

# Spokane County Water Availability Advisory Group Draft Recommendations

5/17/12

## Demonstration of Available Water prior to Issuance of a Building Permit

### *Current Practices*

The current standard for permit exempt wells is that a pumping test conducted over a 4-hour time period must demonstrate that the well can produce 1440 gallons in a 24-hour period (1 gallon per minute, (gpm)).

### *Issues*

The Spokane Regional Health District only requires reporting of well yield in gallons per minute as measured over a four hour period to satisfy water quantity requirements for issuance of a building permit. In reviewing the reports submitted from pumping test contractors, there is a wide variety of testing protocols and reporting details. Standardized testing procedures and reporting requirements could help identify the following problems:

- The water pumped during the four hour test is mostly from the well casing and not from the aquifer (this is primarily a concern with deeper wells).
- The well can sustain 1 gpm or more for 4 hours but cannot sustain that rate for longer periods.

One way to improve the assessment of water availability over time would involve graphing data from a pumping test to show the projected rate of drawdown. To complete this analysis, pumping test contractors would need to record well level and pumping rate measurements at regular intervals throughout the pumping test—preferably recording the well level every five minutes and the pumping rate every 10 minutes. If well pump contractors also change pumping rates, starting at a low flow rate of at least 1 gpm and increasing to higher flow rates 2-3 times over the course of the four hour pumping test, the resulting data could be easily graphed to show projected drawdown trends over time. This could be as simple as entering the data into a form provided on the County's website which will automatically generate a graph. If well pump contractors do not provide the incremental increases in flow, the data can still be graphed but the analysis is more difficult and would likely need to be graphed and analyzed by a hydrogeologist or another technical person.

The Advisory Group also discussed whether a longer pumping test would provide better data. The advice from the consulting hydrogeologist was that, while more data is always preferable, a four hour test provides enough data to complete the analysis. It is much more important for the well pump contractor to record the well level measurements and pumping rates at short intervals than to pump for a longer period of time.

The Advisory Group also noted that water availability is not an issue in many parts of Spokane County but is a critical issue in some locations. Consideration could be given to requiring more rigorous standards, testing procedures and/or reporting requirements within the areas of concern.

### *Options*

The Advisory Group considered a number of options, including:

- 1) Retain the status quo with no changes.

- 2) Increase the flow requirements from 1 gpm to a higher gpm requirement.
- 3) Require pumping tests of longer than four hours.
- 4) Require pumping data to be recorded on a standard form, including well level measurements that are recorded every five minutes and pumping rates that are recorded every 10 minutes.
- 5) In addition to the well level measurements described above (Option 2), also require a specific protocol for pumping tests that requires the well to be pumped at three or 4 constant rates (starting a minimum of 1 gpm) with incremental increases in the flow rate.
- 6) Approve building permits if the analysis of the submitted data from the pumping test indicates that 1 gpm can be sustained for more than seven days.
- 7) Establish geographic zones of concern (or overlay zones) in areas where water availability is a concern. Within these zones, consider requiring more rigorous standards, as well as more rigorous testing and reporting requirements, than in the rest of the county.

### *Potential Recommendations*

- 1) The Advisory Group recommends that Spokane County require pumping data to be recorded on a standard form. The data sheet should include a cover sheet that provides basic information about the well, the owner, and the appropriate technicians (pumper, driller, hydrogeologist). Spokane County should also require pumping tests to follow a specified protocol of pumping at 3 to 4 different constant rates, starting at a minimum of 1 gpm and moving from low rates to high rates. Recording of water levels should be required at 5 minute intervals, and recording of pumping rates should be required at 10 minute intervals. The data would be digitally graphed and the County would approve building permits if the trend indicates that 1 gpm can be sustained for more than 7 days.
- 2) The Advisory Group recommends that Spokane County consider establishing geographic zones of concern for water availability. Once these zones are established, Spokane County should require more rigorous testing for water availability within these zones.