

Technical Guidance 6 - Assessment of Aquifer Properties for Water Use Determinations

Document Section(s)	Issue	Stakeholder Comments/Recommendations	Ministry Response
Aquifer yield	Pump test	The use of the term 'practical' when discussing a pumping test is quite subjective. Can some additional wording be included to put this into context?	Given the high variability in site conditions, the ministry relies on the judgement of the qualified professional to determine when a pumping test is not practical. The ministry expects the qualified professional to document the rationale for the use of alternate methods.
Aquifer yield	Pump test	Can the Ministry provide a reference for its expectations when completing a pump test as this can wide-ranging – we've seen multi-day pump tests on one hand and we've seen short-term pump tests from a monitoring well on the other.	<p>Pump test requirements are highly site-specific and depends on the size of the site, the extent of contamination and the local hydrogeology. The ministry relies on the judgement of the qualified professional when planning, executing and analysing pumping tests and expects documentation and rationale being presented when alternative methods are being used.</p> <p>Note that the required yield estimate for bedrock aquifers does not necessarily require a full-scale pumping test. Instead, the ministry suggests a simple approach to evaluate the yield; i.e. using a peristaltic pump in a 2" well and observe the water level when pumping at 1.3 L/min. The yield estimate (i.e., above or below 1.3 L/min) is used to confirm the measured K-value and required due to the uncertainty related to measuring K in bedrock using slug tests. The ministry acknowledges that this method does not solve the uncertainty related to characterizing fractured bedrock using 2" wells screened over a relatively short depth interval, but it provides a second measurement of the aquifer's viability.</p>
Aquifer yield	Pump test	Conducting a pump test in an urban setting could get complicated with discharge requirements to municipal sewers, particularly if the case a 24-72 hour pump test, as discussed in the "BC Guide to Conducting Well Pumping Tests". Additionally, this document discusses needing to assess drawdown impacts on adjacent properties, which would another level of complication.	See response above.
Aquifer Yield	Pump test	<p>We request that the BC MoE provide guidance on aquifer yield testing (Appendix B?), including:</p> <ul style="list-style-type: none"> - What is the minimum diameter of well that must be used to do the pump test (i.e.: 2 inch, 4 inch or 6 inch diameter)? - What are the construction details of the well (filter pack, screen slot size, screen length)? 	See response above.

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		<ul style="list-style-type: none"> - Can a monitoring well be used to perform the yield test, or does a drinking water well need to be constructed at the site? - How long should the pump test be performed? - Type of pump used and pumping rate? - Disposal of water generated from pumping test? - How should the pump test data be analyzed? 	
Aquifer yield	Bedrock	With respect to the 500 m radial distance for bedrock aquifer testing, is this data easily obtainable?	To assist stakeholders when evaluating water uses, different mapping initiatives are available. These include CSAPs “Contaminated Site Legal Instrument Mapping” and the ministry’s Borehole Log Database found on IMapBC. The borehole database includes selected hydraulic data from contaminated sites. New boreholes are added to the database as they become available to increase the inventory. Copies of technical reports can be obtained through the ministry’s Site Information Advisor.
Appendix 1	Equations	For equations 3a and 3b in Appendix 1, it would be preferable to provide these in the context of a typical 2-inch well.	The ministry expects the qualified professional to document the rationale for the use of alternate methods (e.g. calculations for a 2-inch well).