Oregon State University Extension Service

GROUNDWATER PROTECTION EDUCATION IN YOUR COUNTY

PRESENTED BY CHRISSY LUCAS, OUTREACH PROGRAM COORDINATOR

Oregon State University

Wells – Domestic Use

- Statewide roughly 355,000 active wells
- About 3500 to 3800 new wells are added each year.
- Very few wells are listed as abandoned and/or properly decommissioned
- 10% to 20% of wells have no identified records

- **Lincoln County – 1/9/20 – Well Log Query for Water Wells**

2816

Program Goals

- Increase awareness of groundwater issues, improve community involvement opportunities, and promote behavior changes that enhance the safety of public and private drinking water supplies and protect regional groundwater quality.

- Reduce the potential for groundwater contamination from residential sources by providing residents with the tools and knowledge necessary to identify household risks to drinking water quality, evaluate groundwater protection strategies and adopt sustainable management practices.

Delivery Methods

- One on One (telephone, email, screening clinics)
- Formal Presentations – Rural Living Basics & Living on the Land
- Informal Presentations – neighborhood screenings
- Website – http://wellwater.oregonstate.edu
- Hands-On Demonstrations
- OSU Publications
- Newsletters

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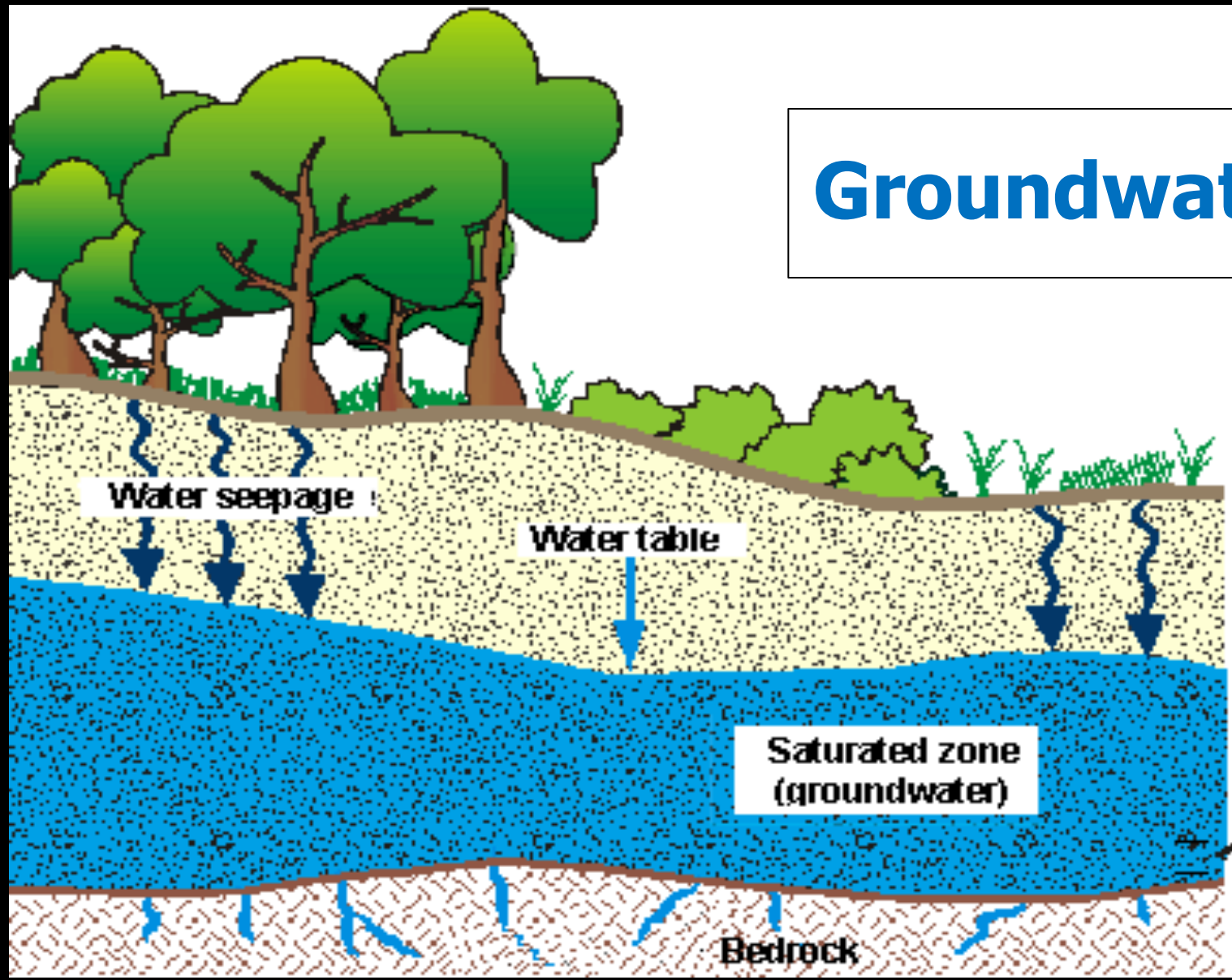
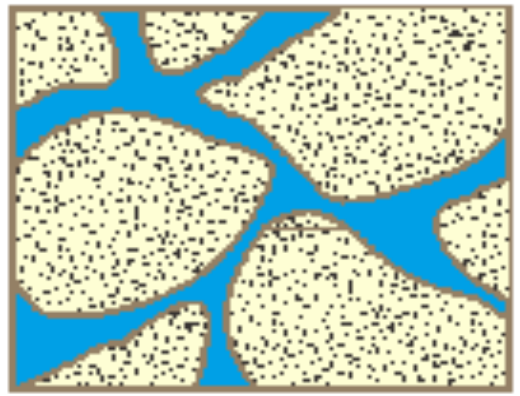
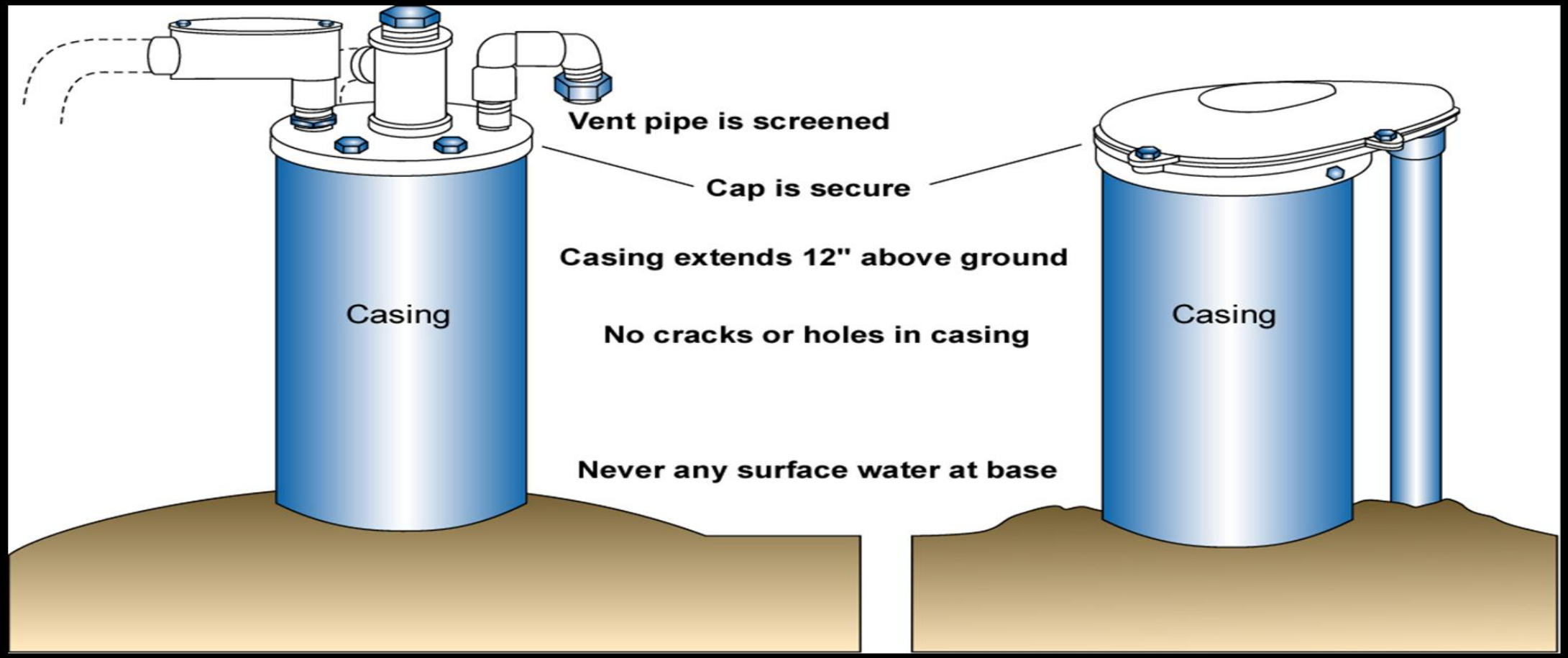
Groundwater is????



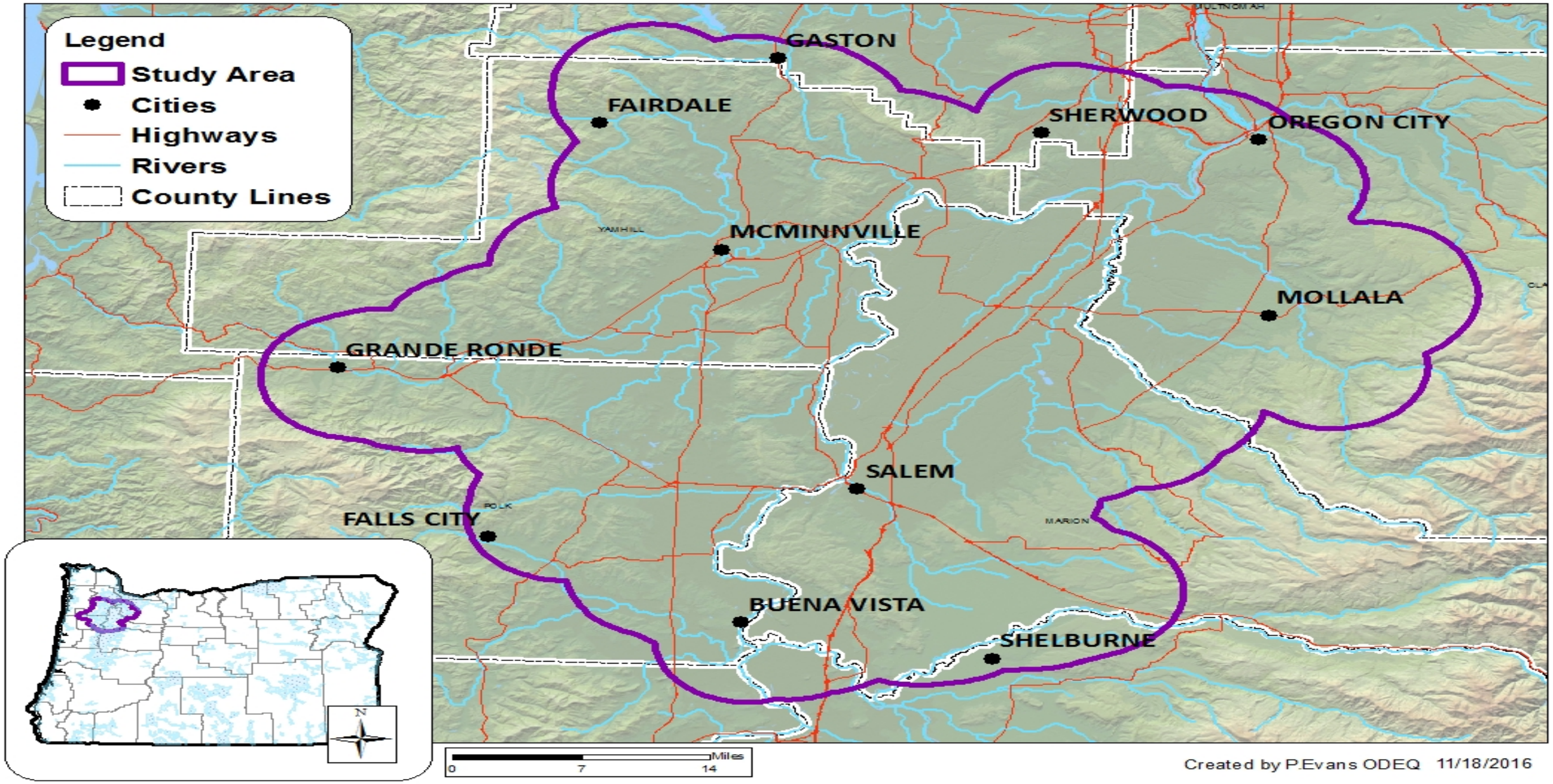


Pores filled with water

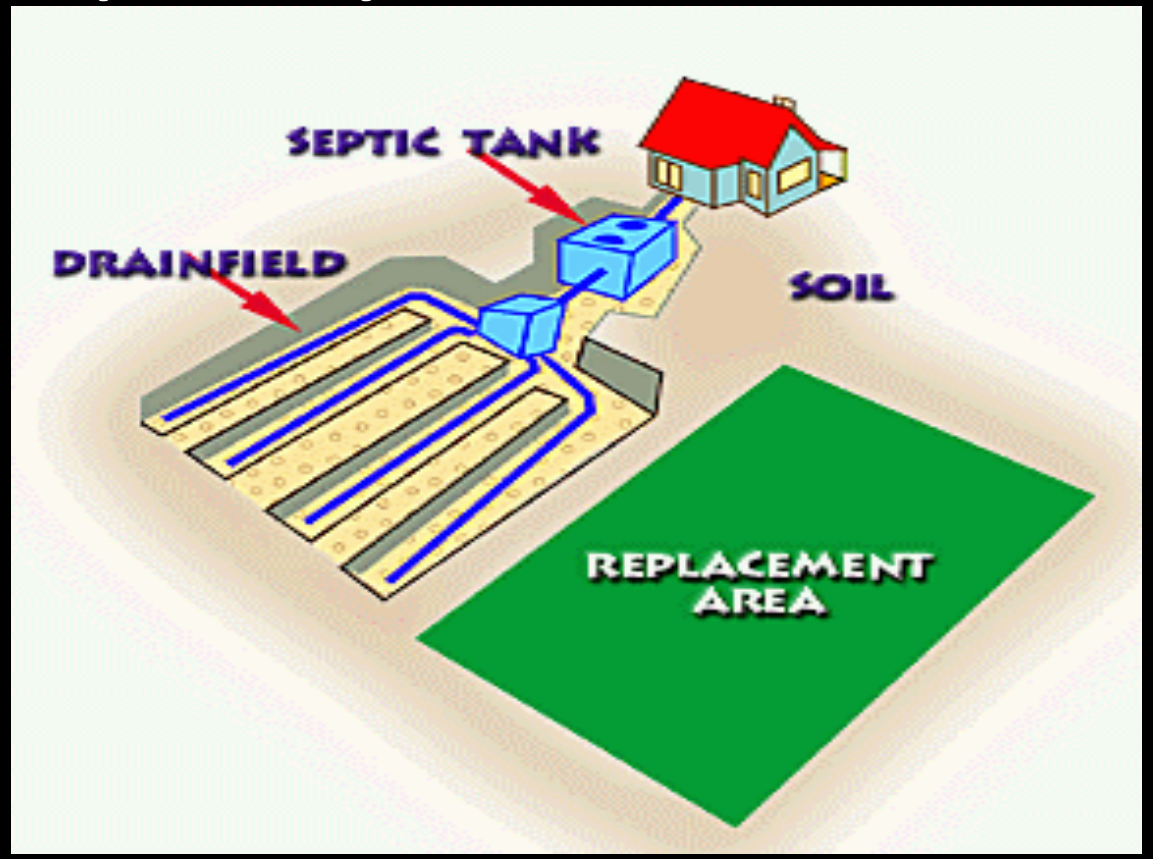
Well Inspection Points

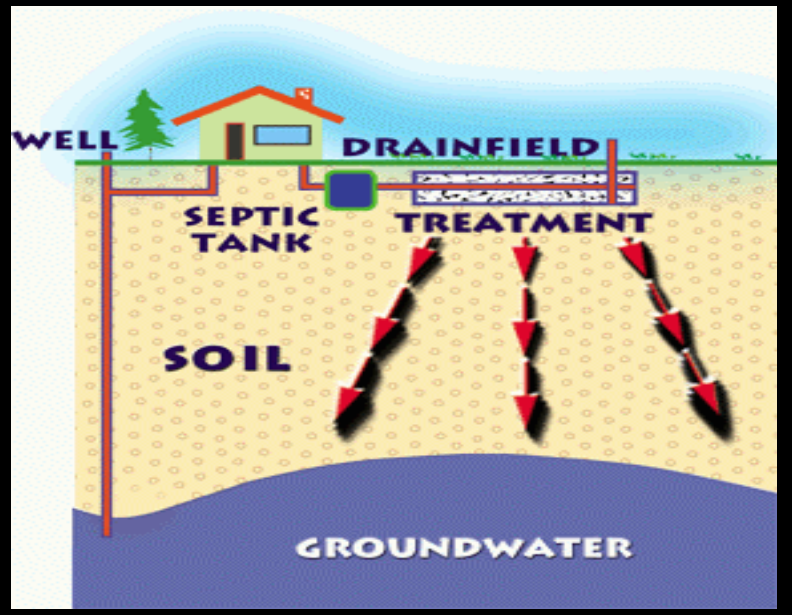


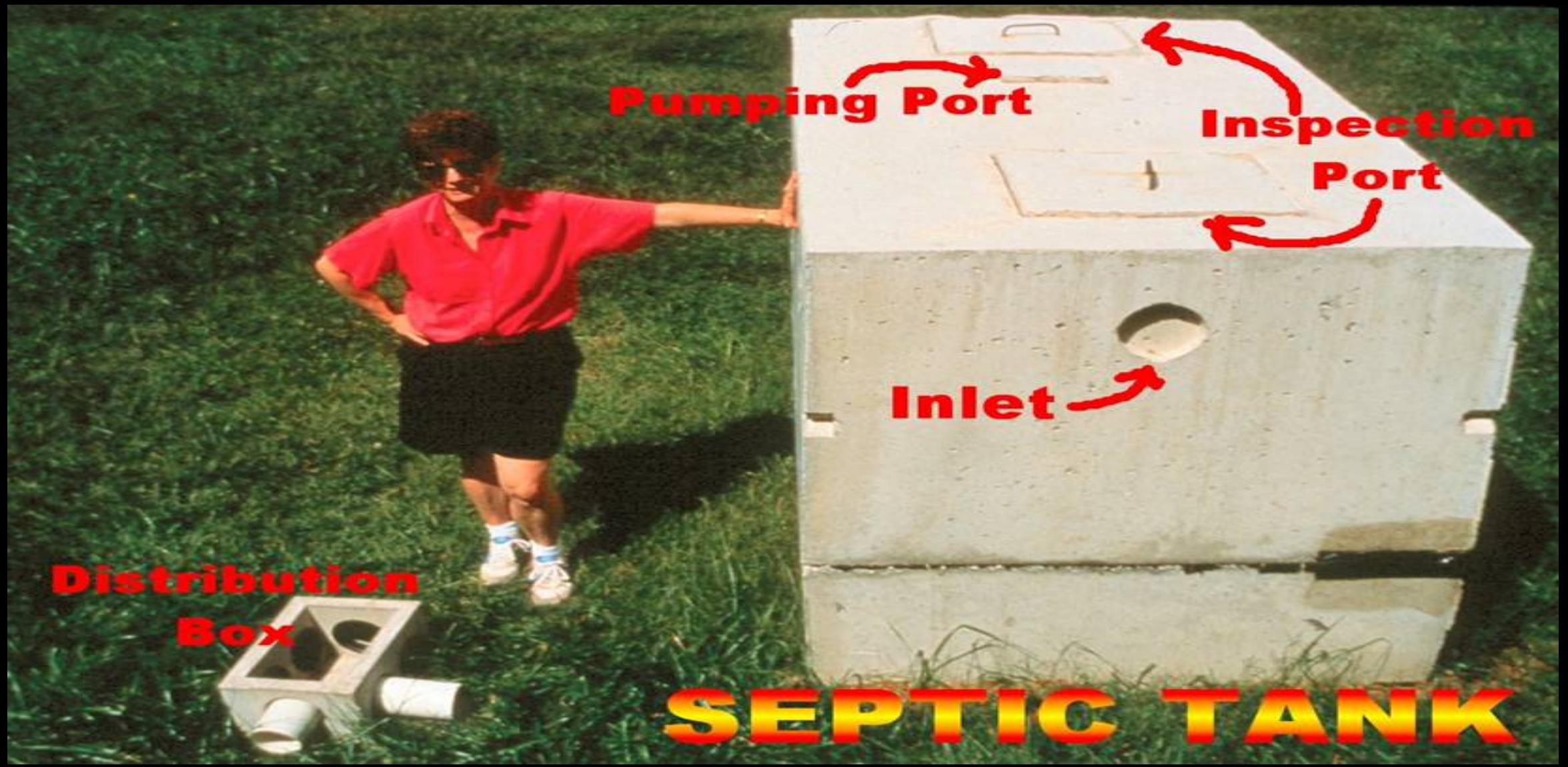
Opportunity for Testing from Oregon DEQ and Others



Components of Basic Septic Systems






Pumping Port
Inspection Port
Inlet
Distribution Box
SEPTIC TANK

To pump... or not to pump?

- Pumping costs about $350 to $500 for the average 1250-gallon tank, every three years or so
- A new drainfield costs from $5,000 for an in-ground system to as much as $30,000 for an engineered field

Use less household water

(if possible)

Benton County

The first story involves a family who purchased a home in Benton County a year before Oregon implemented testing wells for arsenic prior to a real estate transaction. Within a week of testing the client's home Benton County Environmental Health (BCEH) received results from Edge Analytical Laboratory stating the homeowner's well had levels of arsenic above the maximum contaminant level (MCL) of 10 ppb. The homeowner's were extremely concerned with results since they have young children (children are more susceptible to high levels of nitrates). After the initial shock of the results, the homeowner's discussed the possible abatement procedures. The last time we spoke with the homeowners, they were installing a reverse osmosis filter to decrease the amount of arsenic exposure to the family.

Table 1. County-level results following Domestic Well Safety Program operated by OHA with funding from CDC 2014-2016

County	Program	Recruitment	Results
Benton	Outreach events for health education; well inspections; free water testing	Farmer's markets, county fairs, science talks at public venues; Participants were 80% NH White, 50% college degree or higher, 33% well also used for livestock	119 tests 10% ≥ 10ppb arsenic 3% > 10ppm nitrate 0% E. coli present
Harney	Community awareness, provided distribution kits, discounted rates for testing	Radio, newspapers, flyers, county fair	84 tests 19% ≥ 10ppb arsenic 3% > 10ppm nitrate 6% E. coli present
Jackson	Community awareness, rapid nitrate screening events	Master Gardener Events, Women, Infants & Children (WIC) clinics	XXXXXXXXXx XXXX XXXXX XXXXXX

This story shows the importance of this program is about two wells on one proper-ty. One well is in a well house with a concrete floor and has an in-ground storage tank located just off the well house. The access to this large 1500-gallon water tank was loose and the cows kept knocking it off exposing the reservoir. This well feeds the house, so this is where we took our sample. The results came back positive for coliform, but negative for e-coli. After discussing the needs to seal the tank and addressed the leak that was dripping inside the well house; the team observed a dry pond and took a look at the other well closer to the house. This well is very short and sits on the edge of this currently dry pond between a drainage pipe from the road and a grey water drainpipe. The well had the seal removed and pump disconnected, leaving it exposed; next to the pond that floods every year. As a result, surface water was likely contaminating the aquifer. The homeowner was not aware that these two wells could cause any problems in the conditions that they were in. The participant was very happy to have the team out and do an assessment of their wells and to get recommendations for any corrective action that might be needed. They immediately started making the changes that were recommended at the visit.

Several years ago at the Southern Willamette Ground Water Advisory meeting I was approached by a woman who relayed this story. She told me she had several miscarriages due to elevated nitrates in her drinking water. They had placed a reverse osmosis water treatment device at their kitchen sink, but she continued to have miscarriages. The reason why the miscarriages continued? She liked drinking cold water from the water dispenser on her refrigerator. The water supply line was not installed before not after the water treatment device. Once this was discovered and corrected she was able to deliver a healthy baby. The last story illustrates the importance that homeowners understand the treatment technology being installed in their homes for it to be effective.

Partners

- Oregon Health Authority
- Oregon DEQ
- Environmental Protection Agency
- Health Departments
- SWCDs
- School Districts
- Non-profits