

DEVELOPMENT PERMIT AREA NO. 1 Municipal Watersheds & Aquifers

1. All developments shall be designed to minimize water quality degradation to the requirements of the City.

2. Excavations greater than three metres in depth or within two metres of the highest recorded water table elevation from June 1st to October 1st must implement, under the supervision of a Qualified Environmental Professional, groundwater protection measures including, but not limited to, the following:
 - a) Dewatering for the excavation, if required, should not:
 - Impact operation of existing municipal supply wells;
 - Impact base flow in creeks within 5 kilometers;
 - Exceed 75 liters per second flow.

 - b) Excavations unattended must be secured by rigid security fencing;

 - c) Surface runoff must be directed away from the excavation to prevent direct seepage into the aquifer;

 - d) All necessary steps must be taken to limit the amount of time that the excavation/aquifer is exposed;

 - e) Disposal of dewatering water into the storm water system is not allowed unless approved by the City; and

 - f) The excavated native material or equivalent as approved by the City must be used to backfill the excavation, where possible.

3. Below-grade structures that extend more than three (3) metres in depth from ground surface or are within 2 metres of the highest recorded water table elevation from June 1st to October 1st must:
 - a) be water proof. Water proofing of the structure must utilize materials that will not impact groundwater quality and be approved by the Engineer;

- b) have an internal design that minimizes potential cracking of the foundation and includes treatment of cold joints to create a complete separation between the structure and the Aquifer;
 - c) be constructed with a monitored drainage system for water volumes and hydrocarbons to detect all upsets;
 - d) not adversely impact groundwater flow patterns; and
 - e) include an internal drainage system that discharges drainage from below grade structures to a sanitary sewer line.
4. All storm water, with the exception of residential foundation drains, shall be conveyed off-site to municipal storm sewers.
5. Storm water from roadways and driveways shall not be discharged directly to ground by means of exfiltration systems or rock pits within the 60-Day Capture Zone, as delineated on Map 1A.
6. Drainage from subsurface structures and parking lot facilities, with the exception of residential roof and foundation drains, shall be controlled using a closed system, which includes oil and grit separators conveyed off-site to a municipal storm sewer.
7. Where a municipal storm sewer system is not available, drainage from subsurface structures and parking lot facilities shall be conveyed to outside of the 60-Day Capture Zone (shown on Map 1A) to a triple chamber treatment facility, which must include, but is not limited to, an oil and grit separator and a gate valve before the infiltration chamber to contain spills.
8. On-site treatment facilities shall be designed by a Qualified Environmental Professional and must ensure the discharged water will not degrade the quality of the aquifer.
9. Commercial, industrial and parking facilities, having areas that are not paved or completed with buildings, shall be covered with low permeability material to reduce infiltration. A soil liner consisting of 0.60 metres of fine-textured soil (clay or clay-loam) constructed beneath Topsoil is an acceptable alternative.
10. All Hazardous Materials, which are handled, and/or stored, shall be minimized and subject to secondary containment utilizing non-permeable construction material, which may consist of a concrete pad and sidewalls to contain the substances should a spill or leak occur. The storage area shall be covered and secured against vandalism. The capacity of secondary containment shall equal at least the maximum volume of the stored material, plus 10%. Secondary containment systems for

volumes of hazardous material greater than 200 litres shall be inspected by a Qualified Environmental Professional.

11. No underground storage tanks for Hazardous Materials shall be permitted. Above ground storage tanks for Hazardous Materials shall conform to requirements set out in this guideline for Petroleum Storage Tanks.

12. Temporary storage of Hazardous Materials during development and/or construction shall:

- a) Utilize secondary containment;
- b) Be covered and secured against vandalism; and
- c) Be protected from damage due to construction equipment and/or construction activities.

13. During construction and/or development:

- a) All equipment not in use shall have oil drip pans under the equipment to prevent contamination;
- b) Equipment refueling shall be performed in a controlled and secured location and every effort taken to prevent fuel spillage; and
- c) Spill containment and cleanup equipment and material shall be available on site. This cleanup material must include, at a minimum:
 - adequate quantities of sand for containment on paved or impervious surfaces
 - adequate quantities of absorbent pads or material to cleanup hazardous spills (capable of absorbing 100% of the Hazardous Materials)

14. The operator of a facility handling or storing Hazardous Materials exceeding a volume of 200 litres shall have a Best Management Plan (BMP) prepared by a Qualified Environmental Professional. The certified BMP shall address the handling, storage and disposal of Hazardous Materials, and include provisions for strict inventory controls.

15. The operator of a facility handling or storing Hazardous Materials exceeding a volume of 200 litres shall have a Spill Response Plan prepared by a Qualified Environmental Professional, and forward one copy to the City's Engineer. The certified Spill Response Plan shall address measures that should be taken at the site in the event of a spill or accident.

16. No underground storage tanks shall be permitted for storing petroleum products. Aboveground storage tanks used for the purpose of containing petroleum products within the Total Capture Zone shall be smaller than 800 liters in size and meet or exceed the *Environmental Code of Practice for Aboveground and Underground Storage Tank Systems Containing Petroleum and Allied Petroleum Products* (2003 or latest version) and the *British Columbia Fire Code* (2006 or latest version).

17. Without limitation to Section 16, aboveground petroleum product storage tanks (ASTs) within the Total Capture Zone shall be constructed to include the following:

- a) Double-walled steel tank construction;
- b) Secondary containment of piping;
- c) Tanks coated with rust-resistant material;
- d) Overfill protection device;
- e) Spill containment device around fill pipe;
- f) A dispenser sump and tank sump, for the control of possible leakage from the dispenser or piping;
- g) Leak detection of the interstitial space, piping and sump(s).

18. Installation of aboveground petroleum product storage tanks shall be conducted by a licensed qualified contractor under the supervision of a Professional Engineer.

19. Every storage tank shall be tested for leakage, following procedures outlined in the Fire Code of British Columbia before putting a new tank into service.

20. Installation of new private wells regardless of purpose is prohibited unless approved by the City. Approvals shall only be considered for properties not serviced by the municipal system. Owners that have a new private water supply well installed shall provide the City with a copy of the well installation record within 30 days of installation.

21. Subsurface geothermal systems including the installation of wells are prohibited.

22. New buildings shall be connected to the municipal sanitary sewer system.

23. Where a municipal sanitary sewer system is not available residential sewage shall be conveyed to an on-site private sewage disposal system which must include, but is not limited to, a two-stage septic system, a large capacity tank and a gate valve before infiltration to subsurface. The two-stage system shall be designed by a Qualified Environmental Professional and shall consist of a separate tank where the sludge is digested and will prohibit mixing of digested sludge with incoming sewage.

24. New commercial, industrial and institutional facilities with an on-site sewage disposal system are not permitted.