

# GUIDELINES FOR SUBDIVISION

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Author(s): PHP Management Team  
Issuing Authority: Chief Medical Health Officer  
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**northern health**

## TABLE OF CONTENTS

Explanation of Terms.....	3
Introduction .....	4
Background.....	4
Purpose .....	5
Overview of the Referral Process .....	5
Recommended Minimum Lot Sizes .....	6
Water Supply.....	7
On-Site Sewage Disposal.....	8
Absorption fields .....	8
Siting .....	9
Sizing .....	9
Lagoon Systems .....	10
Floodplains .....	11
Existing Sewage Disposal Systems .....	11
Section 219 Covenants.....	12
Community Sewage Disposal Systems .....	12
Required Site Information and Site Preparation for On-Site Sewage Disposal Systems .....	13
Soil Testing and Evaluation .....	13
Percolation Test Results .....	13
Soil Evaluation (Observation Holes).....	14
Lot Plans.....	15
Site Preparation .....	15
Additional Information/Documentation .....	16
Links and Resources .....	16
Appendix A: Horizontal Setback Requirements.....	17
Appendix B: Discharge Area for 4 Bedroom House.....	18
Appendix C: Percolation Test Procedure.....	19

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## EXPLANATION OF TERMS

**“breakout point”**: a point down grade of an absorption field or lagoon where effluent could surface onto the land, enter a drain, cross a property boundary, or enter surface water. For example, existing and proposed ditches, drains, cut banks, sharp embankments, building foundation drains, etc.

**“discharge area”**: an area designated to be used to receive effluent discharged from a treatment method. For example, an absorption field or lagoon.

**“domestic purposes”**: the household use of water, for the preparation of food, dishwashing, personal sanitation, and general household cleaning and laundry, generated during operation and support of the household.

**“domestic water system”**: means a system by which water is provided or offered for domestic purposes.

**“domestic sewage”** means human excreta and waterborne waste from the preparation and consumption of food and drink, dishwashing, bathing, showering, and general household cleaning and laundry.

**“effluent”** sewage, water or other liquid, partially or completely treated or in its natural state, flowing out of a septic tank, subsurface wastewater infiltration system, aerobic treatment unit, or other treatment system or system component.

**“potable water”** means water that meets the standards prescribed by the *Drinking Water Protection Regulation* and is safe to drink and fit for domestic purposes.

**“seasonal high water table”** means the highest level of ground water in the proposed absorption field or lagoon area.

**“surface water”** means a natural watercourse or source of freshwater, whether usually containing water or not, and includes:

- (a) a lake, river, creek, spring, ravine, stream, swamp, gulch and brook, and
- (b) a ditch into which a natural watercourse or source of fresh water has been diverted, but does not include ground water or water in a culvert that is constructed to prevent the contamination of a watercourse by domestic sewage or effluent.

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**“treatment method”** means a treatment method for domestic sewage classified as Type 1, Type 2 or Type 3 where,

- (a) Type 1 is treatment by septic tank only,
- (b) Type 2 is treatment that produces an effluent consistently containing less than 45 mg/L of total suspended solids and having a 5 day biochemical oxygen demand of less than 45mg/L, and
- (c) Type 3 is treatment that produces an effluent consistently containing less than 10 mg/L of total suspended solids and having
  - a. A 5-day biochemical oxygen demand of less than 10 mg/L, and
  - b. A median fecal coliform density of less than 400 Colony Forming Units per 100 mL.

**“unsaturated native soil”** means soil placed by natural geological processes that is above the seasonal high water table and has not been artificially disturbed.

**“water supply system”** means a domestic water system, other than a domestic water system that serves only one single-family residence.

The BC Sewerage System Standard Practice Manual: (SPM) Appendix “A”) also has a detailed Glossary of TERMS. If there were to be a conflict in definition of terms, the SPM would be considered correct.

[http://www.health.gov.bc.ca/protect/lup\\_legislation.html](http://www.health.gov.bc.ca/protect/lup_legislation.html)

## INTRODUCTION

### BACKGROUND

Approving Officers from the Ministry of Transportation, Regional Districts or Municipalities may refer subdivision applications to Northern Health for comment, as indicated in the *Local Services Act, Subdivision Regulations*. Subdivision applications that are referred to Northern Health are assessed on the basis of current provincial health legislation and Northern Health policies and guidelines. Once an assessment has been completed, recommendations are provided to the Approving Officer. Northern Health does not provide any form of “approval” regarding the subdivision of land.

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The Approving Officer will refer only those subdivision applications that have lots less than 10 acres to Northern Health for evaluation with respect to health legislation, policies and guidelines. However, if the Approving Officer has a concern where the lots are 10 acres or larger, these may also be referred to Public Health Protection.

*This guideline also applies to “Residential Development Applications” (purchase/lease of Crown Land) that are referred to Northern Health by FrontCounter BC (on behalf of the Integrated Land Management Bureau).*

## PURPOSE

The purpose of this guideline is to:

- Safeguard public health and the environment by ensuring that each proposed lot of a subdivision can either (a) reliably support an on-site sewage disposal system, or (b) be serviced by a community sewage disposal system,
- Avoid the creation of lots that cannot support the installation of established and proven sewage disposal systems. All new lots should be suitable for their intended use without having to be serviced by costly, high risk, high maintenance or experimental sewage systems,
- Protect drinking water sources.

## OVERVIEW OF THE REFERRAL PROCESS

A Northern Health Environmental Health Officer receives a proposed subdivision application from an Approving Officer for comment on the suitability of proposed new lots for servicing with on-site sewage disposal systems. If a water supply system, that will service anything other than one single-family residence, is proposed, it will also be assessed with regards to the requirements of the *Drinking Water Protection Act* and the *Drinking Water Protection Regulation*. Environmental Health Officers will not assess a proposed subdivision unless they have received a written referral from an Approving Officer.

There is an **administrative fee** for processing subdivision applications referred to Northern Health. This fee must be paid in full before an assessment of the application will begin. The base fee for a subdivision application is \$200. There is also an additional fee of \$100 for each lot that

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is created in the application. For example, the fee for a five-lot subdivision, or four lots and a remainder would be:

$$\$200 \text{ (base fee)} + (5 \times \$100) = \$700.$$

The subdivision application must contain the minimum site information, as specified in this guideline. If it does not, the Environmental Health Officer will inform the Approving Officer, in writing, of this fact. The applicant will be sent a copy of the letter and a copy of this guideline.

Provided the application is complete, an Environmental Health Officer will arrange and perform an on-site inspection of the proposed subdivision. Site inspections will not be conducted during the winter, or in the spring until all snow has melted. In some cases, the Environmental Health Officer may request additional information from the applicant following the on-site inspection. Once the assessment has been completed, recommendations will be sent, in writing, to the Approving Officer. A copy of these recommendations will also be sent to the applicant.

## RECOMMENDED MINIMUM LOT SIZES

Local government is responsible for community planning, including determining lot sizes. However, in cases where there is no zoning, it is recommended the following minimum lot sizes be observed:

- For lots that will be serviced by a “water supply system”, as defined in the *Drinking Water Protection Act* and *Drinking Water Protection Regulation*, the recommended minimum lot size is 0.2 hectares (0.5 acres).
- For lots that will have individual water systems (wells), the recommended minimum lot size is 1.0 hectares (2.5 acres).
- For lots that will use a lagoon system for on-site sewage disposal, the recommended minimum lot size is 1.6 hectares (4.0 acres).

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## WATER SUPPLY

Each lot in a subdivision should have an adequate supply of potable water. This may be achieved by having an individual domestic water system for each lot, by the extension of an existing water supply system, or by the construction of a new water supply system to service the subdivision. **At this time we are not requiring land owners to prove availability of potable water** but we must consider these potential sources of water as we assess the sites. There may be lots developed where the only potential potable source is water hauled in from an approved source and held in a reservoir or cistern.

A domestic water system that serves only one single-family residence is not subject to provincial legislation, with the exception of the *Sanitary Regulations*. This regulation requires that wells be at least 100 feet from any probable source of contamination, including sewage disposal systems. If the applicant is proposing individual (well) water supply systems for each lot, the location of existing and proposed wells must be shown on the subdivision plans.

**Note:** *Surface water is very vulnerable to contamination and may contain harmful bacteria, viruses, and/or parasites. Surface water should not be used for domestic purposes without adequate treatment (disinfection). Adequate treatment systems are costly and require regular monitoring and maintenance. As such, we do not recommend the use of surface water sources to serve a single-family residence.*

A water supply system that will serve anything other than one single-family residence must meet the requirements of the *Drinking Water Protection Act* and the *Drinking Water Protection Regulation*. One of the requirements of the *Drinking Water Protection Act* is that a person must not extend, construct or install a water supply system unless they have obtained a construction permit. It will generally be recommended to the Approving Officer that a construction permit to extend or install a new water supply system be applied for and obtained by the applicant before final subdivision approval. If applicants would like more information on how to apply for a construction permit, they may contact an Environmental Health Officer.

**Note:** *Water supply systems that are on a "Boil Water Advisory" will not be granted a construction permit to extend the system until the problem is corrected and the "Boil Water Advisory" has been rescinded.*

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## ON-SITE SEWAGE DISPOSAL

Each proposed lot in a subdivision should have sufficient area, with suitable site conditions, to accommodate an on-site sewage disposal system(s) capable of reliably servicing a single-family four-bedroom residence. Alternatively, lots may be serviced by a community sewage disposal system.

If a commercial development is proposed, the sizing of the sewage disposal system(s) must be based on a reasonable estimate of the typical flow rate that will be generated by the facility. Sufficient detail regarding the proposed commercial development must be provided in the application so it can be determined whether the proposed sewage disposal system(s) are appropriately sized and sited. Depending on site and soil conditions, a Section 219 Covenant, to limit the sewage flows generated by a commercial development, may be recommended to the Approving Officer.

**Note:** *The subdivision of land on the basis of sewage holding tanks will not be considered.*

## ABSORPTION FIELDS

Absorption fields (i.e. subsurface trenches and pipes) are the most common and accepted method of effluent dispersal. It involves effluent being transported from a septic tank through piping (by gravity or pressure) to numerous subsurface trenches located in permeable, unsaturated native soil. The effluent “percolates” through the soil and as it does it is treated through a variety of physical, biological, and chemical processes.

Whether or not an absorption field is suitable for a particular site is dependent on many factors including, the depth of native soil, the permeability of the soil, the location of the ground water table and/or restrictive layer, the slope of the land, etc.

For each proposed lot, **two** suitable absorption field areas must be identified (primary and reserve). A reserve area is required because absorption fields have a limited life span. When the primary field fails, a suitable area for a replacement field will be needed.

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## Siting

When considering the siting of absorption fields, the following minimum requirements must be met:

- There must be a minimum of 1.2 metres (4 feet) of unsaturated, permeable native soil above the seasonal high water table or restrictive layer. If lots are larger than 2 hectares (5 acres) in size, then reduced native soil depths may be considered.
- The slope of the land in the proposed absorption field area cannot be greater than 24%.
- The minimum horizontal setback requirements, as specified in Appendix A, Table 1.

## Sizing

The following is to be taken into account when sizing proposed absorption field areas:

- The sizing of the absorption field areas is to be based upon a minimum design flow rate of 1700 litres (375 gallons) per day (4 bedroom residence).
- The sizing of the absorption field areas is to be based upon the Hydraulic Loading Rate for effluent that has undergone Type 1 treatment (septic tank), as specified in Table 2-8 in the *BC Sewerage System Standard Practice Manual* (refer to Section 6.0 for a link to this document) Sewage disposal systems with Type 1 treatment are generally less expensive and require minimal levels of maintenance when compared to Type 2 or Type 3 Systems. In addition, many areas in Northern BC do not yet have qualified maintenance providers available for Type 2 and Type 3 systems. As such, the sizing of absorption fields on the basis of Type 2 or Type 3 treatment will not be considered.
- Ideally, percolation rates in the proposed absorption field areas should be between **2-30 minutes per 2.5 cm**. Areas with percolation rates that are between 30-60 minutes per 2.5 cm may be considered for an “extended” absorption field system provided the soil conditions and lot size are suitable. Soils in the 30-60 minutes per 2.5 cm percolation range, which have a moderate to strong platy structure, are **not** suitable.

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- Areas with percolation rates less than 1 minute per 2.5 cm are generally not acceptable for Type 1 effluent. However, the Environmental Health Officer may consider areas with percolation rates less than 1 minute per 2.5 cm if the soil depth is in excess of 2.5 metres and ground water is not at risk of contamination. Additional information from a Professional Geoscientist or Hydrogeologist may be required in these situations.
- The sizing of the absorption field areas is to be based on subsurface trenches that are 0.6 metres (2 ft) wide and spaced 1.8 metres (6 feet) apart on-center,
- The calculated absorption field areas are to be increased by 10%. This will allow for ease of construction during development (i.e. moving heavy equipment, avoiding structures, etc.).
- If the slope in a proposed absorption field is 5% or greater, than an additional 1% overall increase in size, for each 1% of slope, is needed. For example, if the slope of the land in the absorption field is 15%, an additional 15% overall increase in the size of the absorption field is necessary.
- The size of the proposed absorption field areas must not exceed 25% of the overall lot size. The lot size must be increased if the minimum absorption field areas are greater than 25% of the overall proposed lot size.

**\*\*\*\*\*Refer to Appendix B for examples of absorption field sizing\*\*\*\*\***

## **LAGOON SYSTEMS**

In certain situations, a lagoon system may be an acceptable form of onsite-sewage disposal. If a lagoon is proposed for on-site sewage disposal, the following minimum requirements must be met:

- A minimum lot size of 1.6 hectares (4.0 acres),
- A minimum of 3 metres (10 feet) of unsaturated native soil,
- The percolation rates in the proposed discharge area must be 60 minutes per 2.5 cm or slower,

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- The slope of the land in the proposed discharge area cannot be greater than 12%,
- The minimum horizontal setback requirements, as specified in Appendix A, Table 1,
- The minimum lagoon size requirement for a four-bedroom residence, as specified in Table 3-10 of the *BC Sewerage System Standard Practice Manual*.

Lagoon systems are based on the concept that the output of effluent from the lagoon (through evaporation and transpiration) is greater than the input (sewage flow and precipitation). Thus, whether or not a lagoon system is appropriate is very dependent on the local climate. Even if the above minimum requirements are met, a lagoon may not be feasible because of the local climate, or, in some cases, a lagoon with a larger surface area or multiple cells may be required.

## FLOODPLAINS

To protect sewage disposal systems from flooding, the proposed discharge areas must be located above the 200-year floodplain (if that information exists). It is incumbent on the land owner to provide the floodplain information. Some lot(s) may be required to have specialized surveys to establish the floodplain elevation as set by the Ministry of Environment or Regional District bylaw.

## EXISTING SEWAGE DISPOSAL SYSTEMS

In some cases, subdivision applications include proposed lots that have an existing dwelling with an existing sewage disposal system. The applicant should be able to provide documentation that shows that the existing sewage disposal system was constructed in accordance with provincial health legislation (e.g. a permit issued by an Environmental Health Officer or a "Letter of Certification"). If this documentation is not available, the Environmental Health Officer may request that a qualified "authorized person" (as defined in the *BC Sewerage System Regulation*) inspect the existing sewage disposal system. After the inspection, a written assessment report is to be submitted to the Environmental Health Officer for review. In addition, the applicant will still need to demonstrate that the proposed lot has a reserve discharge area, which can meet the criteria specified in this guideline.

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**Note:** If, in the opinion of an Environmental Health Officer, an existing sewage disposal system is causing a health hazard, the system will need to be appropriately repaired or replaced.

## SECTION 219 COVENANTS

Section 219 Covenants (pursuant to Section 219 of the *BC Land Title Act*) are registered limitations on a property. Covenants are registered with the Land Title Office and can inform future landowners of the limitations of the property prior to purchase, identify areas where they can or cannot build, and can protect sewage discharge areas from being inadvertently damaged or destroyed. In certain circumstances, the registration of a Section 219 Covenant on a lot, in order to protect and reserve sewage discharge areas, may be recommended to the Approving Officer. For example, a Section 219 Covenant could be recommended on lots that are less than 1 acre in size or on lots with only one suitable area for a primary and reserve absorption field. It is the responsibility of the land owner to have a covenant prepared, if the approving officer requires one.

## COMMUNITY SEWAGE DISPOSAL SYSTEMS

Pursuant to *the BC Sewerage System Regulation*, community sewage systems intended to service a subdivision with a combined design daily domestic sewage flow of less than 22,700 litres (22.7 m<sup>3</sup>) fall under the jurisdiction of the Health Authority. The development of community systems may be a complex, expensive and time-consuming process. However, in some situations it may provide the best or only alternative. The following minimum criteria will need to be considered for community systems:

- Community systems must be pursued under the Strata Property Act and associated Regulations. The strata corporation created is ultimately responsible for the operation and maintenance of the sewage system.
- Both a primary and reserve sewage discharge area is required.
- The community sewage system must be designed by a professional engineer experienced in soils, hydrogeology and sewage disposal systems.

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- The developer must construct the community system before final subdivision approval is recommended, since the strata corporation, which will assume responsibility for the system, will not yet be in existence. It is necessary that the system be in place so when the first strata lot is sold, the owner is guaranteed connection to an operational sewage disposal system.
- If the system falls under the Health Authority jurisdiction, (combined design daily domestic sewage flow of less than 22,700 litres) a Certified Operator must perform operation and maintenance of the community system. If the system has a combined design daily domestic sewage flow of more than 22,700 litres, it falls under MOE jurisdiction. The Environmental Management Act / Municipal Sewage Regulation (B.C. Reg. 129/99) would apply.

## REQUIRED SITE INFORMATION & SITE PREPARATION FOR ON-SITE SEWAGE DISPOSAL SYSTEMS

Each proposed lot in a subdivision, which will be serviced by on-site sewage disposal systems, must be supported with the following minimum information:

### SOIL TESTING AND EVALUATION

The following is to be prepared and submitted by a Professional Engineer (with soils experience), a Registered Onsite Wastewater Practitioner (with planner designation), a Geoscientist, or a BC Land Surveyor (with soils experience). In special circumstances, (i.e. very remote areas and/or small subdivisions) this requirement may be waived. An Environmental Health Officer will verify the information provided by conducting a site inspection whenever possible.

#### Percolation Test Results

A **minimum** of two percolation test holes are required in each proposed discharge area. For example, if absorption fields are proposed, two test holes are required in the proposed primary area and two in the proposed reserve area. If a lagoon is proposed, two test holes are required in the proposed lagoon area. The "Percolation Test Procedure", in this Subdivision handout (Appendix C), is to be followed. All percolation test results are to be submitted to the Environmental Health Officer for review.

**All test holes are to be numbered, flagged with bright flagging tape,**

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**and left open for inspection.** It is strongly recommended that the holes be protected in a manner that prevents the entry of people and animals. If percolation test results for a proposed discharge area are not consistent, additional tests should be done at different locations.

### **Soil Evaluation (Observation Holes)**

A **minimum** of two observation holes are required in each of the proposed discharge areas. For example, if absorption fields are proposed, two observation holes are required in the proposed primary area and two in the proposed reserve area. If a lagoon is proposed, a minimum of two observation holes are required in the proposed lagoon area.

Observation holes must be dug at each end of the proposed discharge area, to a minimum depth of 1.5 metres for a proposed absorption field, or to a minimum depth of 3.0 metres if a lagoon is proposed. The excavated material is to be left undisturbed beside the observation hole as this material will be evaluated during the on-site inspection. All observation holes are to be flagged, uniquely identified and covered to protect wildlife, domestic animals and people from falling into the holes. If variable soil conditions are encountered, additional observation holes should be dug.

**Note:** *Excavations must meet the requirements of the Workers Compensation Act - Occupational Health and Safety Regulation.*

The following information, for each observation hole, is to be submitted to the Environmental Health Officer:

- A description of the soil profile, including the soil texture, soil structure, consistency and colour, in accordance with the established methods identified in the *BC Sewerage System Standard Practice Manual*.
- Depth to the water table, restrictive layer, expected seasonal high water table.
- Depth of mottling and gleying.
- Depth of root systems.

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## LOT PLANS

Accurate, scaled plans of each proposed lot are to be submitted, which clearly indicate the following:

- The proposed property boundaries, area and dimensions,
- The location and size of the proposed discharge areas (absorption fields or lagoon),
- The accurate labeling and location of all percolation test holes and observation holes,
- The location of the proposed building envelope and driveway,
- The location of the proposed source of drinking water,
- Ground contours at 5 metre intervals and overall percent slope in the proposed discharge areas,
- The location of any creeks, rivers, lakes or other surface water within 30 metres of the proposed lot, and the mean annual high water mark of lakes and rivers. (If the natural boundary of a watercourse is not well defined, it should be determined by a BC Land Surveyor),
- The location of any existing wells, sewage disposal system(s), buildings, driveways, underground services on the proposed lot,
- The location of any existing wells, sewage disposal systems, buildings on adjoining properties within 30 metres of the proposed lot,
- Any excavations or other potential breakout points within 15 metres of the proposed discharge areas,
- Any areas encumbered by Registered Easements, right-of-ways, or Section 219 Covenants.

## SITE PREPARATION

Prior to the Environmental Health Officer performing a site inspection, the following minimum site preparation must be completed:

- All proposed lots must be clearly identified with appropriate signage (i.e. "Lot #1", "Lot #2", etc.),
- All proposed lot corners must be clearly staked and identified,
- All percolation and observation test holes must be exposed and clearly identified.

It is essential that the site layout is consistent with the submitted documentation.

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## ADDITIONAL INFORMATION/DOCUMENTATION

The information requested in the previous sections is the minimum information required to assess the suitability of a lot for on-site sewage disposal. Depending on the complexity and scale of a proposed subdivision, and the site constraints identified, an Environmental Health Officer may require additional site information or documentation so they can provide appropriate recommendations to the Approving Officer. For example, additional observation holes, percolation test holes, or a prolonged water table assessment may be required (at the discretion of the Environmental Health Officer) if submitted test results are variable or if there is uncertainty about the seasonal high water table. The Environmental Health Officer may also request a hydro geological assessment from a Professional Geoscientist or Hydro geologist when the drainage of surface water, permeability of the soil, density of the development or any other site constraint indicates further study is necessary.

## LINKS & RESOURCES

BC *Local Services Act* - Subdivision Regulations:

[http://www.qp.gov.bc.ca/statreg/reg/L/LocalServices/262\\_70.htm](http://www.qp.gov.bc.ca/statreg/reg/L/LocalServices/262_70.htm)

BC Sewerage System Regulation:

[http://www.qp.gov.bc.ca/statreg/reg/H/Health/326\\_2004.htm](http://www.qp.gov.bc.ca/statreg/reg/H/Health/326_2004.htm)

BC Sewerage System Standard Practice Manual:

<http://www2.gov.bc.ca/gov/content/environment/waste-management/sewage/onsite-sewage-systems/sewage-system-standard-practice-manual>

To obtain a listing of Professional Engineers and Geoscientists:

<http://www.apeg.bc.ca/members/sewageprolist.html>

To obtain a listing of Registered Onsite Wastewater Practitioners:

<http://owrp.asttbc.org/>

To obtain a listing of British Columbia Land Surveyors:

[http://www.abcls.ca/?page\\_id=26](http://www.abcls.ca/?page_id=26)

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## APPENDIX A

**Table 1: Horizontal Setback Requirements**

Distance to	From edge of discharge area (metres/feet)		From watertight septic tank (metres/feet)
	Lagoon	Absorption Field	
Property lines	15 m/ 50 ft.	3 m/ 10 ft.	1 m/ 3 ft.
Source of drinking water, well or water suction lines	30 m/ 100 ft.		15 m/ 50 ft.
Water lines (pressure)	3 m/ 10 ft.		1 m/ 3 ft.
Break-out point or down slope drain (including building perimeter drain)	15 m/ 50 ft.		1 m/ 3 ft.
Building non-dwelling (where there is no perimeter drain)	15 m/ 50 ft.	1.5 m/5 ft.	1 m/ 3 ft.
Building dwelling (where there is no perimeter drain)	60 m/ 200 ft.	3 m/10 ft.	1 m/ 3 ft.
Utility services	1.5 m/ 5 ft.		1 m/ 3 ft.
Surface Water	30 m/ 100 ft.		10 m/ 33 ft.

Author(s): PHP Management Team  
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## APPENDIX B

### Discharge Area Sizing For 4-Bedroom House (Max. 2530 ft.<sup>2</sup> or 235 m<sup>2</sup>), Type 1 System, 2- ft. (0.6 m) Wide Trenches, 6- ft. (1.8 m) Spacing On-Centre, Slopes < 5%

Hydraulic Loading Rate (litres/m <sup>2</sup> /day)	Total Length of Trenches (m)	Layout (#of lines by length in m)	Min. Area for 2 Fields (m <sup>2</sup> )	Min. Area for 2 Fields + 10% (m <sup>2</sup> )
39	73	3 x 24.2	232	256
34	83	4 x 21	277	305
29	98	4 x 24.5	323	356
25	113	5 x 22.7	381	419
20	142	6 x 23.6	481	530
15	189	6 x 31.5	643	707
10	283	10 x 28.3	985	1083

More area is required to install trenches on a slope because the installation must follow the natural contours of the land. Developers will be required to allow for larger discharge areas and protect these area(s) by covenant if the lots are small or the area suitable for effluent discharge is limited.

**For slopes of 5% and greater:** Add 1% for each percent of slope. This is in addition to the 10% added in the initial calculation of basic field size. For example, for a 15 percent slope, add 15 percent to the size given in the last column in the table above.

**Example:** Hydraulic Loading Rate of 25 litres/m<sup>2</sup>/day and a slope of 12%.

It can be determined from the table above that for a Hydraulic Loading Rate of 25 litres/m<sup>2</sup>/day the minimum area required for 2 fields is 419 m<sup>2</sup>. Since the slope is 12% an additional increase of 12% to the area is needed, giving a total of 469m<sup>2</sup>.

**Note:** The sizes given in the table above are calculated using a particular configuration of field lines. The calculation can be done using different configurations and the end result will differ slightly. The discharge area sizing table above is a guideline for *typically* required discharge areas.

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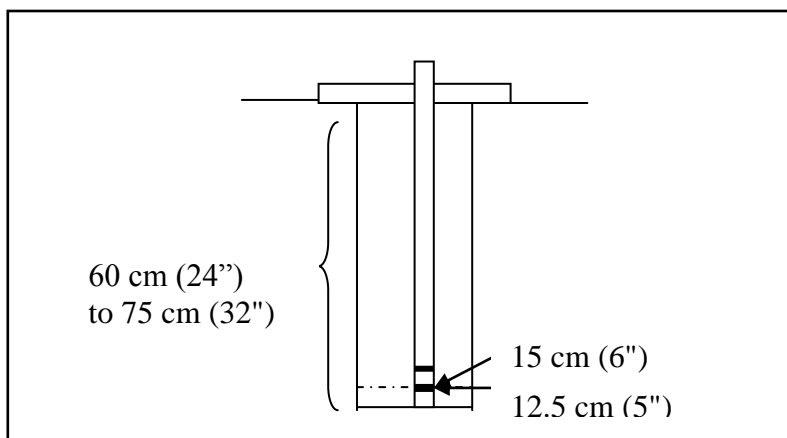
## APPENDIX C

### Percolation Test Procedure

The primary and reserve areas must both be tested. Two holes are required on each disposal area.

1. Dig a hole 30 cm (1 foot) square to the proposed depth of the absorption field, usually about 60 cm (24 inches) to 75 cm (32 inches) deep.
2. Remove any smeared soil from the sides of the holes with a rake or shovel.
3. Pre-soak the test holes by keeping the holes filled with water for a minimum of 4 hours. *If clay soils are present, keep test holes filled overnight.*
4. Place a stick with markings (e.g. nails) at 12.5 cm (5 inches) and 15cm (6 inches) from the bottom. Place the stick in the test holes.
5. Allow the water to drain within 12.5 cm (5 inches) of the bottom of the test holes, then refill the hole to a level above the 15 cm (6 inch) mark.
6. Prepare to time the rate of water level drop in the hole. When the water level drops to the 15 cm (6 inch) mark, commence timing. Stop timing when the 12.5 cm (5 inch) mark is reached. Record the time in minutes per 2.5 cm (inch).
7. Repeat steps 5 and 6 until the last two rates do not vary by more than 2 minutes per 2.54 cm.
8. Determine the percolation rates by averaging the slowest rate for each of the holes.

*Do not continue the timing if 120 minutes per 2.5 cm (1 inch) has been reached.*



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*Note: Complete one Percolation Test Results form for each lot*

**Proposed Lot #** \_\_\_\_\_

**Percolation Test Results – Primary Area**

Test Hole #1	Test Hole #2	Soil Test Performed by:
1st timing _____ min/inch	1st timing _____ min/inch	NAME: _____
2nd timing _____ min/inch	2nd timing _____ min/inch	ADDRESS: _____
3rd timing _____ min/inch	3rd timing _____ min/inch	TELEPHONE: _____
4th timing _____ min/inch	4th timing _____ min/inch	DATE: _____
		SIGNATURE: _____
Average of Slowest Rate From Each Test Hole is _____ min/inch		

**Percolation Test Results - Reserve Area**

Test Hole #1	Test Hole #2	Soil Test Performed by:
1st timing _____ min/inch	1st timing _____ min/inch	NAME: _____
2nd timing _____ min/inch	2nd timing _____ min/inch	ADDRESS: _____
3rd timing _____ min/inch	3rd timing _____ min/inch	TELEPHONE: _____
4th timing _____ min/inch	4th timing _____ min/inch	DATE: _____
		SIGNATURE: _____
Average of Slowest Rate From Each Test Hole is _____ min/inch		

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