



Summer Village of Norris Beach

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Local Collection System Information Sheets

In response to requests for additional information regarding the installation of new tanks and pumps for the new local wastewater system, we have prepared a series of information sheets for your use.

The information sheets are attached and include:

- Low Pressure System Highlights
- Pump Operation and Maintenance – Grinder Pumps
- Tank Winterization and Freezing Precautions – Grinder Pumps
- Holding Tank Guidelines for New Installations

As more information becomes available, we will publish new information sheets.

The cost details are still in the general estimate stage with respect to the pump and rail systems to be installed in your tank later this year. Our best estimate for the pump and rail package (uninstalled) is \$3,500.

We are proceeding with the municipal utility bylaw and borrowing bylaw based on these estimates. As soon as that information becomes available, we will provide it to you.

The bylaws will be amended to reflect the additional information when it becomes available.

We are getting positive feedback from residents regarding the construction work so far.

Thank you for your patience as we work through this project.

Your Council,

Brian Keeler, Terry Cronin, Frank Dyck.



Summer Village Office
Low Pressure Wastewater System Information Sheet

Low Pressure System Highlights

The Summer Village of Norris Beach is installing a Low Pressure System for wastewater services in the Municipality. This system along with others in the Summer Villages of Ma-Me-O Beach, Crystal Springs, Poplar Bay and Grandview as well as areas of the County of Wetaskiwin will connect to the Regional System for transfer to the Mulhurst lagoon.

The wastewater will flow to the Westeros Pump Station. A large grinder pump located in the pump station will grind all of the material again and pump it along to the lagoon.

The process starts in your holding tank.

Wastewater, including solid wastes, collect in the holding tank. Solid materials are ground to a small size by the grinder pump; mixed into a slurry with the effluent; and, pumped from your tank to the sewage collection lines and then on to the pump station.

The pump is powered from your electrical panel. Power requirements and other pump specifications are set out in the *Pump Operation and Maintenance* information sheet.

The system design includes double check valves between the pump and the street which are normally closed except when the pump is pushing effluent out of the tank. One is in the quick pump connection and one in the service line just inside the tank.

Winterization and extended absence procedures are set out in the *Tank Winterization and Freezing Precautions* information sheet.

Local line maintenance includes checking the tanks, pumps, connections, valves and vents. The Summer Village will flush the main lines as required using isolation valves and cleaning ports designed into the system. Maintenance costs are expected to be very low.

The Summer Village will be carrying liability insurance for the lines and pumps they own. Property owners should check with their insurance company to ensure that they have a sewer backup endorsement on their policy. One local insurer advises that there is no difference in the cost of the endorsement associated with a low pressure system as compared to a holding tank.

Experience in other Summer Villages and similarly sized communities has been very positive for the low pressure systems. The engineering firm has incorporated best practices based on their experiences into your system. That, combined with the state of the art pump that has been selected is expected to give Norris Beach many years of quality service.



Summer Village Office
Low Pressure Wastewater System Information Sheet

Pump Operation and Maintenance
Grinder Pumps

Grinder Pump Specifications

MPE Engineering has specified the use of the Liberty pump system. This pump system was selected based on reliability and performance history. The pumping package includes the grinder pump, guiderail system, discharge piping, junction box, floats, lifting chain, valves and fittings. The required pump is a 2 HP single phase 208-230V, two stage Liberty L5GX-202A constructed of stainless steel and cast iron.

The guiderail system includes a quick pump disconnect assembly mounted to the tank floor complete with a stainless steel guiderail assembly and includes an integral check valve.

A pump float switch will be provided for pump on/off control. A high level alarm is required.

Electrical Connection Requirements

The pump switch will be plugged into a simplex weatherproof receptacle located close to the outside of the access riser and requires a single phase 208-230 Volt power supply. The high level float and alarm box requires a separate single phase 115-120 Volt power supply. A 20 amp breaker is needed for the service.

Please remember that when the power is off, the pump cannot run. You may want to restrict water usage during power outages.

The Summer Village will provide a short list of contractors who have been fully briefed on the requirements who you may contact to supply and install the electrical service and ensure that the design specifications are met.

Grinder Pump Maintenance and Care

The grinder pump selected has a reputation for reliability and good performance. If you follow a few simple rules your pump will continue to work well for many years to come. The only materials permitted to be discharged into the wastewater system are: human waste and toilet paper; greywater from showers, sinks, tubs and dishwashers; conventional food wastes as processed through an in-sink garbage disposal unit and laundry machine washing discharge.

Many items should **not** be allowed to enter toilets or drains. Prohibited items include:

“flushable” baby wipes	dental floss	gravel / fish tank gravel	socks, rags or cloth
feminine products	pantyhose	bones	paint or paint thinner
diapers	plastics / latex	glass	metal
condoms	grease or cooking oil	sand	cat litter
egg shells	seafood shells	grout	cleaning wipes

In addition, Schedule D and D-1 in the Wastewater Utility Bylaw #146 set out chemical, oil, flammable materials and other restrictions.

Please note that the cost of repair to the grinder pump caused by prohibited materials in the tank will be the responsibility of the property owner.

On-going in-tank maintenance activities include:

Inspection of the tank sludge and scum accumulation in the holding tank.

Inspection of the floats, pump and high level alarm box.



Summer Village Office
Low Pressure Wastewater System Information Sheet

Tank Winterization and Freezing Precautions
Grinder Pumps

Tank Specifications

MPE engineering has recommended the use of concrete tanks for all of the Summer Villages. Grinder pump tanks in Norris Beach require one compartment, one riser and a minimum capacity of 500 gallons.

Freezing Prevention Specifications

The following installation specifications are required under the MPE DBM and are intended to reduce the risk of freezing for **new tank** installations:

1. Tanks must be buried at a depth of at least 1.2m below the ground surface (measured to the top of the tank);
2. The access riser shall be insulated;
3. The access riser shall be fitted with an insulated disc;
4. The tank lid shall be insulated;
5. New pump chamber vaults shall be insulated with spray foam to a 1.8m depth; and,
6. Where pipe depths are less than 2.5m the pipe shall be insulated with a Styrofoam frost box.

Options for **existing tanks** that may provide additional protection and should be discussed with a certified installer and include the following.

1. access riser(s) shall be insulated;
2. access riser(s) shall be fitted with insulated discs;
3. excavation to 0.6 m above existing tank and installation of Styrofoam board insulation.
4. excavation around existing tanks and application of spray foam insulation on the outside of the tank.
5. installation of heat tracing on the outside of the tank.

Note: Traffic should not be allowed on the tank or on lines near the tank in the winter months.

Extended Winter Absence

The pump comes with a cold weather kit installed and may be left in the tank over the winter. The pump should not be run when there is ice in the tank.

Prior to leaving for the winter, owners may want to purge their tank by running clean water into the tank until the pump runs. This will leave the pump in a debris free condition over the period it is not in use.

Property owners who are leaving for the winter may also want to request that the cc valve between the main line and the tank be closed in the fall and re-opened in the spring.



Summer Village Office
Low Pressure Wastewater System Information Sheet

Holding Tank Guidelines
For New Installations

Norris Beach Grinder Pump System

MPE Engineering has provided specifications for holding tanks for the Norris Beach grinder system in their DBM 3C. This recommendation will apply to all new tanks installed in the Summer Village of Norris Beach.

The grinder system tank is recommended to be a concrete tank with a 500 gallon (909 liter) capacity. This size has been selected to provide a 24 hour emergency capacity for the typical 3 bedroom home.

The tank must have a riser from the tank to above the surface of the ground with a minimum diameter of 600 mm.

Tanks must:

1. be installed by a certified installer;
2. meet CAN and CSA requirements;
3. be water tight with sufficient structural strength to withstand lateral, shear, bearing, and buoyancy forces;
4. have an insulated watertight access riser with a minimum 600mm in diameter;
5. have a securable insulated lid;
6. be installed to meet the current setbacks as set out in the PSDS Standards of Practice;
7. be buried to a minimum depth of between 1.2m from the surface to the top of the tank;.
8. be accessible for inspection and maintenance; and
9. the inlet plumbing must be watertight and allow for natural ventilation back through the building vent stack.

Installation considerations

New tanks shall be installed to provide a minimum of 1.2 m of cover and the access riser shall be insulated.

Options for existing tanks including the addition of insulation and other modifications should be discussed with a certified installer. Please see the *Tank Winterization and Freezing Precautions* information sheet for more information.