

**GROUND SOURCE HEAT EXCHANGE SYSTEMS AND ASSOCIATED  
WELLS BY-LAW**

**BY-LAW # 453-08**

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The Council of The Town of Sussex, under authority vested in it by Section 7(3) of the Municipalities Act Chapter M-22 R.S.N. B. 1973 and amendments thereto, enacts as follows:

**I. TITLE**

- (a) This by-law may be cited as the “Town of Sussex Ground Source Heat Exchange Systems and Associated Wells By-Law”.
- (b) The provisions of this by-law apply to the entire area within the Town limits of the Town of Sussex.

**II. SCOPE**

The intent of this by-law is to regulate the location of and the peripheral effects of ground source heat exchange systems as well as the drilling of wells within the Town of Sussex for any purpose so as to ensure the municipality’s water supply for future generations of this community and, in particular, the protection of the municipality’s aquifer while recognizing private property owner’s rights.

**III. DEFINITIONS**

In this by-law:

- (a) “*Building Inspector*” means the appointed official designated by the Council as a Building Inspector for the Town of Sussex.
- (b) “*Clerk*” means the Clerk of the Town of Sussex.

III. DEFINITIONS (*cont'd*)

- (c) ***“Closed Loop System”*** means a system designed and installed that circulates a constant concentration of approved fluid through an enclosed network of piping or tubing installed in the ground and filled with an approved fluid circulating under pressure.
- (d) ***“Council”*** means the Council of the Town of Sussex.
- (e) ***“Geothermal Heat Exchange System”*** means a system that extracts heat from the ground or body of water through which the piping of the system passes and includes both a closed loop geothermal heat pump system and an open loop geothermal heat pump system.
- (f) ***“Open Loop System”*** means a system designed and installed to obtain water from a source, circulate it through the system extracting heat energy and returning the water to the source or other location.
- (g) ***“Owner”*** means the person in whose name the property is assessed under the Assessment Act, chapter A-14, R.S.N.B. (1973) and amendments thereto and includes the executors, administrators and assigns of such person and should there be more than one (1) owner, it shall mean each of such owners jointly and severally.
- (h) ***“Person”*** means any individual, partnership, company, public or Private Corporation or agency of the Province of New Brunswick, agency or any other legal entity.
- (i) ***“Town”***, when hereinafter used, shall mean and include all the area within the boundary limits of the Town of Sussex.
- (j) ***“Treasurer”*** means the Treasurer of the Town of Sussex.
- (k) ***“Works Officer”*** means the Works Officer for the Town of Sussex.

**IV. GENERAL**

- (a) No person shall withdraw water from the Town's potable water supply system for use in the operation of a water source heat exchange system.
- (b) No person shall withdraw water from the Town's aquifer for use in the operation of a water-source heat exchange system nor shall a person drill or cause or authorize a well to be drilled for the purpose of obtaining a water supply for any purpose whatsoever.
- (c) No person shall install or permit to have installed any open loop geothermal heat pump system within any area of the Town of Sussex.
- (d) No piping for any closed loop geothermal heat pump shall be permitted to be installed at elevations less than the footing elevations for the building for which the geothermal heat pump is intended, or not less than 2.5 meters below the average lot elevation.
- (e) The existing wells that withdraw water from the Town's aquifer for use in the operation of a water-source heat exchange system are exempt from this by-law.
- (f) Property owner(s) shall grant permission for an appointed representative of the Town to enter onto the property, including premises to inspect any geothermal heat exchange system, as and when appropriate to ensure compliance with this by-law.

**V. CLOSED LOOP GEOTHERMAL HEAT PUMP RESTRICTIONS**

- (a) Prior to the installation of a closed loop geothermal heat pump system as a component of new construction, every owner shall complete, or cause to be completed by his agent, the "Heating System" section of the Town of Sussex Building Permit application form.
- (b) Prior to commencing any retrofit or separate installation of a closed loop geothermal heat pump system every owner shall submit a written request as application to the Town of Sussex.

V. CLOSED LOOP GEOTHERMAL HEAT PUMP RESTRICTIONS (*cont'd*)

- (c) The application referred to in subsection 3(1) and 3(2) shall:
  - (i) include a site plan indicating each proposed closed loop geothermal heating system well location and the relative locations of any existing or abandoned wells on the subject property and immediately adjacent properties;
  - (ii) include complete and detailed specifications of the proposed closed loop geothermal heat pump system;
  - (iii) provide the name and address and telephone number of the owner, contractor, and the system installer(s); and
  - (iv) indicate the type of heat transfer media (fluid) to be used.
- (d) No owner shall install or permit to have installed a closed loop geothermal heat pump system, or any components of the vertical or horizontal loop systems unless installed by a Certified Installer, certified by the International Ground Source Heat pump Association (IGSHPA) or equivalent certification.
- (e) No owner shall install or permit to have installed a closed loop geothermal heat pump system unless it is in compliance with the latest versions of the CSA Standard CAN/CSA-C445-M92, the laws of the Province of New Brunswick and the by-laws of the Town of Sussex and such additional requirements as may be established by the Works Officer.
- (f) No person shall use an installer of a geothermal heat pump system to install a geothermal heat pump system unless the installer provides a guarantee of their work for a minimum of twelve months following completion.

V. CLOSED LOOP GEOTHERMAL HEAT PUMP RESTRICTIONS (cont'd)

- (g) No person shall install or permit to have installed a geothermal heat pump system within:
  - (i) 90 meters of a storage area for commercial fertilizers or chemicals, an existing or decommissioned landfill site, existing or decommissioned lagoon or waste treatment facility, aboveground or underground storage tank for petroleum products or chemicals;
  - (ii) 15 meters of an existing operating well, buried sewer, a pit or unfilled space below ground surface, a sump, except that a geothermal heat pump well may be drilled closer than 15 meters to a basement or another geothermal heat pump well on the subject property; or
  - (iii) The minimum setback from an existing sewer line is as follows
    - 15 meters if the well is up-gradient
    - 23 meters if the well is at the same ground level gradient
    - 30 meters if the well is down-gradient.
- (h) Any closed loop geothermal heat pump system remaining dormant or unused for a period greater than one heating season must be closed and drained by the owner.
- (i) Any geothermal heat pump system with unused wells or abandoned heating system wells or abandoned in-ground infrastructure must be decommissioned, grouted and sealed by the owner to the satisfaction of the Province.
- (j) The heat-transfer media used in a geothermal heat pump system must consist of a non-toxic fluid approved for use by the Works Officer, including but not limited to:
  - (i) water;
  - (ii) aqueous solution of sodium or calcium chloride;
  - (iii) food quality propylene glycol;
  - (iv) potassium acetate with less than 1% corrosion inhibitors; or

V. CLOSED LOOP GEOTHERMAL HEAT PUMP RESTRICTIONS *(cont'd)*

- (j) (v) pure glycerin solution in which glycerin is a least 95% US pharmacopeia grade.

VI. PENALTIES

- (a) Any person violating any of the provisions of this by-law shall become liable to the Town for any expense, loss or damage occasioned the Town by reason of such violation.
- (b) Any person found violating any provision of this by-law or who suffers or permits any act or thing to be done in contravention or violation of any provision thereof or neglects or fails to do any act or thing herein required is liable on summary conviction to a fine as may be imposed for commission of an offence punishable under Part II of the Provincial Offences Procedure Act, R.S.N.B. (1973), Chapter P-22.1, and amendments thereto, as a Category D offence.

VII. PLURAL OR FEMININE TERMS

Plural or feminine terms may apply whenever the singular, masculine or feminine is used in this by-law. It shall be considered as if the plural, feminine or masculine has been used where the context of the party or parties hereto so requires.

VIII. VALIDITY

The invalidity of any section, clause, sentence or provision of this by-law shall not affect the validity of any other part of this by-law which can be given effect without such invalid part or parts.

**VIX. REPEAL**

- (a) The repeal of A By-Law Controlling Ground Source Heat Exchange Systems and Associated Wells, By-Law # 453-99, enacted on May 17, 1999, shall not affect any penalty, forfeiture or liability incurred before such repeal or any proceeding for enforcing same completed or pending at the time of repeal nor shall it amend, defeat, disturb, invalidate or prejudicially affect any matter or thing whatsoever completed, existing or pending at then time of repeal.
  
- (b) The by-law entitled “A By-Law Controlling Ground Source Heat Exchange Systems and Associated Wells”, By-Law # 453-99, enacted on May 17, 1999, and amendments thereto are hereby repealed.

**READ FIRST TIME BY TITLE** JUNE 23, 2008

**READ SECOND TIME BY TITLE** JUNE 23, 2008

**READ IN ENTIRETY** AUGUST 25, 2008

**THIRD READING BY TITLE  
AND ENACTED** AUGUST 25, 2008

RALPH A. CARR  
MAYOR

PAUL I. MAGUIRE  
TOWN CLERK