



Ontario Case Studies – Water Supply and Aggregate Extraction

Prepared For:
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Background

- MNR initiated an assessment of impacts from activities of the aggregate industry by investigating water quality and quantity to support SWP planning.
- Case studies were suggested since each aggregate activity would likely have a different impact on the hydrogeologic / hydrologic system in its vicinity.



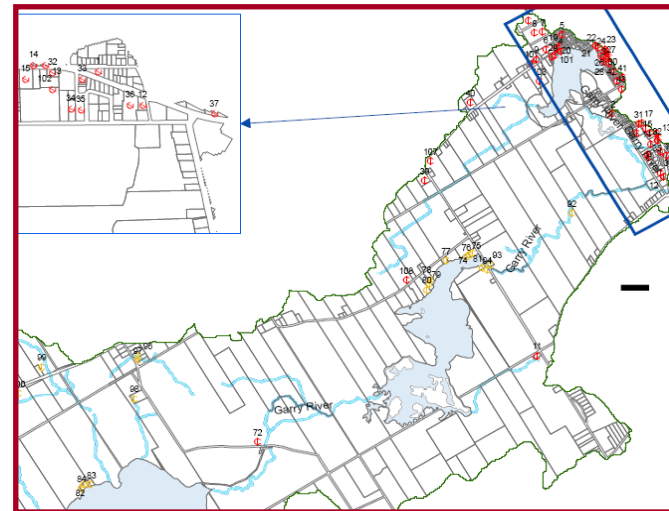
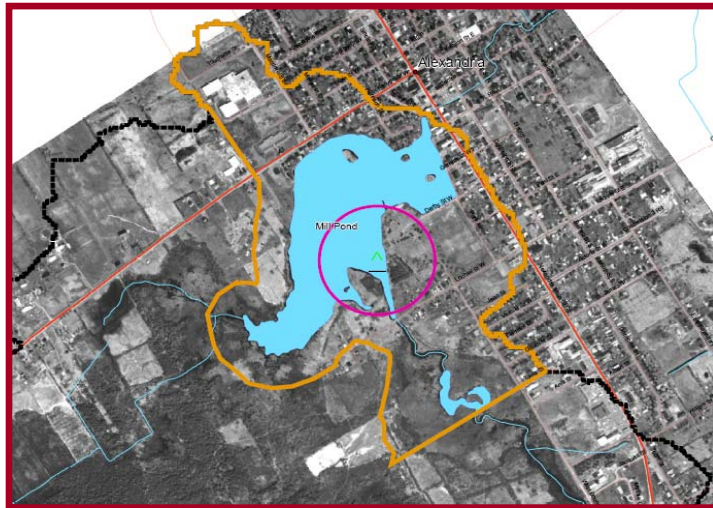
Approach and Methodology:

Task 2 – Map Inventory

- Research and Data Collection
 - MOE – SWP & GW studies, PTTW,
 - CAs, municipalities and SWP working groups – SWP studies
 - MNR;
 - OSSGA;
 - MAAP (Management of Abandoned Aggregate Properties) Program;
- Mapping on ArcGIS

Approach and Methodology:

Task 2 – Map Inventory





Approach and Methodology:

Task 3 – Case Study Recommendations

- Screen pits and quarries based on several criteria, e.g.,
 - Distance to water supplies (i.e., located in IPZ, WHPA, vulnerable areas, etc.)
 - Hydrogeologic (GUDI or not) and hydrologic features (preferential pathways);
 - Availability of data (e.g., water quality/quantity monitoring data, delineation of vulnerable zones)
 - Above and below-water extraction;
- Recommend 20 sites.
- Select 8 locations for case study, following Task Force input



Approach and Methodology:

Task 4 – Data Review and Analysis

- Create database template to store information regarding:
 - aggregate producer description;
 - contaminants of potential concern present onsite (point source/non-point source);
 - water usage/budget description;
 - water quality/quantity trends;
 - hydrogeologic and hydrologic features;
 - water supply/intake description;
 - vulnerability of water supply;
 - historical issues, etc.



Approach and Methodology:

Task 4 – Data Review and Analysis

- Assess potential source water impacts with regard to:
 - Infiltration of contaminants through soil;
 - Exposing of water table for easier migration of surface water;
 - Loss of water quantity due to operations;
 - Risk of contaminated fill/waste disposal following closure;
 - Other activities (e.g., fuel storage) on-site.



Approach and Methodology:

Task 5, 6 – Draft and Final Report

- Draft and final report on all findings
- Fact sheets based on profile summary on 8 case studies (format to be agreed upon)
- Presentation materials (format to be agreed upon)