

# 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 2019 issue:

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## 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.

## 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?

**R.A.P.P.**  
Report All Poachers and Polluters  
Conservation Officer 24 Hour Hotline  
1-877-952-RAPP (7277)  
Cellular Dial - #7277

## Groundwater Licensing Ad Campaign

A province-wide advertising and mail campaign has been launched to raise awareness of the licensing requirements for non-domestic groundwater, well or dugout users in BC.

Local newspaper and journal ads were launched in the West Coast in October and the Southern Interior in November. The ads will be published in the Lower Mainland, the Northwest, and the Northeast in the new year.

In addition to print ads, the Province is raising awareness of groundwater licensing requirements by sending targeted mail to well owners who might not have applied for a licence yet.

Look for the ads in your local newspapers and stay tuned for other advertising and outreach initiatives!



**Secure Your Water Rights**

**A water licence is required by law for non-household groundwater, well or dugout users in British Columbia.**

The Province's water licensing system helps manage water use in B.C. to sustain environmental, economic and human needs. A water licence gives you a right to water for non-household uses, such as water supply systems, irrigation, industrial and commercial. It also prioritizes your rights over future developments.

**Apply today!**

**Start your application now and learn more at [groundwater.gov.bc.ca](http://groundwater.gov.bc.ca)**

For more information call FrontCounter BC at  
**1-877-855-3222**

 BRITISH COLUMBIA

## Well Record Submissions

The Province is moving towards online submission of well construction, alteration, and decommission reports after December 31, 2019. This is also a good opportunity to remind all drillers and well pump installers to please contact [groundwater@gov.bc.ca](mailto:groundwater@gov.bc.ca) of any changes to your contact information in the register of Well Drillers or Well Pump Installers. It is a regulatory requirement under the Groundwater Protection Regulation (section 12) to notify the Comptroller within 60 days of any changes to your contact information or if you are no longer working in Canada as a well driller or a pump installer. The register of Well Drillers and Well Pump Installers can be found at: <https://apps.nrs.gov.bc.ca/gwells/registries>.



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## Well Record Submissions – Continued

Drillers and well pump installers who have extenuating circumstances that preclude electronic online submissions may continue to submit paper well reports and/or records on a Ministry form, provided these are received by the Ministry within 90 days after completion drilling, alteration, or decommissioning as required under the Groundwater Protection Regulation.

Well records can be submitted electronically (GWELLS) or by mail.

- GWELLS: <https://apps.nrs.gov.bc.ca/gwells/>
- Mail: *Ministry of Environment & Climate Change Strategy, PO Box 9362 STN PROV GOVT, Victoria BC V8W 9M2.*

## GWELLS APPLICATION

**It was designed with you in mind. GWELLS has replaced the old WELLS and eWELLS tools to make it easier for users to search and submit well information!**

Our goal is to make it easier for you to submit well records to the Province and to make groundwater information more accessible. 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 the Province; and,
- improved access to well and groundwater information for everyone, including following artesian well data for better resource management.

Get access in four easy steps.

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

We continue to improve GWELLS based on feedback. Have suggestions for improvements? Email [gwells@gov.bc.ca](mailto:gwells@gov.bc.ca)

## Provincial Government Groundwater Program Regional Update – North Area

We are pleased to provide an update on groundwater activities that are being carried out by the regional groundwater staff in the North Area of FLNRORD. Overall, North Area groundwater team's current focus is on water authorization, monitoring, and research to understand the state of the groundwater resources.

### Groundwater Licensing Update

North Area groundwater licensing work has been moving forward slowly but steadily since 2016. As of October 1st, 2019, the North Area has received 853 existing groundwater use applications and 176 licences have been granted. Groundwater authorizations have been integrated with surface water in eLicensing, meaning groundwater and surface water are now managed as one resource. While existing groundwater user can continue to beneficially use water during the licence

review period, we prioritize new groundwater applications to meet the 140-day turn around target and not unduly delay the applicant's projects.

## Observation Well in Fort Nelson

In the fourth week of October, a third observation well was drilled northwest of Fort Nelson. The well was completed in bedrock aquifer 1034. Along with two other observation wells drilled in 2018, three major aquifer types listed in the 2018 Liard and Petitot study ([Water Science Series 2018-01: Liard and Petitot Sub Basins Transboundary Groundwater](#)

[Resources Assessment](#)) are monitored in this region with active unconventional gas development. A datalogger and telemetry system have been installed on observation well 482 to monitor real time groundwater level and temperature. We are working with regional staff and Fort Nelson First Nation to finalize the land use agreement, new equipment installation, and well maintenance.

## Groundwater Science Studies

One of the important aspects in assessing new groundwater applications is identifying the hydraulic connectivity. Groundwater extracted from these wells will impact environmental flow needs (EFN) in connected streams. To enhance our understanding of the hydraulic connectivity, we initiated two research projects: in the Upper Bulkley River area of the Skeena, and the Valemount area of the Omineca.

The intended outcome of the Upper Bulkley Groundwater Interaction Project is to explore the stated research questions and inform future management of water resources in the Upper Bulkley River watershed by strategically collecting and synthesizing baseline groundwater and surface water. The project uses various groundwater monitoring techniques (wells, shallow groundwater piezometers, and airborne thermal imaging) to identify areas where groundwater and surface water interact. This fiscal year is the second year of the project. To date the project team has obtained access to several private wells in which to install the monitoring instruments. The team also conducted a few test drone flights.

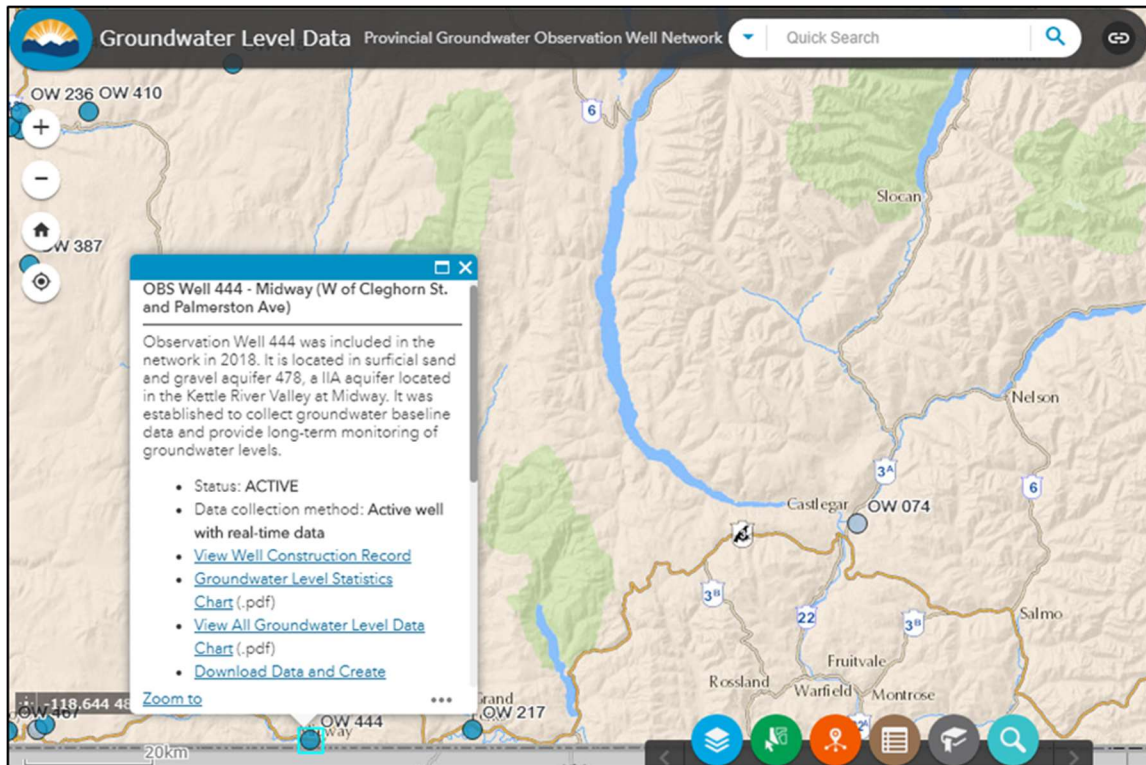
The Valemount project uses the chemistry and isotopic signatures ( $\delta^{18}O$  &  $\delta^2H$ ) of groundwater and surface water to identify potential water interactions between Kinbasket Lake, the Upper Fraser River, and the Valemount valley aquifer. The project team completed Phase I of the field work in October. Forty-four water samples were collected within the project area. These were collected from privately-owned groundwater wells of various depths, and major surface water bodies such as Fraser River, McLeannan River, Canoe river, Swift Creek, and Kinbasket Lake. Data analysis and conceptual model construction are ongoing.

Data interpretation and final sampling continues for the Terrace aquifer project. This existing project started two years ago and aims to assess regional recharge zones and regional groundwater flow in the valley. Its importance to authorizations has been highlighted by a recent groundwater application for which additional data would have been useful to definitively ascertain surface water connections.



## Provincial Groundwater Observation Well Network (PGOWN) Update

The PGOWN interactive map is a fantastic tool to learn about this provincial monitoring network and groundwater levels across the network. It is a gateway to several groundwater databases, tools, and data. The Map can be found at the following link <https://www2.gov.bc.ca/gov/content/environment/air-land-water/water/groundwater-wells-aquifers/groundwater-observation-well-network/groundwater-level-data-interactive-map>.



The PGOWN interactive map provides access to the following.

- Background information for each PGOWN well.
- The PGOWN well construction record and the GWELLS database.
- View and download PGOWN water level data in .csv format.
- View and download PGOWN water chemistry data from the Environmental Monitoring System (EMS) database.
- View basic water level statistics.
- Create your own interactive charts using PGOWN water level data.

In addition, the following map layers are available:

- active PGOWN wells;
- inactive PGOWN wells;
- groundwater wells; and,
- groundwater aquifers.

A video on navigating the map can be found at the following link:  
<https://www.youtube.com/watch?v=3f8yxtXYNkg&feature=youtu.be>.



# Update on Groundwater

## Contact Information for Groundwater Staff with Statutory Designation

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West Coast (Nanaimo)	Pat Lapcevic, P. Geo.	Assistant Water Manager	250-751-3149	<a href="mailto:Pat.Lapcevic@gov.bc.ca">Pat.Lapcevic@gov.bc.ca</a>	FLNRORD
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	Jessica Doyle, P. Geo.	Assistant Water Manager	778-693-3035	<a href="mailto:Jessica.Doyle@gov.bc.ca">Jessica.Doyle@gov.bc.ca</a>	
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South Area (Penticton)	Skye Thomson, P. Geo.	Assistant Water Manager	250-490-8276	<a href="mailto:Skye.Thomson@gov.bc.ca">Skye.Thomson@gov.bc.ca</a>	FLNRORD
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	John Pogson, P. Geo.	Assistant Water Manager	250-490-8220	<a href="mailto:John.Pogson@gov.bc.ca">John.Pogson@gov.bc.ca</a>	
	Arthur Vanjecek	Groundwater Protection Officer	250-480-8267	<a href="mailto:Arthur.Vanjecek@gov.bc.ca">Arthur.Vanjecek@gov.bc.ca</a>	
South Area (Vernon)	David Thomson, P. Geo.	Assistant Water Manager	250-260-4641	<a href="mailto:David.Thomson@gov.bc.ca">David.Thomson@gov.bc.ca</a>	FLNRORD
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	Melissa Wade, P. Geo.	Assistant Water Manager	250-371-6206	<a href="mailto:Melissa.Wade@gov.bc.ca">Melissa.Wade@gov.bc.ca</a>	
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For general enquiries, contact [Groundwater@gov.bc.ca](mailto:Groundwater@gov.bc.ca)