Hydrogeological Study
Terms of Reference

What is a Hydrogeological Study?		The purpose of a Hydrogeological Study is to define the potential impacts of development on the groundwater and interrelated surface water resources and outlines mitigative and monitoring measures to ensure that the quantitative and qualitative integrity of the groundwater is maintained for future use.[i]
Why do you need a Hydrogeological Study?		Hydrogeological Studies are required for some subdivision applications when triggered by various criteria such as increasing gross floor space and associated minimum lot area as specified in the City of Chilliwack's Zoning Bylaw in the Yarrow Neighbourhood as defined in the OCP. The primary reasons for a hydrogeological assessment are to protect against groundwater and surface water contamination, and to limit groundwater mounding. [ii]
Who should prepare this?		A Qualified Professional (QP) that is regulated under the *Professional Governance Act.* All reports and drawings must be stamped, signed and dated by a QP, licensed in the Province of British Columbia.
What should be included in a Hydrogeological Study?		A Hydrogeological Study should include assessments of existing conditions, impact assessments and mitigation measures. The list on the back provides some examples of what to include in the report[iii], the QP will decide what the final report shall include, these are only suggestions.
Who should the Hydrogeological Reports be addressed to?		The hydrogeological reports should be addressed to the Engineering Department. Please submit the reports to you applicable Land Development Technologist or Planner, who will then forward the reports to the Engineering department.

Existing Conditions

- Introduction and background
- Site location and description (including proposed usage and lot coverage)
- Description of topography and drainage, physiography, geology and soils
- Test pits / boreholes
- Monitoring wells
- Private Well Survey
- Hydrostratigraphy / Hydrogeology: Aquifer properties, groundwater levels, groundwater flow direction
- Description of surface water features and functions
- Water Taking Permit Details
- Water Quality
- Water Supply
- Source Water Protection: Wellhead protection areas, transport pathways, significant drinking water threats, existing conditions / issues
- Ecologically significant groundwater recharge areas
- Existing on-site sewerage system (if applicable)

Impact Assessment

- Groundwater levels
- Pumping tests
- Groundwater discharge
- Water balance
- Groundwater quality
- Onsite Sewage systems
- Source water protection: wellhead protection areas, creation of a transport pathway, significant drinking water threats
- Existing conditions / issues
- Quantity and quality of an aquifer used for the supply of drinking water
- Temporary dewatering
    - If temporary dewatering is required, (Subject to DP1 Areas[iv]), the applicant must provide the following:
        - Sample test water that will be discharged into creek or City's Storm System. Results to meet provincial guidelines for discharging into water courses and to be shared with the City of Chilliwack;
        - Inform us (the City) of the volume and rate (L/S) of discharge, and;
        - Notify the City 24hr before discharging into our Storm System.
- Contaminant migration
- Flow conditions

Mitigation Measures

- Maintenance of Infiltration / recharge
- Maintenance Groundwater Quality
- Monitoring Program
- Contingency Plan
- Groundwater mounding
- Impact of onsite-sewerage system on neighbouring properties

Conclusions and Recommendations

Notes:

1) A peer review may be requested by the City Engineer, and it will be at the sole cost of the applicant.
2) Depending on the nature of the proposal, the City Engineer may request additional information.
3) The applicant and their consultant will be responsible for obtaining the locations of all utilities before any subsurface investigation.
4) A clause or separate letter authorizing the City to rely on the findings and recommendations in the assessment report shall be included with it.

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[i] BC Ministry of Environment – Water Stewardship. Framework for a Hydrogeological Study.

[ii] Ministry of Community, Sport and Cultural Development. Reference Guideline #1 – Hydrogeological Impact Assessment

[iii] City of Barrie. Hydrogeological Study Terms of Reference

[iv] Disposal of dewatering water into the storm and/or sanitary sewer systems is not allowed unless approved by the City. Refer to the "DEVELOPMENT PERMIT AREA NO. 1 Municipal Watersheds & Aquifers"