Specific to the Lakelse Lake/Jackpine Flats area, the LWMP (February 2009) recommended the creation of a Septic System Management Program to ensure all tanks and disposal fields are properly maintained. The RDKS continued to move forward with the Lakelse Lake/Jackpine Flats Septic System Management Program components this spring.

Components of the Septic System Management Program include:

- **Education Program**
- **Inspection/Clean-out Program**
- **Water Quality Program**

An education package is included with this update, and Northern Health will present a “Septic Savvy” information session later this summer.

**Working Group**

The RDKS has solicited representatives from local community associations and advisory groups who are now actively engaged in a working group. Members include those from the following associations as well as Northern Health:

- Lakelse Lake Watershed Society
- Jack Pine Flats Community Association
- Lakelse Lake Planning Advisory Commission
- Lakelse Lake Community Association

To date, three meetings have taken place in which conceptual plans for a Septic System Management Program were discussed. Input to such a program and its components have been gathered from the working group members. Options for a Program are being examined and the working group will make recommendations to the RDKS Board for consideration.

The Working Group agendas, meeting minutes, educational information and future information produced as a result of the working group are, and will be available on the website: [http://rdks.bc.ca/content/lakelse-lake-jackpine-flats-septic-tank-management-program](http://rdks.bc.ca/content/lakelse-lake-jackpine-flats-septic-tank-management-program).

For more information please contact Linda Zurkirchen at Cambria Gordon Ltd. at 250-638-0498 or visit [www.rdks.bc.ca](http://www.rdks.bc.ca)
Are you the owner of a septic system?
If so, you are in good company. There are 27,000 septic systems in the Capital Region, and that number increases annually by more than 500 new installations.

Your septic system can provide effective, long-term wastewater treatment, right in your own backyard. If your system is working properly, it is an environmentally friendly and economically sound treatment option.

Out of sight, out of mind?
Unfortunately septic systems are out of sight. Many homeowners don’t realize that there may be a problem until their system is already failing. It is estimated that up to 20% of septic systems in our region are malfunctioning. The most common cause of failure is lack of maintenance.

Proper maintenance has a significant impact on how well your system works and how long it lasts. Your home is one of your most important investments. Taking care of your septic system is like an insurance policy on that investment.

How does my septic system work?
Wastewater from your sinks, toilets and laundry drains through a pipe from your home into your septic tank. Your septic tank is designed to hold the wastewater long enough to allow solids to settle at the bottom and oil and grease to float to the top.

Natural bacteria in the tank start to breaking down the solids; however, eventually the solids build up and must be pumped out. Regular pumping will reduce the amount of solids entering your drainfield and ensure proper drainage and treatment.

The partially treated wastewater from your tank flows through an outlet into a distribution box. The box evenly distributes the discharged wastewater into a network of pipes underneath the drainfield. The wastewater begins to percolate into the soil through small holes in the pipes. Natural filtration and microorganisms in the soil remove any remaining harmful particles in the wastewater. The treated and cleansed wastewater passes into the groundwater and returns to the water cycle.
Why should I care for my septic system?
There are three main reasons for maintaining your septic system:

Save money. A failing septic system can be expensive to repair or replace. You can protect yourself against costly surprises through regular preventative actions like inspections and pump-outs of your system and by learning the do’s and don’ts of septic care.

Protect the health of your family. A failing septic system can release inadequately treated household wastewater and offensive odours, often right in your backyard. Human wastewater contains disease causing organisms and can pose health risks to your family and your neighbours.

Protect water quality. We all depend on clean water. A septic system uses the environment to treat wastewater. A failing system releases untreated or partially treated wastewater that can pollute our creeks, lakes, shorelines and groundwater. Failing systems contribute to shellfish bed closures and contaminate drinking water supplies.

How do I care for my septic system?
Here are ten steps you can take to maintain your system:
1. Locate your septic tank and drain field. You will be prepared if there is a problem.
2. Check the operation of your system annually. Look for signs for failure (see Signs of Failure).
3. Have your septic tank pumped regularly. Health authorities recommend pumping every two to five years. Combine the pump-out with a professional inspection.
4. If you have a package treatment plant, set up a regular annual maintenance contract.
5. Make sure your system has an effluent filter to reduce the amounts of solids entering your drain field.
6. Keep a running maintenance record.
7. Reduce your water consumption. Too much water use will flush solids into your drain field rather than have them settle in the tank.
8. Use environmentally friendly cleaning products. Some chemicals can upset the proper balance of bacteria needed to provide primary treatment inside your tank.
9. Recycle or properly dispose of hazardous products. Do not pour them down the drain or put them in the garbage.
10. Protect your drain field by leaving it as undisturbed as possible. Do not drive or park on it. Landscape with grass rather than plants with roots that can damage your system.

Signs of Septic System Failure
It is time to call a professional if you notice any of the following:
- Slowly draining sinks and toilets
- Gurgling sounds in the plumbing
- Unpleasant odours around your property
- Patches of lush growth over the drainfield
- Soggy or wet ground over the drainfield
- Sewage surfacing

Maintenance Regulations
The “Sewerage System Regulation Act” requires an “Authorized Person” to install, repair or maintain a septic system. Authorized Persons are qualified registered practitioners or professionals who meet the requirements under the Act. To find a registered practitioner in your area, contact:

Applied Science Technologists & Technicians of BC - Onsite Wastewater Registration Program
Visit owrp.asttbc.org or call 604.585.2788 ext. 236

To find a professional in your area contact:

Association of Professional Engineers and Geoscientists of British Columbia
Visit www.apeg.bc.ca/members/sewerageprolist.html or call 1.888.430.8035
The Do’s of Septic Care

- Consider attending a free 2 hour CRD Septic Savvy Workshop (see CRD contact information).
- Learn and record the location of your septic system, including tank and dispersal area.
- Have an AP* develop a maintenance plan (see contact information).
- Allow easy access to the system for monitoring and maintenance. Keep a record of pumping, inspections and other maintenance.
- Install an effluent filter if you don’t already have one. Special units are available for retrofitting to an existing tank. Solids will be kept out of your dispersal system, and your system will last longer.
- Have a maintenance plan / service contract for package treatment plants, and have an AP* attend to repairs promptly.
- Arrange for an inspection the next time you have your system pumped. An AP* should inspect the entire system: tank, tees or baffles, effluent filter, distribution box, dispersal system and pump chamber (if applicable).
- Arrange for another inspection in two to five years and a pump-out according to existing bylaws or at a frequency appropriate to your own particular circumstances, as determined by the inspector.
- Practice water conservation. Limit the number of high water use activities done consecutively or at the same time. For example, spread out laundry washings over the week and avoid running the dishwasher at the same time. Also, use water sparingly when watering over or near your dispersal system.
- Use alternatives to toxic cleaners and chemicals around your home. Harmful chemicals can kill the beneficial bacteria in your septic tank, causing you to have your tank pumped more often. They can also be carried to your dispersal system and into watercourses or drinking wells.
- Be aware that human wastes from people on medication (e.g. antibiotics) can affect the performance of your septic system and may require more frequent pumping of your tank. Leftover medications can damage or plug the dispersal system pipes. Grass is ideal.

The Don’ts of Septic Care

- Don’t allow toxic cleaners or chemicals to be flushed into your septic system.
- Don’t allow potential poisons to get into your dispersal system, including paint, solvents, antifreeze, fuels, oils, pesticides or herbicides. They upset the beneficial bacteria in your system and can leach into groundwater and cause serious health or environmental concerns. Use environmentally friendly alternatives where possible.
- Don’t discharge water softerner backwash into a septic system.
- Don’t use septic tank “starters” or similar products. They can do more harm than good. Allow the natural bacteria to work on their own.
- Don’t use granular drain cleaners. Only a small amount can kill all of the beneficial bacteria in your system, leading to rapid build-up of solids or dispersal system clogs.
- Don’t use a carbonator to dispose of food waste and other solids. Your tank will fill up prematurely and require more frequent pumping.
- Don’t park, drive or put heavy objects or machinery over your dispersal system. This can compact the soil, crush pipes and keep air from getting into the ground — all of which can lead to system failure.
- Don’t plant trees or shrubs in the dispersal system area. Their roots can damage or plug the dispersal system pipes. Grass is ideal.
- Don’t allow roof drains, perimeter drains or surface water runoff from driveways and slopes to discharge into your tank or onto the dispersal system. Excessive water can flood the system and cause premature failure.
- Don’t use your toilet or drains as a trash can. Cooking grease, fats, cigarette butts, disposable diapers, sanitary napkins, hair, plastics, lint, metal, rubber, coffee grounds, tea leaves and cat litter should all be kept out of your septic system.
- Don’t pour hazardous waste down the drain. Take hazardous wastes to hazardous waste disposal depots. Contact the CRD Hotline (see contact information) for more information.

Care and Maintenance

Neglect or abuse of your septic system can cause it to fail. A failed system can:

- Cause a serious health threat to your family, neighbours and pets
- Pollute ditches, streams, lakes, the ocean or groundwater
- Be very expensive and difficult to repair

Signs of a failing septic system:

- Sewage surfacing over the dispersal system (especially after a heavy rainfall)
- Lush, green growth or soggy areas over the dispersal area
- Slow or backed up drains, toilets or sinks
- Sewage odours around the property

Common causes of septic system failure are:

- Lack of proper maintenance of the septic tank (or package treatment plant)
- Excessive water intrusion into the drainfield area
- Overloading or abuse of the system with solids or chemicals
How Septic Systems Work

**Size and Dimensions:**
The average septic tank requires a space about 10 ft. x 10 ft. The disposal (or drain) field should be 30 ft. x 50 ft. or larger, with an additional area of similar size held in reserve in case of drainfield failure. The drainfield must have 4 ft. of good native soil from the surface to the water table or hardpan and a minimum of 2 ft. vertical separation from trench bottom to the water table or impervious material such as hardpan.

**Recommended Septic Tank Capacity:**
- 1-2 bedroom house: 750 gallons
- 3 bedroom house: 1000 gallons
- 4 bedroom house: 1200 gallons

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**Map your Home**
Plot the position of your septic system in relation to your site & home for quick reference.

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**A Guide for Homeowners**
Your simple step-by-step guide to septic system maintenance and trouble-shooting.

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A Conventional Gravity Flow Sewage Disposal System

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There are many types of septic systems used around the province. Depending on location and soil condition, homeowners may use treatment plants, sand filters, pumps or siphons. The treatment principals are generally the same in all systems.

In conventional systems, waste water from sinks, tubs and toilets flush out of the house into a tank that separates and stores the solids. Bacteria help to break down some of the heavier sludge and floating scum, but the rest accumulates in the tank until it is pumped out.

The partially treated waste water (or effluent) flows from the tank into a distribution box that evenly divides the discharge into a network of pipes that are buried in gravel-filled trenches in the drainfield. Small holes in each pipe allow waste water to seep through the gravel, then into the soil. As effluent trickles through the soil, any remaining particles are removed by natural filtration and bacterial action. When waste water finally reaches the water table, it has been treated and cleansed.

If waste water doesn’t get the full treatment contaminants can leach into the ground water supplies our wells or drain directly into lakes, streams - or our own backyard!
ONGOING Care & Maintenance

Pure water is important to the quality of life we enjoy in British Columbia. How we dispose of waste water once we’ve used it is crucial to the health of our families and our communities.

In rural areas, individual sewage disposal (or septic) systems use natural treatment and filtration to clean waste water before it is dispersed underground.

When septic systems work properly, they are efficient, inexpensive to maintain and environmentally friendly; when they fail, they cause odours, water pollution and major expense.

By properly maintaining sewage disposal systems, homeowners play a significant role in protecting our health and natural resources.

WARNING SIGNS
- slow or backed up drains
- patches of lush growth over the drainfield
- unpleasant odours around the yard
- sewage surfacing on lawns or in ditches

TYPICAL SEPTIC TANK INSTALLATION

The key to a healthy septic system is to protect the tank and drainfield from becoming clogged with solids. This means having the tank pumped regularly, conserving water and keeping harmful material out of the system.

A plugged tank or disposal field can cause sewage to back up into the house or seep into the environment. This can present a health hazard and be very expensive to repair or replace. It is important to watch for signs that your system may be failing.

Do’s

- Take hazardous wastes to approved disposal centres.
- Plant grass on your drainfield rather than trees or shrubs. Water sparingly.
- Divert roof, patio and driveway runoff away from the drainfield. Keep sump pumps, hillside runoff and foundation drains away from the system as well.
- Protect the reserve drainfield area.
- Ensure that your system is large enough for your needs. Garburators put extra pressure on the system. So do additional bedrooms or suites.
- Contact your local public health agency for permits for repairs, improvements, installations and further information.

Don’ts

- Don’t put non-degradables down sinks or toilets. No cigarettes, diapers, hair, grease, cat litter, coffee grounds, etc.
- Don’t use commercial septic tank additives; they are unnecessary, expensive and may cause pollution.
- Don’t use excessive amounts of bleach or kitchen solvents.

- Don’t pour harmful chemicals down your drains: no paint, kerosene, solvents, antifreeze, gas, oil, herbicides or pesticides. These can leach into ground water and poison the environment.
- Don’t stress the system with multiple laundry loads on one day.
- Don’t discharge water softening devices into the system.
- Don’t park or drive on your drainfield. Outbuildings, patios or pools can compact the soil, crush pipes and reduce aerobic action in the drainfield.
- Don’t saturate your drainfield with automatic sprinkling.
**Groundwater Quality**

**You Asked, We Answered!**

- Do you test your well water for quality?
- Do you know how long you have been using your well water?
- Do you know what’s in your well water?
- Are your neighbours also monitors and report it to your municipality?
- Are there any runoffs and leachate from your property?
- Have you ever experienced a water shortage in your area?
- Have you ever had a water problem?

**Well Water Quality & Stewards**

- **Affordability, Flexibility, Success!**
  - You know your water supply is safe and secure.
  - You have the freedom to choose your own drinking water.
  - Your water area provides access to the protection and management.

- **What you need to know about your well water quality.**
  - How to test your well water for quality.
  - How to maintain your well water system.
  - How to conserve your well water.

**Well Water Stewards**

- **How to test your well water for quality.**
  - Use a water quality test kit from your local hardware store.
  - Follow the instructions provided by the kit.

**Well Water Stewards**

- **Guidelines for Canadian Drinking Water Quality**
  - www.ec.gc.ca/wsh-ssj/wate-eva/drink-potas/guide/index_e.html

**Well Water Stewards**

- **Organizations:**
  - BC Ground Water Association
  - Canada Ground Water Association
  - Well Aware
  - Agriculture and Agri-Food Canada.
Well Protection and Ground Water Stewardship for Rural Areas

**Well Protection Steps...**

- **LOCATION, LOCATION, LOCATION**
  - Locate well on high ground to protect from flooding
  - Locate 30 m / 100 ft or more from potential contamination sources (this includes yours and your neighbors)

- **EXCELLENT CONSTRUCTION**
  - Constructed by a certified and provincially registered driller
  - Casing sealed and grouted to a minimum of 5m/15ft depth below ground is needed to prevent contaminants from entering the well

- **CHOOSE THE BEST WELL TYPE**
  - A drilled well into a confined aquifer at a minimum depth of 15 m / 50 ft is the safest source of water
  - A dug well is less safe and is more susceptible to surface contamination

- **GOOD MAINTENANCE**
  - Disinfect system 2 times per year with follow-up water quality testing
  - Have septic tank pumped every 2 to 3 years and ensure it is not failing
  - Practice water conservation on your property
  - Cap flowing wells so water does not flow to waste
  - Keep potential contaminants a safe distance away from well (a minimum 30 m / 100 ft from well head)

- **ABANDON PROPERLY**
  - Close and seal abandoned wells
  - Use a qualified and provincially registered well driller to complete the work

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**Hydrologic Cycle:**
The continuous movement of water from the earth's surface into the atmosphere through evaporation, then returning again as precipitation.

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**Risks to be aware of...**

- **Contaminants:** Contaminants can get into groundwater via surface runoff or percolation through the soil. Soil cleans and filters some contaminants but needs space and time to do so. To protect well water keep possible sources of contamination away from wells and surface water.

- **Runoff:** Contaminated Runoff

- **Confined Aquifer:** Saturated permeable soil (sand and gravel) capped by an impermeable layer

- **Unconfined Aquifer:** Saturated permeable soil (sand and gravel) not capped by an impermeable layer

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**Wetlands:**
This area acts as a catch basin for contaminants on surface and as a filter at the subsurface level.

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**Abandoned Well:**
Closed and sealed properly, this well will not allow contaminants to enter the aquifer. If it is not sealed properly it could allow contaminants to enter adjacent wells.

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**Shallow Well:**
Recovers water from unconfined aquifer with greater chance of contamination

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**Poorly Constructed and Located Shallow Well:**
Too close to sources of contamination; this well receives contaminated water and allows contaminants to enter the aquifer

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**Properly Constructed and Located Deep Well:**
Does not allow contaminants to enter the well and receives water from confined aquifer where water has greater protection from contamination

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**Confined Aquifer:**
Saturated permeable soil (sand and gravel) capped by an impermeable layer
Water Conservation

One key to a healthy septic system is to minimize water use in order to keep solids well settled on the bottom of the tank. Septic Systems are designed to hold wastewater long enough to allow solids to settle to the bottom forming a sludge layer and oil and grease to float to the top forming a scum layer. This process of settling and separating achieves primary treatment.

If too much water is flowing into the septic tank, wastewater is pushed out into the drainfield before the settling and separating process has time to occur. The solids will be pushed out into the drainfield and can cause clogged pipes and clogged soil which is expensive to fix. In addition – older septic systems were designed when people used less water. This means your septic system may be under capacity compared to today’s standards. If your septic system is older, water conservation is especially important for you.

Tips for conserving water

**Showers**
- Reduce your shower time. If you shorten your shower time to 5 minutes or less, you can save up to 40 litres of water each time you shower.
- Replace your showerhead. Older models use 18 to 30 litres of water per minute while water efficient models use only 9.5 L or less per minute.
- Recycle unused water. While waiting for hot water to flow when preparing for a shower, catch the cool water in a bucket or water can. Later it could be used for your plants, pets or cleaning.

**Toilets**
- Reduce the number of times you flush your toilet with multiple uses before flushing.
- Replace your old toilet with a 6L flush model. Older models can use as much as 13 to 26 litres of water per flush.
- If you are unable to replace your water guzzling toilet, retrofit your toilet with toilet displacement devices. You can fill plastic bottles with water or pebbles and place one to three of such bottles in a toilet tank (make sure they do not interrupt the flushing mechanisms or flow of the water). This will reduce the amount of water used per flush. Caution: Do not use a brick as this will disintegrate over time, causing serious and expensive problems in the plumbing.
- Do not use the toilet as a garbage can. Tissues and other items are often flushed away instead of going into other appropriate disposal containers.
Leaking Toilets

High volume water leaks often come from toilets. They are hard to detect and are usually caused by worn or misaligned parts. A toilet that continues to run after flushing could be wasting 20-40 litres per hour – enough water to fill a swimming pool in a year. Leaks can cost you up to $240 per year.

Finding a toilet leak

To check for a toilet leak, use a dye tablet or food colouring. Carefully remove the toilet tank lid. Place a dye tablet or some food colouring in the tank. Wait about fifteen minutes without flushing. After fifteen minutes check the water in your toilet bowl. If the water is coloured, you’ve got a leak. Toilet repairs may require the assistance of a plumber.

Faucets

- Do not let the water run while brushing your teeth, you can save up to 22 litres of water.
- Do not run the faucet while washing your face or shaving; instead fill the basin with water.
- Retrofit all household faucets with water saving aerators or consider replacing with water efficient models. Aerators are inexpensive items that can be found at most hardware stores.

Dishwashing

- Scrape dishes instead of rinsing them under running water.
- Compost kitchen wastes (organic matter) instead of using a garburator. Garburators consume hundreds of litres of water each week and increase the pumping frequency for septic tanks.
- When washing dishes by hand, do not wash or rinse with running water. Use tubs or plug the sink.
- Operate automatic dishwashers at full capacity and/or set the water level for the size of your load.

Food Preparation

- Rinse fruit and vegetables in a pan instead of running water continuously and use the water for indoor and outdoor plant watering.
- Keep a bottle of drinking water in the refrigerator instead of running the tap for cold water.
- Plan ahead so that frozen food doesn’t need to be thawed under running water or fill a bowl with cold water to thaw the food.
- Use a small amount of water and a lid on a pot when cooking.

Laundry & Household Cleaning

- Operate washing machines at full capacity and use the water saving features.
- Buying a new washing machine? Consider purchasing a water-efficient washing machine; they use up to 40% less water and 60% less energy than top-loading machines.
- For regular household cleaning use a pail or bucket rather than running water.
- Partially fill the sink or a container when cleaning the kitchen or rinsing cloths.
Alternative Cleaning Products
Some cleaning products can be harmful to your septic system. Septic systems are biological systems for the treatment of wastewater; the tank contains bacteria that slowly but surely digest the sludge. These bacteria are sensitive and can easily be upset by chemical products. The soil in the drainfield contains microorganisms which are also sensitive to harmful chemicals and these chemicals can pass through the soil polluting our ground and surface water. The best approach to keeping a septic system healthy and protecting our environment is to take care what goes down the drain, and not neglect periodic pumping and inspection of the system.

Recipes:
**All purpose cleaners:**
- Dissolve 4 tablespoons baking soda in 1 litre warm water. Add lemon juice to cut grease.
- Mix ½ cup vinegar and 1 – 4 cups of warm water.

**Kitchen cleaner:**
- Mix white vinegar with ¼ tsp of dish soap in a spray bottle.

**Oven cleaner:**
- Mix equal parts baking soda and salt. Add enough water to produce a paste; apply and scrub with a scouring pad.

**Bleach alternative:**
- Mix ½ cup Borax with 4 litres of hot water.

**Drain Cleaner:**
- Pour ½ cup baking soda down the drain. Follow with ½ cup white vinegar. Cover and let sit for 15 minutes. Flush with 2 litres of boiling water.
- Pour a kettle of boiling water down the drain (not your toilet – it may crack) weekly to melt grease that may be building up.

**Scouring Powders:**
- Baking soda and scouring pad.
- Equal parts vinegar and salt.

**Toilet bowl cleaners:**
- Make a paste of Borax and lemon juice – let stand and then scrub.
- Sprinkle a few tablespoons of baking soda and scrub with a brush. Add a few drops of lemon for freshness.

**Tub / Tile Cleaner:**
- Mix ¼ cup baking soda and ½ cup white vinegar.

**Hand Cleaner:**
- To get paint or grease off your hands rub with baby oil, wipe dry and wash.

**Laundry detergent:**
- Use 1 cup pure soap flakes or pure soap powder and 3 tbsp washing soda.

Ingredients to keep on hand:
- Baking soda
- Borax
- Vinegar
- Baby oil
- Pure soap flakes
- Phosphate free dish soap
- Salt
- Lemon juice
- Washing soda