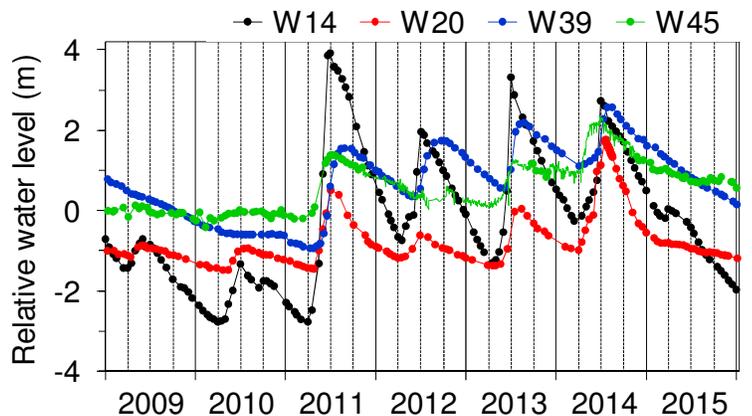
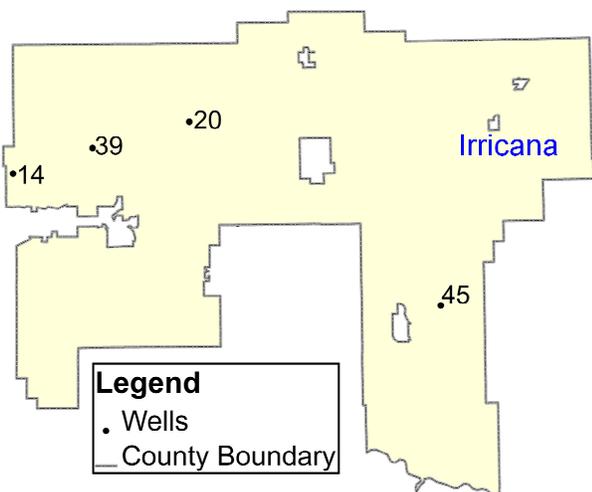




Newsletter for Rocky View County Community-Based Groundwater Monitoring Program
Reporting progress and updates of the program to community volunteers.

Drop in Groundwater Level during the Dry Summer

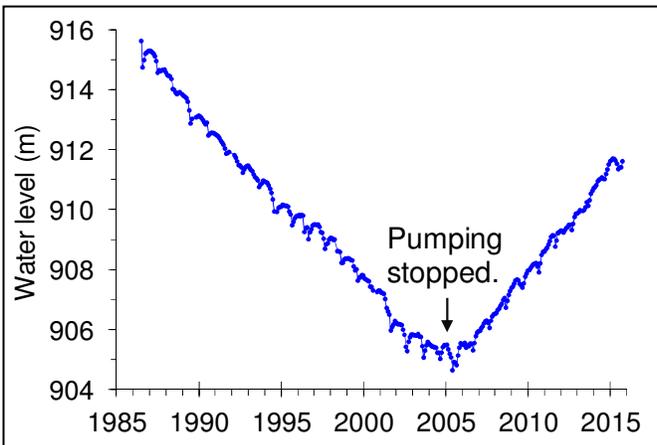
In the last edition of Groundwater Connections (December 2014), you heard about high groundwater levels in Rocky View County due to the wet conditions of 2013 and 2014. The dry spring and summer of 2015 meant much less rain was added to the soil compared to average years. This resulted in no or little replenishment (or recharge) of groundwater, which brought the water level down considerably (please see the diagram below). This is part of the natural cycle of wet and dry years, which we the prairie folk are all familiar with. For sustainable management of groundwater resources under increasing demands, it is important to have a good knowledge of natural variations, such as shown in the diagram. We are fortunate to have the long-term data set collected and reported by the volunteers in Rocky View County, which is quite special in Canada and other countries. Thank you for all your time and efforts! This unique case study of setting up and maintaining a community-based groundwater monitoring program has been presented in many national and international conferences, and a scientific article describing the success story of Rocky View Well Watch is going to be published in the international scientific journal on groundwater called Groundwater in March 2016. You can see more graphs of groundwater levels by visiting the Rocky View Well Watch website (<http://rockyview.geocens.ca/>), and learn more about groundwater conditions in our county and the rest of the prairies region in the



Map showing the location of selected wells within

Irricana Groundwater Story – Case Study of Over-Pumping

We sometimes hear anecdotes of declining groundwater levels caused by excessive pumping, but well-documented case studies are rare in Alberta. A graduate student from the University of Calgary, Liz Munroe examined historic groundwater level and pumping data in the Town of Irricana (see the map above). She also conducted a field experiment, called pumping test, to see how water levels in the bedrock aquifer underlying the town and surrounding farms responded to 48 hours of continuous pumping. She found that water levels in the Irricana aquifer dropped by more than 20 m as the town water supply wells kept pumping water (see the diagram below). The amount of pumping was much smaller than the amount permitted in the groundwater extraction license, yet the water level dropped so much by 2004 that it was impossible to pump more. The town switched to surface water supply in 2005 and water level started to recover. From the 48-hour pumping test results, Liz determined that the Irricana aquifer had a much smaller volume than originally thought, and the smaller aquifer volume was the most likely reason of steady water-level decline. This study highlighted the importance of long-term water-level monitoring for sustainable groundwater management. The approach use in Rocky View Well Watch will be useful for this purpose in other regions in Alberta.



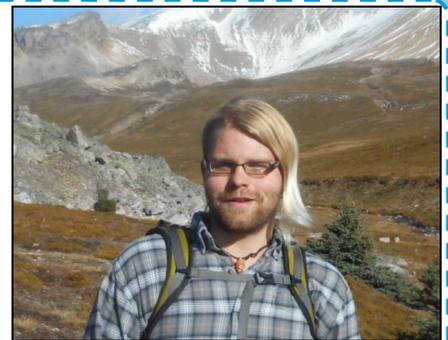
Elevation of groundwater level in the Irricana aquifer monitored in Government of Alberta observation well.



Former coordinator of Rocky View Well Watch, Shelby Snow helping the 48-hour pumping test in Irricana.

New coordinator for Rocky View Well Watch

Shelby Snow, the previous project coordinator, left Calgary last July to start her new career in Chilliwack. Brandon Hill was hired as her replacement and began training to fulfill the role in June 2015. Brandon was born in Calgary, but grew up on an acreage east of Strathmore, AB. He returned to Calgary to study at the University of Calgary, graduating with a Bachelor of Science in 2014. Prior to working with the university he was employed with Waterline Resources as a Junior Hydrogeologist. He has thus far enjoyed his time working at the university, and is excited at the prospect of managing the various projects supervised by Masaki Hayashi.



New coordinator, Brandon Hill at a hydrological study site near Helen Lake in Banff National Park.

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