



INNAVIK HYDRO PROJECT

WATER MONITORING CAMPAIGN

September 2020

Work on the Innavik Hydro Project has started and protecting the quality of Inukjuak's drinking water is our top priority. We take every measure to prevent and avoid any contamination, for instance by keeping our machinery in top condition to prevent any spills, and stopping any dirty water draining into the crystal clear Inukjuak River.

Along with being careful, we also monitor water quality, through daily sampling of the Inukjuak River.

Monitoring work

To make sure the water is not negatively impacted by the construction work, two samplings are made every time:

- One upstream from the work site ("Control site" - completely natural)
- One downstream from the work site ("Test site" to detect any change)

Downstream monitoring is performed at the location of the Community's water intake, the source for the village's drinking water.

Currently-monitored parameters include temperature, pH and turbidity. Those results are instantaneous. Further analysis is required for other parameters monitored, including ammonia.

Monitoring results

The water criteria measured at the intake are within the expected ranges. Furthermore, in many instances, water parameters are identical at the upstream and downstream monitoring points. This means the construction site has no effect on water quality and that there is no increased risk for our drinking water.

In the event that an incident would occur on the construction site, immediate communication will take place to activate the Emergency Action Plan. Agreed with the KRG and NV, it involves delivering pure water to the drinking water treatment plant, therefore preserving public health.

For more information, call 819 254-8101 or send an email at innavikhydro@innergex.com



About Water Monitoring Parameters

The parameters that are monitored allow us to track the quality of the Inukjuak River water and would immediately identify a significant change / issue that could effect drinking water supplies.

pH

The pH value of a water source is a measure of its acidity or alkalinity. Ranging from 0 to 14, the value of 7.0 is neutral. Pure water would have a pH of 7.0, but rivers, lakes, and rain/snow tend to be slightly acidic, due to substances naturally present in the water.

Based on results from 2019, the Inukjuak River's pH usually is between 6.98 and 7.51. Since the beginning of work, it has been of 7.4 on average. Results from upstream of the work site and downstream at the water intake have been always in the same range which means the construction has not modified the river quality.

	Environmental Effects	pH Value	Examples
ACIDIC		pH = 0	Battery acid
		pH = 1	Sulfuric acid
		pH = 2	Lemon juice, Vinegar
		pH = 3	Orange juice, Soda
	All fish die (4.2)	pH = 4	Acid rain (4.2-4.4) Acidic lake (4.5)
	Frog eggs, tadpoles, crayfish, and mayflies die (5.5)	pH = 5	Bananas (5.0-5.3) Clean rain (5.6)
NEUTRAL	Rainbow trout begin to die (6.0)	pH = 6	Healthy lake (6.5) Milk (6.5-6.8)
		pH = 7	Pure water
BASIC		pH = 8	Sea water, Eggs
		pH = 9	Baking soda
		pH = 10	Milk of Magnesia
		pH = 11	Ammonia
		pH = 12	Soapy water
		pH = 13	Bleach
		pH = 14	Liquid drain cleaner

Turbidity

Turbidity is a measure of cloudiness which is caused by suspended sediment in the water. Normally the Inukjuak River flows almost crystal clear and all efforts are made to keep it that way. Turbidity is measured in the field using a hand-held digital meter that measures water cloudiness (or 'light scatter'). Turbidity measurements taken since work started on the Hydro project have remained low (water has been consistently clear).

Based on results from 2019 (KRG), the Inukjuak River's turbidity usually is between 0.4 and 0.9 NTU. In most cases, turbidity results are nearly identical upstream and downstream of work. Even in situations where downstream levels were higher, the result was still under 5, which is considered excellent according to the Environment Ministry. This shows that work has no significant impact on water quality.