



## Hullcar (Clcah) Aquifer: Spring 2021 Update

The purpose of this update is to update Hullcar Valley residents on the status of the shared work of Splatina and the Province to implement the [Hullcar \(Clcah\) Aquifer Response Plan \(HARP\)](#).

### Water Quality

In February 2020 three new groundwater monitoring wells were installed in the Hullcar Valley. These wells continue to help us build our knowledge of groundwater quality, groundwater flow, and properties of the aquifers. Two of the new wells were installed directly in Aquifer 102 and one in Aquifer 103. A fourth monitoring well was installed in the bedrock beneath aquifers 102 and 103. While there is no water in this well it does help provide technical information on properties of the aquifer as part of our work to understand the Hullcar watershed. Detailed information about the new monitoring wells can be found in the [well report](#) produced by the drilling consultant.

These three new monitoring wells add to three existing wells that were installed in 2019. There are now a total of six groundwater monitoring wells that have been installed as part of the HARP. Information about the wells that were installed in 2019 can be found in the following [well report](#).

In situ water quality measurements and water samples were collected quarterly in 2020. Water samples for the monitoring wells were submitted to an accredited laboratory for analysis and results are available by searching by the Environmental Monitoring System (EMS) ID listed below in the [Environmental Monitoring System](#).

Monitoring Well Name	Environmental Monitoring System ID	Nitrate mg/L					
		Mar 2019	Sep 2019	Feb 2020	May 2020	Aug 2020	Dec 2020
MW-20-1B	E319191	--	--	0.01	0.003	0.003	0.473
MW-19-1A-R	E317950	19	14.3	15.5	15.6	--	13.7
MW-20-2B	E319192	--	--	0.01	0.015	0.015	0.025
MW-19-2A	E317972	12.4	4.19	4.07	5.03	11	11.7
MW-20-4A	E319193	--	--	1.37	2.93	5.54	6.57
MW-19-3A	E317974	10.7	10.8	10.8	9.68	9.35	9.93

Nitrate levels continue to fluctuate; however, results from December 2020 show only two shallow wells (MW-19-1A-R and MW-19-2A) reporting nitrate concentrations greater than Health Canada's Maximum Acceptable Concentration (MAC) guideline of 10 milligrams per litre (mg/L). These wells are screened across the top of the water-table and therefore are not necessarily representative of nitrate concentrations at greater depths where drinking water well intakes are typically located.

A small number of residential wells in the Hullcar valley are also sampled yearly to serve as an indication of drinking water quality. In September 2020, five residential wells were sampled. All of these had nitrate values within the Health Canada MAC of 10 mg/L, and two had no detectable nitrate at all.

Between November 2019 and August 2020 nitrate levels in the decommissioned Steele Springs Water Intake were the lowest detected since 2014. The monitoring result from January 2021 was 10 mg/L, which is the same as Health Canada's MAC for nitrate. All water quality data can be found on the [Environmental Monitoring System](#).

According to the Associated Environmental [2017 Report](#), nitrates in the upper aquifers will likely persist for a decade or longer. So long as beneficial agricultural management practices are followed, including those for nutrient management and irrigation, future leaching of an excessive quantity of nitrates below the crop root zone and into the aquifer where it could be a concern for drinking water are expected to be negligible.

Installation of the new monitoring wells and water quality monitoring that continues in the Hullcar watershed will monitor groundwater quality and assess any necessary management actions needed over time. An adaptive management approach is needed as part of the monitoring plan that is in development for the Hullcar watershed (see below).

## Post Harvest Nitrate Study

A post-harvest nitrate test is a measure of the amount of unused nitrate remaining in a portion of soil after a crop has been harvested. Annual post-harvest nitrate tests have been conducted in the Hullcar Valley above Aquifer 103 since 2016 to help inform efficient nitrogen use practices. The [2020 Post Harvest Nitrate Study](#) is now available online.

## Agricultural Environment Management Code of Practice

The [Agricultural Environmental Management Code of Practice \(AEM Code\)](#) has been in force since February 2019. It regulates the storage and use of manure, nutrients and other agricultural by-products, to protect surface water and groundwater resources.

In the first year of implementation, the Province partnered with the [BC Agriculture Council](#) to build awareness and understanding of the new rules across all major agricultural sectors and regions across B.C., including the Hullcar valley. Tools and guidance have been developed to help farmers comply with the new rules, including an [interactive high-risk mapping tool](#), [a nutrient management calculator](#), and materials that explain the regulation and recommended best practices. ENV is currently working on minor amendments to the AEM Code to correct errors, clarify policy intent, and improve implementation and enforceability.

The Ministry of Agriculture Food and Fisheries is developing a nutrient management plan (NMP) training course. The purpose of the course is to train qualified professionals and experienced persons to complete NMPs under the AEM Code. Under the AEM Code a NMP must be designed to minimize the risk of nitrogen and phosphorus loss from a field to the environment. The course is anticipated to be made publicly available in 2021. For questions about the course please contact AgriService BC at 1 888 221-7141 or [AgriServiceBC@gov.bc.ca](mailto:AgriServiceBC@gov.bc.ca).

Provincial inspectors continue to conduct inspections as required on agricultural sites across the province to verify compliance with the AEM Code. For more information visit: [gov.bc.ca/Agricultural-Environmental-Management](http://gov.bc.ca/Agricultural-Environmental-Management).

## Compliance

The Report All Poachers and Polluters (RAPP) program is a toll free tip line (**1-877-952-7277**) and [online service](#) that also allows callers to anonymously report known or suspected violations of fisheries, wildlife, or environmental protection laws without risk of confronting the offender. Available 24/7, RAPP is simple, safe and effective.

## Technical Work

A number of technical projects are either ongoing or planned. A **watershed assessment** to understand health of the watershed and inform future work priorities is currently underway. A desktop review and summary of existing cultural and technical environmental information for the Hullcar watershed was completed in March 2020 to inform subsequent workshops with Splat-sin and technical experts. The first Splat-sin community session took place in November 2020 and introduced the Hullcar watershed health assessment project to the Splat-sin community. Subsequent technical workshops are planned for 2021. All work will be COVID-compatible and consistent with public health guidelines.

A **monitoring program** is also under development for the Hullcar watershed to support evidence-based decision-making and remediation of the Hullcar aquifer. A technical group of representatives from the Ministry of Environment and Climate Change Strategy, Ministry of Forests, Lands and Natural Resource Operations and Rural Development, Ministry of Health, Ministry of Agriculture, Food and Fisheries, and Splat-sin are currently scoping and defining the objectives of the monitoring program.

Additional technical work commenced in January 2021, including:

- Completion of a numerical groundwater model which will help inform decision making and the location of new monitoring wells and stations for both ground- and surface water, and
- Development of a conceptual groundwater model update, which will involve updating key technical pieces of the [Golder Associates 2017 report](#).

## New resources

The [aquifer summary page in GWELLS](#) now includes updated aquifer fact sheets. [Aquifer #103](#) and [Aquifer #102](#) underlie the Hullcar Valley.

## Memorandum of Understanding Between the Province and Splat-sin

The [HARP](#) is being jointly implemented by the BC Government and Splat-sin under a Memorandum of Understanding signed in 2017. Splat-sin and the Province are currently renewing this existing agreement to outline how the two governments will work together in partnership in future. This renewed agreement is expected to be signed in Spring 2021.

## Advisory Board Development

As committed to in the [Hullcar \(Clcahl\) Aquifer Response Plan](#), Splat-sin and the Province are establishing a [Water Sustainability Act](#) Advisory Board. A facilitator has been engaged to help establish the Board. We expect communications out about the Board to commence in Spring 2021.

## Information

Information about the Hullcar Valley can be found in several locations on the Provincial Government website, including:

- [Hullcar Aquifer Information](#)
- [Environmental Monitoring System](#)
- [Groundwater Wells and Aquifers](#)
- [Provincial groundwater observation well data](#)

## Get in Touch

If you think this Information Bulletin is useful, if it is missing anything, or if you would rather hear from us through another means, please send us your thoughts at the email contact below.

## Website updates

The Ministry of Environment and Climate Change Strategy will be updating the [Hullcar Aquifer Information](#) webpage to make it more user-friendly. Moving forward, we will post communications, such as this information bulletin, on the webpage to ensure they are readily available. Please let us know if you have ideas on what you would like to see on the website or if you are having specific trouble accessing information on it. Please send us your thoughts!

## Contact Email

If you have questions or comments, please send them to [livingwatersmart@gov.bc.ca](mailto:livingwatersmart@gov.bc.ca).