

Presented by Molly Erickson  
at 11/21/11 Board Meeting  
Item 16

**SETTING #2:**  
**PROCEDURES FOR WELLS IN THE CARMEL VALLEY UPLANDS OR  
OTHER FRACTURED/CONSOLIDATED BEDROCK FORMATIONS**

**Step 1, Test Length.** Pumping tests for wells completed in the Carmel Valley uplands bedrock complex or fractured/consolidated bedrock formations in other locations shall be for a minimum of 72 hours. If pre-testing is conducted to determine the proper pumping rate, the formal constant-rate pumping test shall be delayed until at least twice the pre-testing time has elapsed to allow water level recovery from the pre-testing.

**Step 2, Documentation of Drawdown and Recovery.** Drawdown and recovery data in the pumping and monitor wells shall be documented in a summary table(s) and shall include: static water level, flow meter totalizer readings, clock time, elapsed time since pump start (minutes), pumping water levels (feet below ground surface or specified reference point), drawdown (pumping water level minus static water level), elapsed time since pump stop (minutes), residual drawdown (non-pumping water level minus static water level). Water level recovery data shall be measured until the recovering water level in the pumping well reaches 95% of the pre-test static water level. If 95% percent recovery is not achieved after two times the pumping period has elapsed, then an evaluation of the test will be conducted by the District to determine whether or not the calculated yield should be reduced.

**Step 3, Calculation of Specific Capacity.** The transmissivity shall be determined and the specific capacity calculated from the test drawdown data. If casing storage effects<sup>16</sup> are suspected to influence early test data from the pumping well, these effects should be factored out of the transmissivity determination. If the apparent transmissivity decreases between the first half of the test and the end of the test, the 24-hour specific capacity shall be adjusted by multiplying the ratio of late-time transmissivity to early-time transmissivity.

**Step 4, Calculation of Available Drawdown.** Unless an alternate methodology is authorized in advance, available drawdown for setting #2 is defined as:

one-third of the vertical distance from the static water level to the bottom of the well perforations (i.e., well screen).

**Step 5, Calculation of Yield.** Unless modified as per Step 2 above, the yield of the well shall be calculated by multiplying the 24-hour specific capacity by the available drawdown. The well yield represents the theoretical maximum sustainable pumping rate for the well.<sup>17</sup> A well yield of 3 GPM per single-family dwelling is the minimum

<sup>16</sup> For an example discussion of casing storage effects, see *Groundwater and Wells* (Driscoll, 1986, page 232).

<sup>17</sup> The well casing size, pump size and discharge pipe size are factors that will influence the maximum sustainable pumping rate of a well. These factors may limit achieving the calculated well yield in practice and should be considered in the *Assessment*.