent them from future damage.
- Purchase appliances that use energy and water efficiently.
- Operate automatic dishwashers and clothes washers only when fully loaded.
- Plant native and/or drought-tolerant grasses, ground covers, and trees.
- Consider using recycled water to water your plants and gardens.
- Install irrigation devices that are water efficient. For example, micro and drip irrigation, and sprayer nozzles.
- Use mulch to retain moisture in the soil.