

QUESTIONNAIRE

Either true/false or multiple choice questions are presented. Circle your answer to each question.

1. A groundwater aquifer is a porous formation below ground that will yield enough water for economical use. **TRUE** or **FALSE**
2. The groundwater aquifer beneath the northern Sacramento Valley can best be described as a:
 - a. A large underground reservoir of freshwater, about 2500 feet deep, ranging from Red Bluff in the north to the Sutter Butte mountain range in the south.
 - b. Different geological formations. Some are porous sands and gravel layers that yield groundwater abundantly. Others are fine clay layers that yield much less water.
 - c. A series of underground freshwater streams and rivers networked together into one aquifer that extends from the Red Bluff in the north to the Sutter Butte mountain range in the south.
3. The Sacramento River intercepts the flow of groundwater across the valley so that groundwater on the east side of the river is not affected by groundwater on the west side. **TRUE** or **FALSE**
4. Some reasons for monitoring groundwater conditions are to:
 - a. Detect, as early as possible, declining groundwater levels, unwanted changes in water quality, or evidence of land subsidence.
 - b. Assure that all groundwater users pump equal quantities of water.
 - c. Determine groundwater flow directions and investigate factors that affect groundwater drawdown and recharge.
 - d. Both answers a and c.
5. Most irrigation and domestic wells can be used to monitor groundwater levels but the information is more useful if it is known at what depth the well perforations or screens are located. **TRUE** or **FALSE**
6. An electrical resistivity probe is a tool used by well drillers to:
 - a. Locate buried electrical lines before well drilling begins and prevent accidental injury.
 - b. Record the well drilling progress such as drilling depth, borehole diameter, and the vertical angle of the borehole.
 - c. Measure the electrical resistance of different water bearing strata in the borehole. Patterns of resistance are charted and used to identify the most porous, greatest water bearing depths for positioning and installing well screens. The resistance charts are often referred to as electric logs or e-logs.
7. The cable tool drilling method is the preferred method of well drilling while rotary and reverse rotary drilling are considered to be out-dated drilling methods. **TRUE** or **FALSE**
8. "Developing a well" refers to:
 - a. Properly locating the well site and using the most appropriate drilling method.
 - b. Repairing damage to the aquifer formation around the well screens or perforations caused by drilling and from fine materials in the gravel pack.
 - c. Using a dowsing rod to locate reliable and abundant sources of underground water.
9. A repair such as an impeller adjustment that improves the pumping plant efficiency of a motor driven pump from 50 % to 60 % will undoubtedly reduce your monthly power bill. **TRUE** or **FALSE**
10. A pump appears to be pumping less water than it once did. Valid reasons that may explain this decline in pump discharge include:
 - a. A worn or mismatched pump
 - b. An encrusted well screen or plugged well perforations
 - c. Declining groundwater levels
 - d. All of the above

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TEST YOUR KNOWLEDGE ABOUT GROUNDWATER, WATER WELLS, AND PUMPING PLANTS

This questionnaire is the beginning of a one-year educational effort coordinated by the University of California Cooperative Extension in Tehama County. It is designed for you to evaluate your own level of knowledge related to groundwater, water wells, and pumping plants and to assess the effectiveness of this educational effort. You are asked to complete this questionnaire, keep a copy for yourself, and return the original to the University of California Cooperative Extension. Re-fold the completed questionnaire so that the Cooperative Extension mailing address is visible and seal it with tape. Please note that postage is required.

Over the next 10 months, a series of fact sheets will follow, one fact sheet approximately every six to eight weeks. Articles will discuss topics touched upon in this questionnaire. At the end of this informational series, this same questionnaire will be re-distributed so you may re-evaluate your own knowledge of groundwater, water wells, and pumping plants. At that time, you will also be asked to return a copy of the questionnaire to Cooperative Extension to evaluate the effectiveness of the educational effort. Your responses will be handled with the utmost confidentiality. Hopefully, as a result of this information, each reader will have added knowledge and understanding about the groundwater resource in the northern Sacramento Valley.

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provided by the local water resources**

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Tehama, Glenn, Colusa, and Shasta Counties

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