

## Aggregate Resources of Ontario: Policy UNDER THE AGGREGATE RESOURCES ACT

# Water Report

## 1.0 Purpose

The Water Report (the Report) is a requirement of the [Aggregate Resources of Ontario: Technical Reports and Information Standards](#) (the Standards) and must be completed as part of a new application for an aggregate licence, permit, or wayside permit, which proposes to excavate below the water table. The Report is also required under the [Aggregate Resources of Ontario: Amendment Standards](#) for licence and permit amendment applications proposing to extract below the water table. [Ontario Regulation 244/97](#) under the [Aggregate Resources Act](#) defines excavation to be below the water table if it occurs at or less than 1.5 m of the maximum predicted water table, for pits, and at or less than 2.0 m of the maximum predicted water table, for quarries.

The Report must describe the potential impacts of the proposed aggregate operation on ground and surface water resources, and the uses they support (e.g., drinking water supplies and aquatic ecosystem function). Based on hydrological and/or hydrogeological studies undertaken at the proposed pit/quarry site, the Report must also include protection and mitigation measures that will be used to address any identified negative impacts, as well as monitoring plans and contingency plans. This policy provides information and guidance on how to prepare a Water Report.

## 2.0 Key Terms

### 2.1 Qualified Person

Per the Standards, a qualified person (QP) means a registered Professional Geoscientist or exempted Professional Engineer with appropriate training and experience in accordance with the [Professional Geoscientists Act, 2000](#).

## **2.2 Zone of Influence**

For the Report, the zone of influence is the area surrounding a ground water dewatering location (e.g., pumping from a well or quarry sump) where drawdowns may occur due to ground water removal. Therefore, wells and surface water bodies (e.g., wetlands, lakes, watercourses) in the area, which may experience decreased water levels as ground water is removed, must be studied for potential impacts. Flow direction, water quality, and temperature can also be influenced by lowered ground water within the zone of influence.

**Note:** The Maximum Predicted Water Table Report policy discusses additional ground water-related terms — aquifer, ground water table, ground water table in Precambrian rocks, perched ground water, and perched water table.

## **2.3 Study Area**

When preparing a Water Report, the study area considered by the QP should cover the largest possible zone of influence that could result from the proposed excavation and should not be limited to the proposed licence/permit boundary. An iterative approach is often needed to define the study area. Typically, aquifer characterization, which considers local ground water flow conditions that may be relevant to the assessment of impacts, can inform the delineation of the zone of influence or study area.

## **3.0 Reporting**

There are two levels of reporting related to the potential impacts of proposed aggregate operations on water resources.

### **3.1 Water Report Level 1**

A Level 1 Water Report is the first step in determining and addressing potential impacts to ground water and/or surface water resources. This report includes:

- details of the hydrogeologic setting of the proposed excavation, including local geology, hydrogeology, surface water resources, and surrounding land uses.
- a description of the potential for impacts to both ground water and surface water resources and their uses, including discharge areas, from the proposed pit/quarry.

- applicable source water protection policies as well as mitigation measures that will be implemented, if the proposed pit/quarry is within a wellhead protection area for quantity (WHPA-Q), under a [source water protection plan](#) (under the [Clean Water Act](#)). Source water protection areas can be viewed on [Pits and Quarries Online](#) and source water protection policies can be accessed via the [Source Protection Information Policy Atlas](#).

Any restrictions and operational conditions required by the relevant source water protection plan or provincial plan must also be stated on the site plan.

### 3.2 Water Report Level 2

The Standards require a Level 2 Water Report when a Level 1 Water Report identifies potential for impacts to ground water and/or surface water resources and uses. The Level 2 Water Report includes the following:

- assessing and reporting the significance of any potential impacts to ground water and surface water features located within the zone of influence of the proposed pit/ quarry. These features should include but not be limited to water wells (including municipal, private, industrial, commercial, geothermal, and agricultural), springs and seeps, ground water aquifers, water bodies, water courses, and wetlands.
- impact assessment, including a variety of information such as
  - description of the physical setting (i.e., local geology, hydrogeology, and surface water systems, as well as how ground and surface water systems interact at the site),
  - proposed water diversion, discharge, storage, and drainage facilities,
  - water budget, and
  - the possible positive or negative impacts of the proposed aggregate operation on local ground water and surface water resources. **Note:** Potential impacts to flow regime, thermal regime, and water quality may need to be considered when assessing impacts to surface water features and ecosystems.
- description of mitigation measures to address any potential negative impacts.
- ground water and surface water monitoring plan, regardless of whether potential impacts are identified, to

- document any unforeseen impacts, and/or
- track the effectiveness of any implemented mitigation measures.
- contingency and mitigation measures to be implemented in the event of unforeseen, unacceptable impacts, even if no impacts are identified at the time of application.

**Note:** An impact is generally considered ‘unacceptable’ when it compromises the use of the water source (e.g., well) by another user or hinders the ecological functions of natural features within the zone of influence. Mitigation actions should include relevant measures for protecting water resources, as per the [Provincial Planning Statement](#) and any applicable provincial plans.

- Data (in tables, graphs, and figures) as appendices, to support the Report’s findings.
- Rationale for work conducted by the QP, including methodology used to make the determinations presented in the Report.

The Report must be completed by a QP and must include a statement of qualifications and experience in hydrogeology or hydrology. As a best practice, the QP should visit the study area at least once, to verify data collection, site information, geological mapping, and topography (where available) that are provided in the Report.

Any mitigation measures recommended by the QP in the Report must be included as site plan conditions, to satisfy the [Aggregate Resources of Ontario: Site Plan Standards](#).

Given that analyses and recommendations related to water-dependent natural features (e.g., wetlands, lakes, and watercourses) in the Report informs the Natural Environment Report, the QP should consult with persons having expertise in aquatic ecology, limnology, biology, environmental sciences, physical geography, and water resource management, as appropriate, when characterizing impacts and/or developing mitigation measures for water-dependent natural features.

## **4.0 Remote Areas on Crown Land**

Level 1 and Level 2 Reports are not required if the proposed pit/quarry is in a remote area on Crown land and the proposed excavation limit is not within

- 500 m of a coldwater stream,
- 1000 m of a water well (whether dug or drilled), or
- 5 km of a sensitive receptor, as defined in [Ontario Regulation 244/97](#).

**Applicants should contact Ministry of Natural ([ARAapprovals@ontario.ca](mailto:ARAapprovals@ontario.ca)) as early as possible, to determine whether the proposed pit/quarry may be considered remote.**

## **5.0 Other Applicable Approvals**

Aggregate operations proposing to take or discharge water may require approvals under the [Ontario Water Resources Act](#) and the [Environmental Protection Act](#), respectively. Applicants should contact the Ministry of the Environment, Conservation and Parks (MECP) early, for guidance on any applicable approvals, including [permits to take water](#) and [environmental compliance approvals](#). Applicants may also contact the [local MECP district office](#) for guidance on which approvals may be needed.