



Yukon Guide for Developing Water Quality Objectives and Effluent Quality Standards

Introduction

As part of the environmental assessment and water licencing processes in Yukon, quartz mining projects must determine their potential impacts to water quality and propose standards to reduce any impacts to Yukon waters. As a result of the need for clear guidelines for water quality standards, the Yukon Guide for Developing Water Quality Objectives and Effluent Quality Standards for Quartz Mining Projects” (the “Guide”) was developed. The Guide provides technical and scientific guidance about approaches and procedures for:

1. Developing and applying Water Quality Objectives (WQOs) for freshwater ecosystems in Yukon.
2. Deriving Effluent Quality Standards (EQSs) that are based on the WQOs.

What are Effluent Quality Standards (EQS)?

EQSs define the maximum allowable concentration of a contaminant of potential concern that can be released into the environment in effluent. These are the standards usually defined in a water use licence.

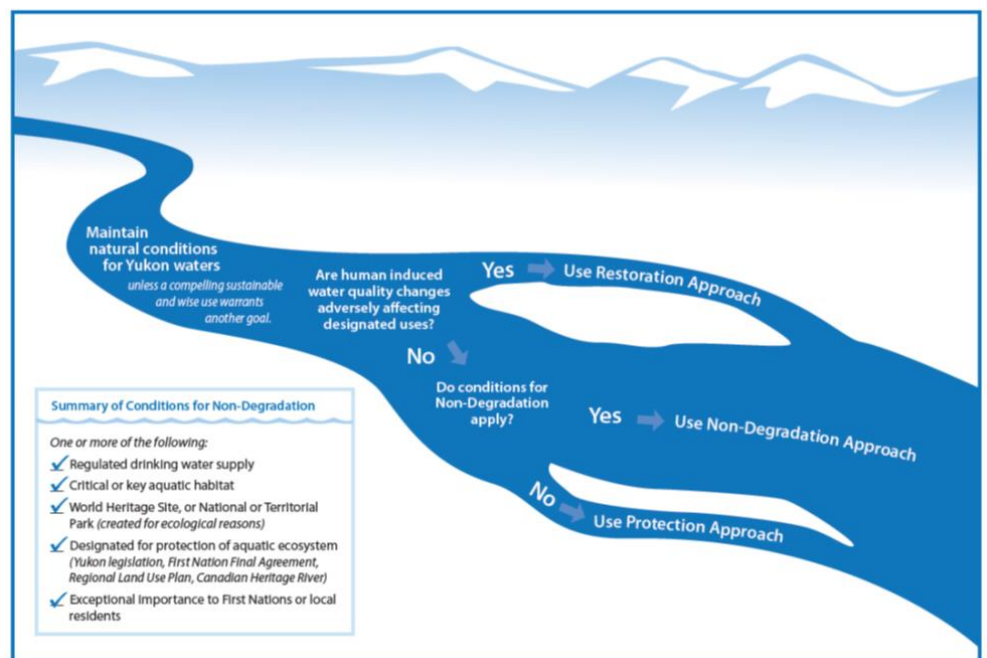
What are Water Quality Objectives (WQO)?

WQOs define the acceptable water quality conditions in receiving waters that may be affected by a project, based on the sensitivity of aquatic ecosystems to contaminants of potential concern.

Why is this important?

Every quartz mining project is unique and therefore requires site-specific approaches to protect receiving environment water quality. There are also multiple approaches and methods to derive WQOs and EQSs, causing uncertainty and delays in regulatory processes. As such, the Guide will provide greater understanding, clarity and predictability for proponents and regulators in deriving site-specific WQOs and EQSs in the Yukon. Through a formalized approach, this Guide will enhance water management decision-making and support the sustainable use of water, now and into the future.

Selecting a water management approach





Chronology of the development of the Guide

In late 2014, the Government of Yukon established a technical working group for the development of the Guide.

In the spring of 2017, the Government of Yukon contracted Minnow Environmental Inc. to complete a technical review of an early version of the draft Guide. Minnow's findings and recommendations were considered during the continued work on the Guide.

From May 2 to June 23, 2017, the Government of Yukon conducted engagement on the draft Guide with interested parties. On May 9, 2017, the Government of Yukon convened a workshop to provide an overview of the draft Guide and solicit initial feedback on the draft Guide. Representatives of the mining industry, First Nations, Government of Yukon, Yukon Water Board, YESAB, consulting companies, and non-government organizations attended the workshop.

The feedback from the 2017 engagement period, the May 9, 2017 workshop, and the additional meetings with First Nations were considered and incorporated into a "What we Heard" report (January 2019). This report includes the main concerns and suggestions of the parties, and the government's responses and actions.

In August 2017, Zajdlik and Associates conducted a review to assess the statistical justification for baseline data requirements. This report confirmed the statistical rationale for sampling requirements in the Guide, such as the requirement for three years of monthly sampling.

In late 2017, the results of a review of requirements for baseline data collection showed that other Canadian jurisdictions have processes and circumstances not comparable to Yukon. Instead, they apply a "terms-of-reference" approach where requirements will be developed specifically for each project. In addition, many southern provinces do not rely on proponent-driven data to the same extent, as they already have developed solid baseline water quality data up and downstream of industrial developments. This applies to British Columbia and Alberta; and Saskatchewan has extensive data for the past 20-30 years for large parts of the province that can be used to complement the proponent's data.

In July 2019, Hemmera Inc. conducted an independent technical review of the Guide. It included some specific questions for consideration: water management approaches, WQO methods, EQS procedures, and baseline data requirements. The review confirmed the methods and approaches in the Guide; and provided 14 minor recommendations that were addressed in the revisions of the Guide.

In May to December of 2020, The Government of Yukon held another targeted public engagement process and integrated feedback into the final version of the guide.