HANSON
VAN VLEET, LLC
GEOLOGISTS & WATER SUPPLY CONSULTANTS

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"Wet Basements - Who's at Fault?"

Hanson Van Vleet, LLC has been asked by the Town of Wilton to provide information to the Town residents regarding the high water table conditions that have been impacting resident's basements throughout the Town. Hanson Van Vleet, LLC is a geologic and hydrogeologic consulting firm, specializing in groundwater and water supply services, including; dewatering, groundwater supply, groundwater resource exploration and development, aquifer evaluations, water well design and construction and well field management services. We have extensive experience in the geology and hydrogeology of eastern New York State and specifically the Town of Wilton.

Over 40 residents of the Town of Wilton have been dealing with wet and flooded basements in recent weeks. In many cases residents have lived in their homes for years, (10, 20 or more years) and never experienced wet or water in their basements and/or at least never experienced water in their basements to the extent they have this spring. Let's just say you are not alone, many residents of Saratoga County and the entire northeast are experiencing the same issue, but why?

The inter-relationship of the geology, hydrogeology and weather (predominately precipitation) are the primary causes of these issues. The majority of the Town of Wilton overlies an unconsolidated formation made up of sand overlying clay that was deposited in a huge lake; referred to as Lake Albany, during the melting of the glacier during the last ice age. In some areas the sand was reworked by winds into sand dunes after the lake receded. The upper most part of this formation is generally sand, which overlies a thick deposit of clay. The depth to the clay deposit varies widely throughout the Town of Wilton. Drilling data shows the depth to the clay deposit ranging from as shallow as 35-feet to as deep as 100-feet, but it may have greater variations in other areas of the Town.

An unconfined or what is referred to as a water table aquifer is present within the unconsolidated sands underling most of the Town of Wilton. This type of aquifer is basically groundwater within the spaces in the sand formation sitting on top of the clay deposits. The clay deposits prevent the groundwater from moving any deeper into the underlying formation. The groundwater within the aquifer moves slowly from areas of higher topography toward areas of lower topography. The aquifer is recharged primarily by precipitation falling on the ground surface and infiltrating into the ground. Under normal conditions the recharge to an aquifer is generally in equilibrium with the discharge of an aquifer. However, under certain conditions, such as higher than normal precipitation, the recharge to an aquifer can exceed the discharge of the aquifer, the result being an increase in the elevation of the water table.

Historical precipitation data collected from the Glens Falls Airport and Glens Falls Farm, Soil Conservation Service site (the nearest continuous recording stations) was obtained from the

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Northeast Regional Climatic Center. The last 26 years of data (since August 1980) was reviewed to determine seasonal and annual trends that could have an impact or influence on groundwater levels. Annualized averages from August through July were reviewed along with monthly averages. The monthly and annual total precipitation is shown on the included table. The average annual precipitation over the last 26 years is 38.73 inches, including the current year. Excluding the August 2005 through July 2006 annualized data; the precipitation has ranged from a low of 27.69 inches in 1980-81, to a high of 48.97 inches in 1981-82. The total precipitation from August 1, 2005 through July 31, 2006 was 61.21 inches. The past year has seen unprecedented precipitation rates, 58 % higher than the average, and 25 % more than the highest precipitation recorded over the past 26 years. Currently from August 1, 2006 through April 22, 2007 the total precipitation is 40.81 inches, which already exceeds the average annual precipitation over the past 26 years. High precipitation rates over the past year and a half have resulted in water table levels that are well above normal. The high precipitation rates during the spring of 2007 along with rapid snow melt have exacerbated the problems associated with the already elevated water table.

Historical water level data collected from wells within the Town of Wilton indicates the depth to groundwater (the water table) is generally 8 to 15-feet below the ground surface in those areas monitored. The high precipitation recorded over the prior year and the recent precipitation and snow melt during the spring of 2007 have seriously impacted the water table within the Town of Wilton. Documented water level data collected from two wells in the Jones Road area have shown a significant increase in the water table elevation over the past year. The water table rose almost 3-feet in well # 1 from March 2, 2006 to April 10, 2007. Well # 1 had a depth to water of 8.1-feet below grade on March 2, 2006 and a depth to water of 5.2 feet below grade on April 10, 2007. A rise in the water table of almost 3-feet is significant and sufficient to impact basements that are typically dry. The other well in the Jones Road area rose 2.3 feet from March 2006 to April 10, 2007. Again, a rise of 2.3 feet could be significant enough to impact a basement that has never had water issues in the past.

In summary, we are currently dealing with what may be unprecedented historical high water table levels cause by high precipitation rates over the past year. The lack of a deep frost over the winter of 2007 may also have influenced a more rapid infiltration of precipitation and snow melt. Whether this can be attributed to global warming or just a natural cycle we don't really know. What we do know is that the water table elevation in many areas of the Town of Wilton is higher that ever recorded through no fault of anyone except nature.

If you have any questions specific to the elevated water table within the Town of Wilton you may contact us at (518) 371-7940.