On-Site Sewage System Maintenance Inspections

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Building and Development Branch
Ministry of Municipal Affairs and Housing

Introduction

The *Building Code Act, 1992* and Building Code (Ontario Regulation 350/06) regulate the design, construction and renovation of treatment systems which are located wholly on the property which they serve (i.e. "on-site") and have a design sewage capacity of 10,000 litres/day or less.[1] Such systems typically provide treatment for smaller buildings such as houses, cottages and small businesses.

Enforcement of the on-site sewage provisions of the *Building Code Act, 1992* and Building Code is the responsibility of local enforcement bodies, or "principal authorities", – the municipality, the board of health or the conservation authority, depending on the location within Ontario.

Ontario's Building Code (Ontario Regulation 350/06) was recently amended to establish and govern mandatory on-site sewage system maintenance inspection programs, to be administered in certain areas by local enforcement bodies. The recent amendments to the Building Code also govern discretionary on-site sewage system maintenance inspection programs established by local enforcement bodies.

The Ministry of Municipal Affairs and Housing, in consultation with the Ministry of the Environment, has developed this document for principal authorities to provide information and highlight certain issues respecting inspections undertaken in connection with on-site sewage system maintenance inspections programs.

> Note: This document has been prepared for explanatory purposes only and does not form part of the regulations, and is not intended to provide legal or other professional advice. Persons requiring such advice should consult their legal or professional advisors.

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[1] "sewage system" is defined in Article 1.4.1.2. of Division A of the Building Code (Ontario Regulation. 350/06) as follows:

Sewage system means,

(a) a chemical toilet, an incinerating toilet, a recirculating toilet, a self-contained portable toilet and all forms of privy including a *portable privy*, an *earth pit privy*, a *pail privy*, a *privy vault* and a composting toilet system,

(b) a *greywater* system,

(c) a cesspool,

(d) a *leaching bed* system, or

(e) a system that requires or uses a *holding tank* for the retention of *hauled sewage* at the site where it is produced before its collection by a *hauled sewage system*,

where these,

(f) have a *design capacity* of 10,000 litres per day or less,

(g) have, in total, a *design capacity* of 10,000 litres per day or less, where more than one of these are located on a lot or parcel of land, and

(h) are located wholly within the boundaries of the lot or parcel of land on which is located the *building* or *buildings* they serve.

Authority for Inspections

Sewage system maintenance inspections are generally intended to determine whether a sewage system is in substantial compliance with the operation and maintenance requirements outlined in Section 8.9. of Division B or, in the case of discretionary programs, with the requirements enforced by the program. These inspections are undertaken by inspectors appointed by Principal Authorities in respect of maintenance inspection programs:

- Required under Article 1.10.2.3. of Division C of the Building Code ("Mandatory Programs"); and
- Established by Principal Authorities under by-laws, resolutions or regulations under clause 7(1)(b.1) of the *Building Code Act, 1992* ("Discretionary Programs").

Identification of Sewage System Maintenance Inspection Program Areas and Sewage System Inventory

As a first step, Principal Authorities will need to identify areas that would be subject to Mandatory Programs (these areas are set out in Article 1.10.2.3. of Division C of the Building Code) and, where applicable, Discretionary Programs.

As a next step, Principal Authorities will need to identify existing sewage systems located within areas subject to Mandatory Programs and Discretionary Programs. These sewage systems may be identified by reviewing:

a) Assessment reports, in consultation with the local source protection authority, to identify septic systems identified as part of the assessment report threat enumeration;
b) Permit applications submitted under the *Building Code Act, 1992*;
c) Certificates of approval or use permits issued under the Environmental Protection Act;
d) Orders issued under the *Building Code Act, 1992*;
e) Records of problems and complaints;
f) Water use records;
g) Maintenance inspection reports (for systems that require the existence of a service agreement as a condition of use, or for systems previously inspected by the Principal Authority);
h) Lists of properties with residential or other uses not serviced by sewage works administered by the Ministry of the Environment [or municipal services]; and/or
i) Field surveys.

Inspection Notification

Mandatory inspection programs require that all systems be inspected every five years. In doing so, Principal Authorities may choose to prioritize areas for inspection based on:

- Proximity to a municipal residential drinking water well or surface water intake as identified in the local assessment report;
- Known groundwater or surface water contamination related to sewage;

- Previous drinking water issues at a well or intake that may be related to sewage, as identified in the local assessment report;
- Age of on-site sewage system;
- Systems without records.

Principal Authorities may find it helpful to notify property owners of the intention to inspect their property. Such notifications may include notice of:

a) Any applicable fees to be charged;
b) Procedural information;
c) Whether the Principal Authority accepts third-party certificates as an alternative to conducting an inspection and, if so, requesting owners to notify the Principal Authority if they have retained a third party for this purpose;
d) A contact name within the Principal Authority, and
e) The legislative authority for the inspection program.

It may be helpful to send such notifications well in advance of the inspection to give the opportunity for the property owner (or representative) to be on site on the day of the inspection and to gather information and records which may assist in the inspection, and also to give the property owner the opportunity to undertake remedial work prior to the inspection.

Where the Principal Authority has determined that it will accept third-party certificates as an alternative to conducting an inspection, the Principal Authority should provide sufficient time:

a) for the property owner to consider retaining a person qualified to sign such a certificate;
b) if a person is retained, for the person to inspect the sewage system; and
c) for any necessary remedial work to be carried out where this will be necessary before the person may sign the certificate.

Inspections

Maintenance Inspections - Overview

These guidelines provided in this document set out a progressive audit approach to maintenance inspections for sewage systems, as with most inspections under the *Building Code Act, 1992.* Under this approach, initial inspections are designed to be non-intrusive tests and will generally avoid significant disturbance to the system and to the surrounding soil area. Where concerns are identified, more tests may follow.

A Phase I maintenance inspection may be sufficient to establish compliance with Section 8.9. of the Building Code or with the standards enforced under a Discretionary program. A follow-up Phase II inspection (described below) is required where the Phase I inspection indicates a defect or failure of the system.

Phase I – Maintenance Inspections

Inspections generally begin with a review of available material, including material collected in the identification phase, and reports from previous inspections.

The purpose of Phase I maintenance inspections is to:

a) Obtain the most recent information on the system, as well as the size of the building and the number of fixtures and bedrooms that it is servicing;
b) Locate the sewage system's components;
c) Identify any obvious or outward signs of malfunction or failure; and
d) Identify systems that are at risk of malfunction or failure.

Phase I maintenance inspections generally avoid significant disturbance to the system and the surrounding soil area. During the course of a Phase I maintenance inspection, the inspector would normally identify:

a) The type of occupancy to determine the source and type of the sanitary sewage;
b) The source of water supply (municipal, well, lake, etc);
c) The approximate volume of sewage generated;
d) The use of special devices such as garbage grinders or water softeners;
e) The general nature of the system (class, components, type, layout, etc);
f) The location of the system's components with respect to wells, surface water, and other environmental features;
g) The approximate level of ground water: This may be achieved by
    i. reviewing local maps and records of ground water elevation observed on site or nearby properties, including the local assessment report, if available;
    ii. Observing the conditions of the septic tank and the distribution box for indications of ground water infiltration;
    iii. Observing the elevation of nearby water body, or evidence of ground water infiltration in other subsurface structures; or
    iv. The use of hand augering;
h) The size, material and the condition of the septic tank, or the holding tank;
i) The frequency of tank pump-out and the last time the tank was cleaned;
j) Any indication of sewage system failure, including:
    i. Evidence of backup of effluent;
    ii. Signs of hydraulic failure (breakout of sewage, wetting conditions in the leaching bed area);
    iii. Condition of surface vegetation; and
    iv. Odour problems;
k) Documentation of previous effluent sampling test results where required (i.e., under Article 8.9.2.4. of the Building Code).

Phase II – Follow-Up Maintenance Inspections

It may be appropriate to undertake more intensive follow-up maintenance inspections where:

a) The Phase I maintenance inspection has identified that the septic system is at risk of future malfunction or failure, or
b) The Phase I inspection detected a malfunction or failure, but did not reveal the reason (e.g., location or nature) of malfunction or failure.

Phase II inspections will be familiar to Principal Authorities in terms of usual Building Code enforcement activities (i.e., investigation of potentially failing sewage systems, inspections due to neighbour complaints). These inspections may typically include examinations of the following elements:

a) The depth of the sludge layer and the distance from the top of the sludge layer and the outlet tee;
b) The thickness of the scum layers;
c) The distance between the bottom of the scum/grease layer and the bottom of the outlet tee;
d) The distance between the top of the scum layer and the top of the outlet tee;
e) The physical condition of the inlet and outlet; and
f) The condition of the effluent filter, if utilized.

For sewage systems utilizing treatment units, Phase II inspections may also include a review of:

a) The existence of a maintenance agreement and the date of latest servicing;
b) The test results of a new round of effluent sampling (if otherwise required by the Building Code, or by an authorization issued by the BMEC); and
c) Operational problems or system malfunction before or, at the time of inspection.

Where used in sewage systems, distribution boxes, dosing tanks and pumps may be inspected to determine their condition and functionality.

Phase II inspections of leaching beds may also consider:

a) Clearance distances to environmental features, wells and surface water intakes;
b) Soil type and its permeability;
c) Additional sources of hydraulic loading (e.g. surface discharge, roof drains);
d) Evidence of ponding;
e) Encroachments into the leaching bed area (e.g. building additions, patios, driveways, pools); and
f) Trees and deep rooting shrubs in the vicinity of the bed.

Blockages in the leaching bed and pollution sources may be identified by measures including:

a) Evaluation of in-home plumbing and estimates of water usage;
b) Conducting a leak diagnostics;

c) Conducting a flow trial;
d) Conducting a dye tracing test; or
e) Excavating a cross section of the leaching bed.

Inspection Reports

Principal Authorities may wish to maintain documentation in respect of maintenance inspections, which could include the following information:

a) Identification of the property attended;
b) Identification of any information collected as part of the inspection;
c) Status of deficiencies noted in previous inspections;
d) Deficiencies identified during the current visit;
e) The legislative authority for the inspection program; and
f) Enforcement action taken.