# Municipality of Anchorage

**Development Services Department**

On-Site Water and Wastewater Section
4700 Elmore Road
Anchorage, AK 99507
www.muni.org
(907) 343-7904


## AQUIFER EVALUATION AND TESTING GUIDELINES

The following is a recommended procedure for conducting an aquifer test within a proposed subdivision to be served by on-site water systems.

Three water wells should be drilled on three adjacent lots within the proposed subdivision. (An existing well on an adjacent property may be used for one of the wells in this test with the prior approval of the Development Services Department.) The hydrogeologist or engineer should determine the separation distances between these wells, which should be between 50 and 300 feet. Larger separation distances may be justified based on information obtained when drilling the first well. Final well layout should be approved by the Development Services Department prior to conducting the test.

Pump the central well for a period of 2 to 4 hours to obtain data to determine the approximate transmissivity of this well. After allowing the well to recover for at least 90% of the measured drawdown, a longer pump test is to be conducted. This pump test should be for a minimum duration of 24 hours for confined aquifers and 72 hours for unconfined aquifers.

The pump test should be conducted at a rate that will cause 70% or greater drawdown in the well. During this pumping test, the remaining two wells should be monitored, and data collected to determine the aquifer transmissivity, the storage coefficient (if possible), the long-term production capacity of the aquifer and the likely or predicted impact on surrounding wells. Following the 24-hour pump test, each well should be monitored during the first 24-hours of recovery. Data from the recovery test should be used to verify the aquifer transmissivity.

If either of the other two wells does not draw down during the initial aquifer test, these wells will also be tested with a longer drawdown test following the procedures above. Otherwise, pump the other two wells for a period of 4 to 8 hours to determine their approximate transmissivity and long term production capacity.

All data obtained from these tests should be submitted to the Development Services Department along with a summary and interpretation done by the engineer or hydrogeologist.

All testing should be conducted according to minimum industry standards. This Department recommends that procedures and data collection follow those outlined in Groundwater and Wells, Third Edition by Robert Sterrett, 2007.