

KINGWOOD TOWNSHIP THREE PART PUMP TEST CHECKLIST

APPLICANT: \_\_\_\_\_ Road Name: \_\_\_\_\_

TAX MAP Sheet/Block/Lot \_\_\_\_\_ Date Submitted: \_\_\_\_\_

Phone: \_\_\_\_\_ Email: \_\_\_\_\_

Signature of Applicant: \_\_\_\_\_

<p><b>TO ALL APPLICANTS:</b> If your application lacks any of the below requirements, circle the items and in the remarks column, provide an explanation</p>	<p>THREE PART PUMP TEST</p>	<p>REMARKS</p>
<p><b>PROPERTY OWNER RESPONSIBILITY</b></p>		
<p>1 <b>Property Owner Notification.</b> Owners of existing wells on lots located within 200 feet of the property boundary of a proposed new or altered well, as applicable to § 153-25.1 Table 1, shall receive notification of the scheduled well test(s) from the applicant, via certified mail and regular mail, four (4) weeks prior to the well test date. The applicant shall obtain a certified list of all property owners within 200 feet of the property boundary from the <b>Township Tax Assessor</b>. If the lot that is the subject of the application is a flag lot, the distance indicated previously in this subsection shall be measured from the main body of the lot, and the "stem" of the flag lot shall not be included in calculating such distance.</p>	<p>YES</p>	
<p>2 <b>Period of Performance.</b> Evaluation of General Requirements. Failure to adhere to general requirements will invalidate the test results. <b><i>Pumping tests shall be performed from July 1 through October 31</i></b> to adequately account for seasonal effects on aquifer levels and the associated changes to ground water hydraulics (e.g., changes in transmissivity in leaky or semi-confined aquifers and unconfined aquifers as aquifer water levels change).</p>	<p>YES</p>	

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<p>3 If the pumping rate has not varied by more than 0.2 gpm for at least the last hour of the test, the yield shall be determined to be equal to the measured pumping rate. To allow for long-term fluctuations of water availability from the aquifer, caused by variations of precipitation, competition from other ground water users or other factors, the minimum requirements of Table 2 for Constant Rate Test results shall apply to all new or expanded residential or non-residential uses. For non-residential or multi-residence use, minimum water requirements of <u>N.J.A.C. 7:10-12.6</u> govern, and each 200 gallons per day requirements or fraction thereof shall be considered equivalent to one bedroom for the purpose of the Constant Rate Test. An aquifer contribution of at least 0.5 gpm shall be required for each bedroom equivalent for non-residential use.</p>	<p>YES</p>	
<p><b>CONTRACTED DRILLER'S RESPONSIBILITY</b></p>		
<p>1 <b>Supervision.</b> All well tests shall be conducted under the supervision of a Certified Well Driller, or Certified Pump Installer licensed under the laws of the State of New Jersey, who shall certify the results to the Administrative Authority. All test results shall be recorded on "Kingwood Township Well Testing Report" forms to be issued by the Administrative Authority.</p>	<p>YES</p>	

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<p>2 <b>Precipitation.</b> The pump test or aquifer test shall not be conducted during a precipitation event or events in which total precipitation exceeds or equals 0.5 inches. Precipitation must be recorded with a National Weather Service acceptable rain gauge on site during all phases of testing and measurements for each day must be included in the hydrogeologic report. If precipitation occurs during the test, the applicant should provide precipitation amounts and sufficient data to show that the precipitation did not recharge the aquifer during the test and bias the testing results. If precipitation amounts exceeding 0.5-inches are recorded at the Lot in question, the test must be repeated, or technical documentation provided that clearly shows that the precipitation event had no impact on ground water levels throughout 24 hours before, and during the test.</p>	<p>YES</p>	
<p>3 <b>Flow meter.</b> Flow rates at the discharge line must be measured with a water flow meter. A valve must also be on the discharge line in order to permit adjustment of the flow rate.</p>	<p>YES</p>	
<p>4 <b>Discharge.</b> The discharged water must be channeled away, at a minimum distance of 100 feet, from the wellhead to minimize direct recharge of the well during the test. Any and all permits required by the NJDEP for the discharge of water must be obtained prior to starting the test.</p>	<p>YES</p>	
<p>5 <b>Dip tube.</b> All test wells must have a "dip tube" installed in order to allow accurate measurement of the water level during the pump test. The water level must be measured to the nearest tenth of a foot from a fixed point (measurement point); e.g., from the top of the well casing.</p>	<p>YES</p>	

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<p>6 <b>Technique.</b> The three-part pump test must be performed in one continuous operation as specified in § 153-28.2, § 153-28.3, and § 153-28.4. The test well must be at its Static Water Level at the beginning of the test, i.e., the well has to be undisturbed for at least 72 hours before testing. If the test sequence has to be interrupted for technical reasons, the well must be pumped to the drawdown observed just prior to the interruption before the test sequence can be resumed. If more than 24 hours lapse during interruption, the entire test must be rerun.</p>	<p>YES</p>	
<p>7 <b>Test Protocol.</b> To perform the Peak Demand Test, the well is pumped at least at the Peak Demand Rate until the Peak Load has been delivered. The duration of pumping equals the Peak Demand Time (see definitions section). The water level shall be measured and recorded, at a frequency of every five (5) minutes during the test.</p>	<p>YES</p>	
<p>8 <b>Test Protocol.</b> The Constant Rate Test is undertaken in sequence with the Peak Demand Test regardless of whether or not the well passed the Peak Demand Test. The pump discharge rate should be as close as possible to the Peak Demand Rate, but the main objective is to achieve a stable water level while pumping. A constant head condition exists where the water level does not change more than 0.5 feet (six inches (6")) per hour under a constant pumping rate. The water level shall be measured and recorded, at a minimum frequency of every five (5) minutes during the test. The Constant Rate Test is run for a full four (4) hours. Water quality evaluation must be done during the constant rate test as defined in 153-29I.</p>	<p>YES</p>	

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<p>9 <b>Well Recovery Test.</b> The water level is recorded at the end of the pumping phase (§ 153-28.3) before turning off the pump. After the pump is turned off, water level recovery begins as the aquifer recharges the well. The water level shall be measured and recorded, at a minimum, every five (5) minutes during the first 30 minutes of the test. The Well Recovery Rate is calculated from these water level measurements, measured in gallons per minute (gpm), using the following equation (for a six (6) inch inside diameter well casing): Well Recovery Rate equals (well level at time 1 (feet) less water level at time 2 (feet) times 1.5 gallons/foot over recovery time 1- recovery time 2 (minutes).</p>	<p>YES</p>	
<p><b>WITNESSING AND EVALUATION OF RESULTS Township Hydrogeologist</b></p>		
<p>1 <b>Witnessing.</b> The Administrative Authority reserves the right to witness all well tests. A minimum of two working days Advance Notice of Test Dates shall be provided to the Administrative Authority. The Administrative Authority reserves the right to allot testing dates in case of scheduling problems.</p>	<p>YES</p>	
<p>2 <b>Three-Part Pump Test.</b> The capability of a well to meet the peak demand and the total daily requirements of its user shall be evaluated through a three-part pump test. The three parts are the Peak Demand Test (§ 153-28.2); Constant Rate Test (§ 153-28.3); and Well Recovery Test (§ 153-28.4). The well must pass the Constant Rate and Peak Demand Tests as required for the size of the facility to be supported by the well. The result of the Constant Rate Test shall determine, according to § 153-28.3.c, the maximum size of the proposed residence or non-residential facility to be supported by the well. The result of the Well Recovery Test provides additional data about the suitability of the well for extended use.</p>	<p>YES</p>	

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<p>3 <b>Evaluation Results.</b> To pass the Peak Demand Test, the well must not be drawn down anytime during the test to a level less than five (5) feet above the pump intake or to a level less than thirty feet (30') above the bottom of the well, whichever is higher. If the results of the Peak Demand Test are unsatisfactory, the well may be altered or used in conjunction with additional wells, or the design of the proposed facility must be so modified as to lower the Peak Load requirements sufficiently to accommodate the performance of the well.</p>	<p>YES</p>	
<p>4 <b>Results.</b> The minimum acceptable well recovery rate for Certification of Well is one half (0.5) gpm averaged over the first 30 minutes of recovery. If the well fails to achieve this, the test shall be repeated to ensure that all steps were undertaken correctly. If it fails a second time, the well should be deepened or re-drilled at a different location. Deepening the well may result in encountering additional water-bearing fractures. Generally, if the well depth exceeds 500 feet, the chances on encountering additional water-bearing fractures are minimal. If a replacement well is drilled and fails to pass this test, it may be possible to use both wells in combination to meet the expected demand if the well-recovery rate of both wells together exceeds 0.5 gpm. A well which fails to achieve this recovery rate due to drawdown of less than 5 feet during the pumping phase shall be deemed acceptable.</p>	<p>YES</p>	