

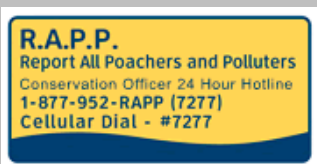
This report is prepared for you by the water management teams within the *Ministry of Environment and Climate Change Strategy (ENV)* and the *Ministry of Forests, Lands, Natural Resource Operations & Rural Development (FLNRORD)*.

## In the September 2020 issue:

- Engineers & Geoscientists BC Practice Advisory
- Groundwater Wells and Aquifers (GWELLS) - Update
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## 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.

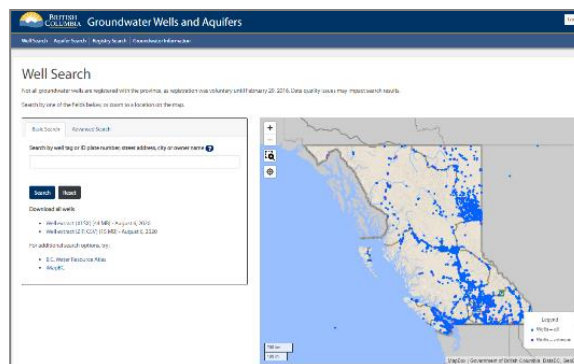
## Engineers & Geoscientists BC Practice Advisory

FLNRORD and ENV have provided outreach over the past year to Engineers & Geoscientists BC (EGBC) regarding the responsibilities of professionals in respect to flowing artesian wells. The communications culminated in a working group for the past six months (consisting of representatives from industry, government, and EGBC) which created a practice advisory (<https://www.egbc.ca/getmedia/967613eddffb-4f02-a1b9-c302aaa0201f/Practice-Advisory-FlowingArtWells.pdf.aspx>).

The advisory will remain present on EGBC's website under their Professional Practice Guidance webpage (<https://www.egbc.ca/Practice-Resources/Practice-Guidelines-and-Advisories>) and complements our recently publicly released flowing artesian well policy ([https://www2.gov.bc.ca/assets/gov/environment/air-land-water/water/laws-rules/policy\\_public\\_guidance\\_on\\_implementation\\_of\\_s\\_526\\_wsa\\_managing\\_artesian\\_flow\\_in\\_exceptional\\_circumstances.pdf](https://www2.gov.bc.ca/assets/gov/environment/air-land-water/water/laws-rules/policy_public_guidance_on_implementation_of_s_526_wsa_managing_artesian_flow_in_exceptional_circumstances.pdf)).



## Groundwater Wells and Aquifers (GWELLS) - Update



The B.C. government continues to make improvements to the Groundwater Wells and Aquifers (GWELLS) application in order to support access to groundwater and aquifer data and information. Recent changes to GWELLS include:

- improved well search,
- updates to the aquifer search and summary page,
- data cleanup in relation to well class and intended water use fields to support improved data quality,
- inclusion of data validation on well class and intended water use fields, and
- addition of bulk upload tools for staff in order to improve business processes to support quicker access to groundwater and aquifer data and information.

Do you have ideas on how we can improve the Groundwater Wells and Aquifers (GWELLS) application? Send your suggestions to [gwells@gov.bc.ca](mailto:gwells@gov.bc.ca)!

## Provincial Groundwater Program Regional Update – South Natural Resource Area

We are pleased to provide an update on groundwater activities that are being carried out by the regional groundwater staff in the South Natural Resource Area of the Ministry of Forest, Lands and Natural Resource Operations. The South Area includes the Cariboo, Thompson Okanagan and Kootenay Boundary Regions.

### Groundwater Science

#### Nicola and Coldwater River Research

The South Area Groundwater Science team and the Fraser Basin Council have been involved in multi-year projects to improve our knowledge of the hydrogeology and groundwater/surface water interactions in the Nicola and Coldwater River valleys near Merritt, BC. The studies meet the following multiple objectives:

- to enhance our understanding of the hydrogeological conditions of the area;
- to better understand groundwater availability;
- for infrastructure planning and water management by local water purveyors;
- to support groundwater licensing decisions;
- for environmental flow needs determinations;
- for the Coldwater and Nicola River Restoration Initiatives;
- for ongoing fisheries enhancement activities; and,
- for research by faculty and students at Nicola Valley Institute of Technology.



Some of the work completed in the area includes the development of a groundwater budget for the Lower Nicola Valley area, aquifer characterization and mapping, data compilation and development of a conceptual hydrogeological model, and development of a steady state numerical model encompassing the valley bottom unconsolidated sediments. A desktop study of available existing data has been completed for a 38 km reach of the Coldwater River upstream from the confluence of the Nicola River to establish a baseline understanding of the groundwater and surface water interactions within the study area.

All the completed reports are now available on B.C. Ecological Reports Catalogue (EcoCat BC)

<https://www2.gov.bc.ca/gov/content/environment/research-monitoring-reporting/libraries-publication-catalogues/ecocat> or at the individual report links provided below:

- Lower Nicola Valley Groundwater Budget (2016), Golder Associates Ltd: <https://a100.gov.bc.ca/pub/acat/public/viewReport.do?reportId=50382>
- Nicola Watershed Aquifer Classification and Mapping (2018), Golder Associates Ltd: <https://a100.gov.bc.ca/pub/acat/public/viewReport.do?reportId=58659>
- Nicola River Project, Data Compilation Plan to Support Numerical Flow Modelling Strategy (2018), Golder Associates Ltd: <https://a100.gov.bc.ca/pub/acat/public/viewReport.do?reportId=58664>
- Nicola Valley Groundwater Flow Modeling Project, Part 1 (2019), Golder Associates Ltd: <https://a100.gov.bc.ca/pub/acat/public/viewReport.do?reportId=58665>
- Nicola Valley Project Phase 3 (Part 2) Hydrogeological Modelling (2020), Golder Associates Ltd: <https://a100.gov.bc.ca/pub/acat/public/viewReport.do?reportId=58667>

## Provincial Groundwater Program Regional Update – South Natural Resource Area Continued

- Coldwater River, Groundwater / Surface Water Interaction Study – Phase 1 (2020) Golder Associates Ltd  
<https://a100.gov.bc.ca/pub/acat/public/viewReport.do?reportId=58668>

### New Observation Well, Lumby

The Provincial Groundwater Observation Network (PGOWN) monitors groundwater conditions in aquifers across British Columbia. The project objective was to install an observation well in aquifer Aquifer (AQ) 314, a deep confined sand and gravel aquifer with documented occurrences of flowing artesian conditions. The well is located in the Whitevale area near Lumby B.C. The project involved site selection, securing access, ground clearing, drilling and well construction, and collection of representative water samples for water quality analysis.

The observation well (OW487) was completed to a total depth of 91 metres below ground surface (m bgs) on March 5, 2020. The well design was carefully considered to plan for and mitigate against potential flowing artesian conditions and reduce the potential for creating a hydraulic connection between the deeper aquifer (AQ314) and the overlying shallow aquifer (AQ316).

The observation well is currently instrumented with continuous water level monitoring equipment. Groundwater levels will be publicly available through the provincial Groundwater Level Data Interactive Map. Water samples were collected for laboratory analyses and results are available through the Environmental Monitoring System (EMS). OW487 will provide resource managers, industry and the public with water level and water quality data to help support environmental protection, policy development, and water allocation decisions.

### Hullcar (Clachl) Aquifer Monitoring

In February 2020, four groundwater monitoring wells were constructed by the provincial government in the Hullcar (Clachl) Valley area. This work was undertaken in partnership with the Splatshin First Nation. These wells add to three existing provincial monitoring wells that were constructed in 2019.

The purpose of these wells is to monitor water quality in the Hullcar Aquifer and better understand groundwater flow directions. In addition to supporting implementation, results from this monitoring will help evaluate the success of the Hullcar Aquifer Response Plan which aims to ensure a healthy and safe groundwater resource.

Further information on groundwater monitoring activities in the Hullcar (Clachl) Valley are available at the following:

<https://www2.gov.bc.ca/gov/content/environment/air-land-water/site-permitting-compliance/hullcar-aquifer>

### **Groundwater Protection Regulation Compliance**

Okanagan/Kootenay update:



*Early morning at the drill site.*

*Photo: John Pogson*



# Update on Groundwater

## Provincial Groundwater Program Regional Update – South Natural Resource Area Continued

South Area staff have been working collaboratively with industry partners and well owners on enquiries and compliance concerns related to the *Water Sustainability Act* (WSA) and Groundwater Protection Regulation (GPR). Issues of note over the past year include: well covers, and in particular, a cover that prevents direct and unintended entry into the well of any water or foreign matter; drilling setback requirements related to riparian areas and septic tanks; and ensuring that all well construction reports are submitted as required by the GPR. Staff are working diligently to provide direction and education.

There has been a high volume of enquiries from homeowners and industry regarding the well record database, GWELLS. A large volume of Domestic Well Registration forms have been received resulting in the identification of previously unknown wells being identified and entered into GWELLS, and the updating of well ownership and well location information of previously entered wells in GWELLS.

Staff are also working on a province-wide initiative to improve the well record database. This province-wide initiative will involve addressing well records that are submitted late (or not at all) and will help improve well drilling data. Improving well submissions and the database will benefit well drillers and pump installers, well owners, municipalities and help support informed decision-making on the groundwater resource.

## Submit Your Well Records Online!

The B.C. government is moving towards online submission of *well construction, alteration, and decommission reports*.

### 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 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](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.

## Contact Information for Groundwater Staff with Statutory Designation

Office	Name	Statutory Designation	Phone	Email	Ministry
West Coast (Nanaimo)	Pat Lapcevic, P. Geo.	Assistant Water Manager	250-739-8345	<a href="mailto:Pat.Lapcevic@gov.bc.ca">Pat.Lapcevic@gov.bc.ca</a>	FLNRORD
	Graeme Henderson	Officer	250-739-8263	<a href="mailto:Graeme.Henderson@gov.bc.ca">Graeme.Henderson@gov.bc.ca</a>	
	Sylvia Barroso, P. Geo.	Assistant Water Manager	250-739-8390	<a href="mailto:Sylvia.Barroso@gov.bc.ca">Sylvia.Barroso@gov.bc.ca</a>	
	Jessica Doyle, P. Geo.	Assistant Water Manager	778 693-3035	<a href="mailto:Jessica.Doyle@gov.bc.ca">Jessica.Doyle@gov.bc.ca</a>	
	Nicole Fulcher	Officer	250-739-8339	<a href="mailto:Nicole.Fulcher@gov.bc.ca">Nicole.Fulcher@gov.bc.ca</a>	
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	Michele Lepitre, P. Geo.	Assistant Water Manager	778-572-2168	<a href="mailto:Michele.Lepitre@gov.bc.ca">Michele.Lepitre@gov.bc.ca</a>	
	Shirley Wang, P. Geo.	Assistant Water Manager	778-572-2167	<a href="mailto:Shirley.Wang@gov.bc.ca">Shirley.Wang@gov.bc.ca</a>	
South Area (Penticton)	Skye Thomson, P. Geo.	Assistant Water Manager	778-622-6907	<a href="mailto:Skye.Thomson@gov.bc.ca">Skye.Thomson@gov.bc.ca</a>	FLNRORD
	Twyla Legault	Officer	778-622-6913	<a href="mailto:Twyla.Legault@gov.bc.ca">Twyla.Legault@gov.bc.ca</a>	
	John Pogson, P. Geo.	Assistant Water Manager	778-622-6876	<a href="mailto:John.Pogson@gov.bc.ca">John.Pogson@gov.bc.ca</a>	
	Arthur Vanjecek	Officer	778-622-6847	<a href="mailto:Arthur.Vanjecek@gov.bc.ca">Arthur.Vanjecek@gov.bc.ca</a>	
South Area (Vernon)	David Thomson, P. Geo.	Assistant Water Manager	778-943-6924	<a href="mailto:David.Thomson@gov.bc.ca">David.Thomson@gov.bc.ca</a>	FLNRORD
South Area (Kamloops)	Laurie Lyons	Officer	250-312-7262	<a href="mailto:Laurie.Lyons@gov.bc.ca">Laurie.Lyons@gov.bc.ca</a>	FLNRORD
	Melissa Wade, P. Geo.	Assistant Water Manager	250-312-7302	<a href="mailto:Melissa.Wade@gov.bc.ca">Melissa.Wade@gov.bc.ca</a>	
North Area (Smithers)	Johanna Wick, P. Geo.	Assistant Water Manager	778-693-2671	<a href="mailto:Johanna.Wick@gov.bc.ca">Johanna.Wick@gov.bc.ca</a>	FLNRORD
Victoria	Amy Sloma, P. Eng.	Deputy Comptroller	778-698-4866	<a href="mailto:Amy.Sloma@gov.bc.ca">Amy.Sloma@gov.bc.ca</a>	ENV
	Uelun Tuvshinjargal	Officer (GW Data Specialist)	236-478-0448	<a href="mailto:Uelun.Tuvshinjargal@gov.bc.ca">Uelun.Tuvshinjargal@gov.bc.ca</a>	

For general enquiries, contact [Groundwater@gov.bc.ca](mailto:Groundwater@gov.bc.ca)