



Update on Groundwater

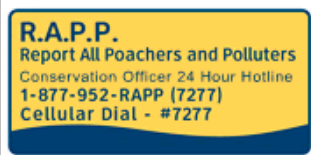
This report is prepared for you by the water management teams within the *Ministry of Environment and Climate Change Strategy (ENV)* and the *Ministry of Forests, Lands, Natural Resource Operations & Rural Development (FLNRORD)*.

In the December 2020 issue:

- Technical Assessment Guidance – Version 2
- 2019/2020 Groundwater Compendium
- Groundwater Wells and Aquifers (GWELLS) - Update
- Provincial Government Groundwater Program Regional Update
- Groundwater Staff Contact List

Report Non-Compliance

Have you noticed a well that does not meet the construction standards of the Groundwater Protection Regulation? Know of someone who is drilling a well or installing a well pump without being registered?



Contact Us

The contact information for various groundwater staff across the province is available in every newsletter. We look forward to industry reaching out to us directly with questions.

Technical Assessment Guidance – Version 2

The Province of British Columbia recently updated the *Guidance for Technical Assessments in Support of Applications for Groundwater use in B.C. Version 2*

(<https://www2.gov.bc.ca/gov/content/environment/air-land-water/water/water-science-data/water-science-series>).

This document was originally published in 2016 after the *Water Sustainability Act* came into force. The document provides guidance to new groundwater use applicants and hydrogeology professionals so they may provide the appropriate level of analysis typically required by Statutory Decision Makers on water applications. The guidance was updated to Version 2 following a review and engagement period to better respond to operational needs and address gaps.

Any questions can be directed to groundwater@gov.bc.ca.

2019/2020 Groundwater Compendium

The Province of British Columbia recently released the *Compendium of Provincial Groundwater Science and Monitoring Projects: 2019-20*

(<https://a100.gov.bc.ca/pub/acat/public/viewReport.do?reportId=58974>).

The primary goal of the provincial groundwater science program is to increase a shared understanding of the groundwater resources in British Columbia. As the Province moves forward with the implementation of groundwater licensing under the *Water Sustainability Act (WSA)*, there is an even greater need to improve the level of scientific knowledge of aquifers, groundwater availability and the interactions between surface water and groundwater in a transparent and accessible manner. This shared knowledge is critical to support the sustainable management of groundwater and to support science-based decision making.

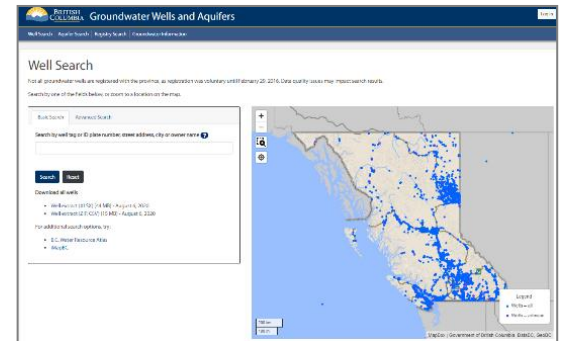
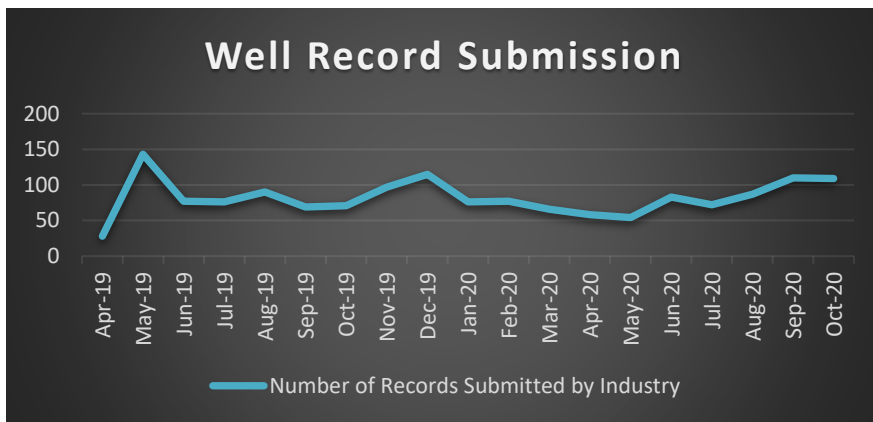
This compendium is published under the Water Science Series to bring together a compilation of short summaries of the groundwater science and monitoring projects supported by the province during the 2019-20 fiscal year. The intent is to communicate to a wide audience the nature of the projects undertaken and to provide a quick overview of the project results. Links to key personnel and additional reporting are provided within each summary for anyone who might require more detailed information.

Groundwater Wells and Aquifers (GWELLS) - Update

The Province of British Columbia continues to make improvements to the Groundwater Wells and Aquifers (**GWELLS**) application in order to support access to groundwater and aquifer data and information.

Have you encountered a bug? Do you have ideas on how we can improve GWELLS? Send your suggestions to gwells@gov.bc.ca!

Submit your well records online



The Province of British Columbia is moving towards online submission of well construction, alteration, and decommission reports.

There are currently over 40 industry members with access to the GWELLS application, including well drillers, well pump installers and consultants, submitting on average 80 well records per month.

Benefits of submitting your reports online include:

- faster and more accurate data entry of well records;
- quick access to well records for clients and proof of compliance with regulations;
- promotion of your company by pointing clients to previously submitted well records, showcasing your registration as well drillers and well pump installers with British Columbia; and,
- improved access to well and groundwater information for everyone, including following artesian well data for better resource management.

Get access in three easy steps:

1. Visit the [GWELLS BCeID registration](#) page to obtain either a Basic BCeID account or Business BCeID account. (Note, if you already have a Basic or Business BCeID account, you do not need to create a new one to access GWELLS)
2. After obtaining your BCeID, go to [GWELLS](#) and select the login button (top right of the application screen).
3. Once you have logged in, email gwells@gov.bc.ca to request access for your BCeID user account.

Once access has been granted, you will be able to enter and submit groundwater well reports through GWELLS.

Provincial Groundwater Program Regional Update – North Natural Resource Area

We are pleased to provide an update on groundwater activities that are being carried out by groundwater staff in the North Area of FLNRORD. The North Area is made up of three Regions (Skeena, Omineca and Northeast) with a small groundwater team that is area-based working across the three Regions. Overall, North Area groundwater team's is continuing to focus on water authorization, with some effort being put to increasing groundwater monitoring and conducting research programs to better understand the state of the groundwater resources in the North.

Provincial Groundwater Program Regional Update – North Natural Resource Area Continued

Groundwater Licensing Update

North Area groundwater licensing work has been moving forward slowly but steadily since 2016. As of October 1st, 2020, the North Area has received 667 existing groundwater use applications and 285 licences have been granted. Effort to improve local internal processes have been ongoing through 2020 and we have steadily increased the number of existing use groundwater licences granted. Groundwater authorizations have been integrated with surface water in eLicensing, meaning groundwater and surface water are managed as one resource.

Observation Wells

The North Area is actively pursuing the drilling of two new observations wells, one in the Omineca Region and one in the Skeena Region. Both wells are in the siting stage but are planned to be completed by March 21, 2021.

Groundwater Science Studies

All field programs this year slowed down due to the ongoing pandemic and no new ones were initiated. Understanding groundwater surface water interactions is still a priority with SMALL efforts being put to the Upper Bulkley Groundwater Interaction Project and the Valemout Project.

The intended outcome of the Upper Bulkley Groundwater Interaction Project is to begin to understand the complexities of groundwater surface water interactions to help inform future water management decisions. Over the past year data loggers have been installed in volunteer wells to begin to monitor water levels, drone flights using thermal imagery have taken place to identify groundwater discharge locations, and a seepage meter was installed to begin to measure direct groundwater inputs. Next year additional seepage meter location will be identified, piezometers installed, and water quality samples will be taken.

The Valemout project uses the chemistry and isotopic signatures ($\delta^{18}O$ & δ^2H) of groundwater and surface water to identify potential water interactions between Kinbasket Lake, the Upper Fraser River, and the Valemout valley aquifer. The project team was unable to complete sampling this spring but is intending to sample approximately half of the initial wells this winter and again in spring of 2021 to fill in the data gaps. The project is continuing to develop and foster partnerships with the Geological Survey of Canada (GSC) and has a multifaceted approach that is integrating various divisions within the GSC.

The Terrace aquifer project is in the final stage of report writing with the outcome to better understand groundwater recharge zones in the area and use water quality data to further understand the aquifers. Unfortunately, due to the ongoing pandemic the sample collection concluded earlier than intended, however, the water chemistry available should provide enough information to meet the objectives of the study.

Final reporting for the updated aquifer mapping of the Vanderhoof and Houston area is underway and will be available through the Water Science Series on EcoCat in 2021. The Vanderhoof area remapping was completed in 2019 and is available on GWELLS under aquifers. The Houston area is nearly completed and will be updated with the final report.





Update on Groundwater

Contact Information for Groundwater Staff with Statutory Designation

Office	Name	Statutory Designation	Phone	Email	Ministry
West Coast (Nanaimo)	Sylvia Barroso, P. Geo.	Assistant Water Manager	250-739-8390	Sylvia.Barroso@gov.bc.ca	FLNRORD
	Jessica Doyle, P. Geo.	Assistant Water Manager	778 693-3035	Jessica.Doyle@gov.bc.ca	
	Nicole Fulcher	Officer	250-739-8339	Nicole.Fulcher@gov.bc.ca	
	Graeme Henderson	Officer	250-739-8263	Graeme.Henderson@gov.bc.ca	
South Coast (Surrey)	Michele Lepitre, P. Geo.	Assistant Water Manager	778-572-2168	Michele.Lepitre@gov.bc.ca	FLNRORD
	Shirley Wang, P. Geo.	Assistant Water Manager	778-572-2167	Shirley.Wang@gov.bc.ca	
	Emma Webster, P. Geo.	Officer	778-572-2160	Emma.Webster@gov.bc.ca	
South Area (Penticton)	John Pogson, P. Geo.	Assistant Water Manager	778-622-6876	John.Pogson@gov.bc.ca	FLNRORD
	Skye Thomson, P. Geo.	Assistant Water Manager	778-622-6907	Skye.Thomson@gov.bc.ca	
	Arthur Vanjecek	Officer	778-622-6847	Arthur.Vanjecek@gov.bc.ca	
South Area (Vernon)	David Thomson, P. Geo.	Assistant Water Manager	778-943-6924	David.Thomson@gov.bc.ca	FLNRORD
South Area (Kamloops)	Laurie Lyons	Officer	250-312-7262	Laurie.Lyons@gov.bc.ca	FLNRORD
	Melissa Wade, P. Geo. (On leave until Fall 2021)	Assistant Water Manager	250-312-7302	Melissa.Wade@gov.bc.ca	
North Area (Smithers)	Stuart Bryson, P. Geo	Officer	778-693-3177	Stuart.Bryson@gov.bc.ca	FLNRORD
	Johanna Wick, P. Geo.	Assistant Water Manager	778-693-2671	Johanna.Wick@gov.bc.ca	
Victoria	Leia Fougere, P.Eng.	Sr. GW Data Specialist	236-478-3730	Leia.Fougere@gov.bc.ca	ENV
	Amy Sloma, P. Eng.	Deputy Comptroller	778-698-4866	Amy.Sloma@gov.bc.ca	
	Uelun Tuvshinjargal	Officer (GW Data Specialist)	236-478-0448	Uelun.Tuvshinjargal@gov.bc.ca	

For general enquiries, contact Groundwater@gov.bc.ca