



# Agency Report to the Mackenzie River Basin Board

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# 1. Bilateral Water Management Agreements

## British Columbia and Yukon

British Columbia and Yukon completed a Bilateral Water Management Agreement (BWMA) on March 30, 2017. The British Columbia/Yukon BWMA applies to all transboundary waters shared between British Columbia and Yukon in the Mackenzie River basin, primarily the Liard River Watershed. For the past two years, the governments of British Columbia and Yukon have worked together to implement the terms of the BWMA.

Recently, a Bilateral Management Committee (BMC) was established with First Nation governments and transboundary Indigenous organizations. In October 2019, the first face-to-face BMC meeting was held in Lower Post, BC. At the meeting, we finalized the BMC Terms of Reference, further developed the work plan and initiated a technical committee. Moving forward, the BMC will administer and support implementation of the BWMA.

## Northwest Territories and Yukon

The Northwest Territories and Yukon completed a BWMA in 2002, which applies to the Peel River Sub-Basin and the Mackenzie Delta sub-Basin.

The Governments of Yukon and NWT have integrated the current Transboundary Water Management Agreement with the template developed by the MRBB. We are working to update the current agreement so this BWMA is in line with the other BWMA's currently being negotiated and implemented. As the Peel Regional Land Use Plan was finalized in August 2019, discussions and engagement has resumed.

The Governments of Yukon and NWT are currently working to draft a Bilateral Water Management Agreement that covers 64km<sup>2</sup> in the Liard basin, which is not covered by either of the BC-Yukon or BC-NWT BWMA's. This agreement will mirror those currently in place.

The BWMA and related appendices have been drafted, and consultation is expected to be the next step.

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## 2. Water-Related Legislation / Policy / Regulations / Planning

### Regional Land Use Planning

The Peel Watershed Regional Land Use Plan was approved by the five parties on August 22, 2019. Approximately 55 per cent of the area is protected, including four major tributaries to the Peel River. The highest level of protection is now applied to these Special Management Areas. Implementation of the plan in these areas will include the permanent withdrawal of lands from mineral staking and oil and gas permitting, legal designation as protected areas, as well as the development of management plans.

The Government of Yukon continues to work with First Nations on many important initiatives vital to Yukon's social and economic well-being. We value the Final Agreements, and are committed to upholding them.

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### Yukon Water Strategy and Action Plan: Five Year Report

The Yukon Water Strategy and Action Plan was released in June 2014. The five-year plan set out six priorities and thirteen specific goals aimed at maintaining the quality, quantity and health of Yukon's ground and surface water, in order to support both people and nature in the territory. The Government of Yukon worked together with partners to implement the strategy, and shared many accomplishments, such as beginning water monitoring and research partnerships with First Nations, expanding water monitoring capabilities, establishing a permanent groundwater unit, delivering more than 200 outreach presentations for Canada Water Week, and launching a new Yukon Water Data Catalogue. The "Yukon Water Strategy: Final Report" was recently shared at the Yukon



Water Forum on November 27 and 28, 2019. This report provides a summary of the key achievements, outreach, and activities over the last five years.

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### **3. Science, Monitoring and Information**

#### Monitoring Update

##### *Southeast Yukon*

Environment and Climate Change Canada and the Government of Yukon signed the *Canada-Yukon Water Quality and Aquatic Ecosystems Agreement* in June 2019. Although we have monitored water quality collaboratively for many years, the agreement will support coordinated planning and implementation of water quality and aquatic biomonitoring activities in Yukon. The agreement also formalizes the ability to set up community monitoring arrangements and agreements with First Nations, which are already in place with Tr'ondëk Hwëch'in (Peel) and Daylu Dena Council (Liard).

Water quality monitoring continued at the Liard River station, which was reactivated in 2015. Since 2017, Daylu Dena Council has monitored the station from Lower Post, British Columbia and it forms part of the water quality monitoring network between Yukon and Canada. This station is located adjacent to the Alaska Highway near Watson Lake, Yukon, and serves as a reference site for the watershed. A baseline water quality characterization report for the Kotaneelee area in southeast Yukon was completed in October 2019. The project began several years ago in response to calls for an increased understanding of water resources in the area, before further oil and gas exploration. Providing water monitoring information relative to transboundary water management agreements between Yukon and NWT was another reason for the study.

The report documented the current baseline conditions of groundwater and surface water in the Kotaneelee area. Data were collected by Government of Yukon from July



2014 to September 2018. Ninety-four surface water samples were collected from eight locations along the Beaver River and the La Biche River, and eighteen groundwater samples were taken from one groundwater monitoring well, two drive point piezometers, one water supply well, and two groundwater seeps. All monitoring wells and mini-piezometers were shallow, and currently there are no monitoring wells installed in bedrock.

Surface water in the area had a high concentration of total suspended solids and metal. These conditions often occur in areas with natural oil and gas deposits.

A key recommendation from the report is to install a hydrometric station in the Beaver River and La Biche River to gain more accurate discharge and water level information within the watershed. There is currently limited available hydrometric data which limits understanding of seasonal influences on surface water chemistry within the study area. The surface and shallow groundwater quality data collected to date provides basic spatial and temporal information on existing conditions. Based on future resource development and future management plans, additional data collection programs may be required.

A copy of the final report entitled “Kotaneelee Baseline Water Quality Characterization Report” is available upon request.

### *Peel Watershed*

Discussions around long-term water monitoring needs in the Peel Watershed, with respect to informing Peel regional land use plan implementation activities, is underway. Key topics include monitoring major rivers in the watershed to inform territorial park planning, and to inform recreational paddlers of real-time water flow conditions.

Water quality monitoring continued at the Ogilvie River station, which was reactivated in 2016. The station is monitored by Tr’ondëk Hwëch’in First Nation and is part of the water quality monitoring network between Yukon and Canada. This station is road-accessible and is a reference site for the upper portion of the watershed. Cross-basin (synoptic) monitoring will occur as opportunities arise and basin activities dictate.



Within the adjacent Eagle Plains area, a baseline water quality characterization report was recently completed. The Government of Yukon collected baseline data in the area from 2013 to 2018, and worked with the University of Calgary on a Natural Sciences and Engineering Research Council (NSERC) project to collect groundwater and surface water samples for the analysis of isotopes and dissolved gases. One of the sample sites is located in the Peel watershed and includes a stream gauging station. Three groundwater monitoring wells are located in the Peel watershed. A final report titled “Eagle Plains Baseline Water and Sediment Quality Report” is available upon request.

With respect to groundwater monitoring, one groundwater well was included in the Yukon Observation Well Network (YOWN) in 2019 (YOWN -1918). The well is located near the Eagle Plain solid waste disposal facility. There are only two groundwater wells in this area (the other one is YOWN-1401, near Eagle Plain Camp).

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### *Snow Survey Network Survey Bulletin and Water Supply Forecast*

The Department of Environment operates ten snow survey stations within the Yukon portion of the Mackenzie River Basin, with three stations in the Peel Basin and seven stations in the Liard Basin. The snowpack at these stations is sampled three times annually for depth, density, and snow water equivalent (SWE). We publish results in the [Yukon Snow Survey & Water Supply Forecast](#) at the beginning of March, April and May each year. Past editions of the bulletin can also be viewed on Yukon.ca.

A new version of the snow bulletin was developed in 2019. We use a new calculation method to evaluate the amount of snow on the ground, based on a total of ten stations



for the Liard Basin and nine stations for the Peel Basin. The information presented in the snow bulletin will continue to be used to identify any potential spring and early summer flood threat for those basins as well as for some sub-basins.

### *Hydrometric Network*

Environment's small stream hydrometric network includes two stations in the Liard Basin and one station in the Peel Basin. Continuous water level measurements are recorded at each station using electronic data loggers. Regular discharge measurements are taken seasonally (May through September) with a particular emphasis on capturing discharge during spring peak flow. Winter flow estimates will become available at those stations in the near future. During the summer of 2019, one station located in the Liard Basin has been equipped with real-time data transmitters.

Environment also maintains a cost-sharing agreement with Environment Canada to operate four hydrometric stations within the Peel Basin and eight hydrometric stations within the Liard Basin. Real-time and historical water levels and discharge data from this network is available on line at <https://wateroffice.ec.gc.ca/>.

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### *Yukon Water Online Information*

**Water Monitoring:** The Government of Yukon has an online water information portal ([YukonWater.ca](http://YukonWater.ca)), which is the main source for information about water monitoring in Yukon. The website houses the [Water Data Catalogue](#), a centralized database that provides water monitoring information through an interactive map (e.g., site location, period of record, type of data collected, etc.).

We continue to add additional monitoring locations to the water data catalogue. The catalogue now contains over 2,267 water monitoring locations from 23 networks, spanning snowpack, surface water, groundwater and meteorological observations. In addition to the metadata that is provided through the catalogue, many monitoring





stations link to the associated water data, and the long-term goal is to provide direct access to water data for additional networks.

[YukonWater.ca](http://YukonWater.ca) also provides educational material and information about Yukon's water resources including:

- Water facts and information (e.g., water cycle, water use, etc.);
- Water management;
- Legislation that guides interactions with water; and
- News and updates related to water in Yukon.

**Access to Water Data:** Yukon recently launched an open data portal as a single point of access to publically accessible data. All historical [snow survey data](#) collected as part of the government network is now accessible through the platform. Currently, work is underway to prepare the public release of annual reports of monitoring results from the Yukon Observational Well Network (YOWN) to Yukon.ca.

Additionally, a project to improve the accessibility of water well drilling records to the public is nearing completion. Over the past year, considerable effort has been put into improving the quality of records by assigning map coordinates and quality controlling data with the goal of providing access to well logs through a web-based interactive map, the Yukon Water Well Registry, to be launched shortly.

**Regulatory Data:** The Yukon Water Board maintains an online public registry called [Waterline](#) that stores and shares information related to water licensing processes in Yukon. The system allows licence holders to submit reports and data as required by water licences and allows for public access to this information. Significant improvements to the registry's notification process allows regulators to track reports that are late or have not been submitted.

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## 4. Major Projects

### Regulatory Update

#### *Mineral Exploration*

No mineral exploration programs have been proposed in the Peel watershed in 2019. There is one active Class 3 (exploration) Mining Land Use Approvals in the watershed; this authorization slightly overlaps the Peel Watershed at its southeastern-most boundary.

There are 12 active Class 3 or 4 Mining Land Use Approvals in the Liard watershed, only one of which was issued in 2019. Four properties are located along the northern portion of the Nahanni Range Road, four in the northwest portion of the basin and the remaining four in the southern half.

#### *Major Mines*

##### **Liard Watershed**

*Wolverine Mine:* Yukon Zinc Corporation put the Wolverine Mine, located 180 km southeast of Ross River, into Temporary Closure on January 27, 2015. In September 2019, the owner of the site was put into receivership, and Government of Yukon is working with the receiver to ensure ongoing monitoring of the site continues.

*Sä Dena Hes Mine:* Permanent closure and decommissioning activities of this former lead-zinc mine were completed in 2015; the site is now in post-closure monitoring.

*Kudz Ze Kayah Mine:* BMC Minerals has applied to the Yukon Environmental and Socio-economic Assessment Board (YESAB) for an Executive Committee screening of its mine plan; the screening is ongoing, and a recommendation from YESAB is expected in early 2020.



*Oil and Gas*

*Kotaneelee Gas Project:* The Kotaneelee gas field and plant are currently inactive and decommissioning activities are nearly complete on site; Government of Yukon (Oil and Gas Branch) are coordinating the decommissioning of the two last wells.

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