Municipality of Southwest Middlesex

Wardsville Sewerage Project

User Manual

April, 2003

Your **Small Bore Sewers**™ Collection System

Your community has been serviced with a **Small Bore Sewers**™ (**SBS**™) sewage collection system. This system was chosen because of its cost effectiveness to replace the failed septic systems in the village. The collection system consists of four components on each property.

1. **Household Outlet** – 100mm (4inch) ABS pipe from face of the house to the clarifier tank.
2. **SBS™ Clarifier Tank** – Typically a 3600 litre two compartment high strength concrete tank. Larger commercial or institutional users may have a larger tank.
3. **Lateral** – Normally a 50mm (2 inch) HDPE plastic pipe from outlet of the Clarifier tank to the sewer main.
4. **Sewer Main** – A 75mm (3 inch) HDPE plastic pipe from your property to the old Main Street Sewer or the Main Pumping Station located adjacent to the old community tile bed.

The attached drawing shows the location of these components on your property.

For those properties that were on the old Longwoods Road sewer, two large 45,000 litre communal **SBS™ Clarifier Tanks** were installed at the downstream end of the old sewer line (North of the old tile bed).

SBS™ Clarifier Tank

The purpose of the **Clarifier Tank** is to remove any solids from your sewage prior to it entering the sewer line. This removal of the sewage allows the use of the smaller diameter sewer mains. The Clarifier Tank also helps to regulate the flow of sewage to the collection system and Sewage Treatment Plant (STP).

The Clarifier Tanks have three access hatches for cleaning and maintenance. The hatch closest to the house connection is at the finished grade and is secured with tamper proof nuts. This access hatch will be used for inspection of the clarifier and for routine pumping of the clarifier approximately every 7 years.

NOTE: The exposed access hatch should not be covered over with grass or other items (decks, swimming pools, garden sheds, etc.) There should be free access to this hatch and two buried hatches at all times. Contact Public works for As-Built drawings before doing any work in the area between your household connection and the sewer main line.

How can you help the operation of your community collection system?

Your clarifier Tank is an integral part of your communities sewage treatment system and should be treated accordingly. The following is a list of Do's and Don'ts that apply to any sewage collection system treatment plant. The best practice is not to dispose of anything, with the exception of toilet tissue and mild detergents, that hasn't first been digested.

Dispose of Solids Appropriately

- **Don't** put cigarette butts, paper towels, sanitary tampons, condoms, disposable diapers, kitty litter, coffee grounds, similar non-biodegradables or anything plastic down your drain or toilet. Dispose of them in your regular garbage.

- **Don't** put cooking oils and grease down the drain. They can clog the pipes in your house and the rest of the system.

- **Do** compost kitchen waste instead of using a garburator. Using an in-sink garburator can increase the solids in your Clarifier tank by 40-50%, increasing the pump out costs for everyone. **Please inform Public Works if you presently have a garburator installed so that solids accumulation in your tank can be monitored.**

Conserve Water

Wasting water not only increases the costs to run your treatment plant and pumping stations, which you are paying for in your user fees, but it also wastes a valuable resource.

- **Do** install water-saving toilets when upgrading your bathrooms, which use less than one-third as much water as conventional toilets.

- **Do** install water-saving showerheads and taps.

- **Do** reduce water waste (run clothes or dishwashers only with full loads).

- **Do** fix leaky faucets or toilets. A simple toilet float can hang up and result in over 8000 litres per day of wasted water.

Divert Other Water Wastes

- **Don't** hook-up your sump pump, floor drains, eaves troughs, etc. to your sewer outlet, as indicated in your sewer by-law.

Dispose of Chemicals and fuels at Approved Waste Sites

- **Don't** put oil, gasoline, paint, varnishes, paint thinners, solvents, photographic chemicals, weed or insect killers, etc. down a drain. They can poison your Clarifier Tank, the whole collection system and treatment plant and possibly the Thames River. These hazardous chemicals can be traced back to the individual Clarifier Tanks.

Operation and Safety

- **Don't** go down into the Clarifier Tank. Toxic gases are produced by the natural treatment processes in the tanks and can kill in minutes. Even just looking in the tank can be dangerous.

- **Do** call 287-2015 (Public Works) during normal business hours (Mon – Fri 7:00am – 4:30pm, or if it is after 4:30pm or on the weekend, call 287-2513 (Public Works Emergency Line), in case you suspect a problem with your system. However, do have a plumber make sure that the problem is not with your internal plumbing.

- **Don't** use septic tank additives. These products usually do not help and some may even be harmful to your system.

Your **Napier-Reid Extended Aeration** Treatment Plant

The effluent from your sewage collection system flows to an Extended Aeration Treatment Plant. This plant is composed of the following major components:

Aeration Basin

The effluent enters a large concrete basin that has air diffusers at the bottom to continually supply air to the tank. Present in the tank are microorganisms that use the air to live on while they consume the contaminants in the sewage. The level of contaminants in the sewage is measured by the BOD. The influent sewage BOD is around 140 mg/l. When the discharge leaves the plant, it is typically less than 10 mg/l.

Clarifier

As the sewage leaves the aeration basin, it goes into a clarifier, where the solids and microorganisms settle out. A chemical called alum is added to aid in the settling of the solids and to help remove phosphates.

Filter

The filter is a final polishing step, required to get the phosphates down to a very low level. The influent sewage phosphates of 5 mg/l are typically reduced to less than 1 mg/l in the plant discharge. Reduction in phosphates is important because excess phosphate in the river causes algae growth.

Post Aeration Tank

After leaving the filter the effluent is aerated again to ensure that there is sufficient oxygen to support marine life once it is discharged to the river.

UV Chamber

Just before being discharged, the effluent passes through a bank of Ultraviolet (UV) lights that kill any remaining bacteria, including E-coli. The effluent is then piped out to the Thames River.