

Statewide Groundwater Monitoring Program



State of Oregon
Department of
Environmental
Quality

Laboratory and Environmental Assessment Program

3150 NW 229th Avenue
Suite 150
Hillsboro, OR 97124
Phone: 503-693-5700
Fax: 503-693-4900
Contact: Kara Goodwin
www.oregon.gov/DEQ

Groundwater in Oregon

Groundwater is essential to the economic viability and livability of many Oregon communities. Groundwater is used for irrigation, drinking water, municipal water supplies and other uses. Currently, groundwater-fed, municipal water supplies serve over 70 percent of Oregon residents, while nearly 23 percent of Oregonians are dependent on private wells for drinking water.

Groundwater also influences the quality of many Oregon rivers and streams. Especially during the dry summer months, groundwater inflows affect stream flow, water chemistry and stream temperature which, in turn, can determine the quality of surface waters used for drinking water, irrigation and recreation. Cold-water inflows of groundwater are also essential to salmon and trout populations in many streams.

Groundwater contamination is a serious issue in some areas of Oregon. Chemicals applied to the land surface, such as fertilizers or pesticides, may travel into groundwater. Another possible source of contamination is poorly located or maintained septic systems. Once contaminated groundwater resources are extremely difficult to clean up. The best approach to maintaining groundwater quality is to prevent contamination before it even starts. We need data to help us accomplish this.



A field staff member sampling a domestic well

The Oregon Legislature provided funding to the DEQ in 2013 to develop a statewide groundwater quality monitoring program. Prior to this investment, monitoring was only routinely conducted in Oregon's three Groundwater Management Areas located in northeast Malheur County, the Lower Umatilla Basin and the Southern Willamette Valley.



DEQ staff sampling a well with helpful local citizens.

Goals of the Statewide Groundwater Monitoring Program

- Monitor groundwater for contaminants of concern, including nitrate and pesticides
- Determine areas of the state that are especially vulnerable to groundwater contamination
- Determine status of ambient groundwater quality
- Identify emerging groundwater quality problems
- Inform groundwater users of potential risks from contamination

Data Collection

Two regional groundwater studies are conducted each year with the goal of characterizing the quality of groundwater throughout the state in ten years. Sixty to one hundred wells are sampled in each study area. As of December 2016, a total of 276 wells have been sampled in the mid-Rogue, North Coast, and Walla Walla basins. Most wells are volunteered by private landowners. Nitrate, arsenic, bacteria, common ions and 136 pesticides are included in the analyte list. Additional analytes, such as legacy pesticides, pharmaceuticals and perchlorate are added according to local risk factors and program capacity.

Working with communities

The DEQ Statewide Groundwater Monitoring Program relies on voluntary participation. Land/home owners volunteer to have DEQ collect water samples from their well and, in turn, receive a free report on the quality of their well water. This test would cost them several hundred dollars if they went through a private lab.

Local Collaboration

DEQ works closely with local stakeholders on outreach and communication to well owners. State and local public health representatives assist well owners with health risk information and with technical assistance for addressing water quality issues with their wells.

Data informing decisions

The data collected in this study will fill important gaps in understanding groundwater quality throughout Oregon. Many people rely on groundwater as their primary source of drinking water and they may not know if it poses a risk to their health. After receiving the monitoring results from their well, some owners have added additional treatment to drinking water. Others decide not to do anything in light of the data. Either way, the monitoring results provide more information for people to make health decisions for themselves and their families.

Additionally, DEQ summarizes the monitoring results throughout a study area in to a report, which is shared with property owners and local health departments. This report also informs the work and direction of other DEQ programs, including toxics reduction and water quality assessments. Various other agencies also have access to the data to inform local decision making.

Technical expertise

The Statewide Groundwater Monitoring Program in the DEQ Laboratory and Environmental Assessment Program employs two full-time groundwater monitoring specialists and relies on the expertise of chemists, hydrogeologists, project managers and technical services staff to ensure data analysis, quality and usability. Their responsibilities are to ensure that resource managers at DEQ and other agencies have the information needed to protect and restore Oregon's groundwater resources. In all, the program produces more than 5,000 data points each year.

For more information

More information on the Statewide Groundwater Monitoring Program is available by contacting DEQ at groundwater.monitoring@deq.state.or.us or 503-693-5736. Homeowners interested in being included in future groundwater studies should first check to make sure there is access to flowing water prior to any filtration or water treatment system.

Alternative formats

Documents can be provided upon request in an alternate format for individuals with disabilities or in a language other than English for people with limited English skills. To request a document in another format or language, call DEQ in Portland at 503-229-5696, or toll-free in Oregon at 1-800-452-4011, ext. 5696; or email deqinfo@deq.state.or.us.