

# Silverhawk Utilities Inc. Annual Newsletter

Volume 1, Summer 2008



Welcome to this edition of the Silverhawk Utilities annual newsletter. We have established this newsletter to inform our clients of what is happening at our treatment facility. We realize that water is a commodity that is in demand in today's world. Silverhawk Utilities believes that green technology and environmentally friendly products should be used to preserve this planet for future generations.

We all know how important it is to preserve water as the world is facing a shortage of this precious commodity. With the expansion of the Silverstar facility, Silverhawk Utilities will be installing a tertiary treatment system to irrigate lands on a plateau below the existing Silverstar treatment facility. In this way, the wastewater will be recycled and will beneficially be reused.

Silverhawk is also in the process of looking to incorporate solar panels into the design to minimize electrical usage and utilize energy saving solutions for operation of the treatment system. We hope your year is a successful one and we hope that this information will be useful to you.

## **PRIVACY LETTER: RESIDENTS ARE URGED TO REPLY**

A privacy letter will be sent out with this year's billing. If you Do NOT wish your information be released to Silver Star Mountain for advertising purposes for use by businesses in the community, please fill out all the appropriate information and your personal information will remain confidential.

Please remember to check the box on your privacy letter and included it with your cheque for this year's services.

## **SILVERSTAR WASTEWATER TREATMENT SYSTEM GETS A GREEN- LIGHT FOR A GREEN EXPANSION**

Waterworks Technologies Inc., a Canadian company with offices around the world, has been contracted to complete the expansion of the existing wastewater treatment system. Waterworks has extensive experience in the design and operations of water and wastewater systems throughout the world and have been in operation for over 20 years in the industry. Their experience and knowledge will be beneficial in the expansion of the Silverstar wastewater facility. Due to demand, the current system needs to be expanded as more people are occupying and residing in Silverstar Mountain and also to cater to new developments. All costs associated with expansion for new developments are borne by Silverhawk Utilities and the developer. Existing residents do not pay for any of the expansion costs.

Waterworks Technologies is also recycling the wastewater, treating it and bringing the effluent to a level that exceeds government regulations. The treated wastewater can be reused and recycled through various applications including irrigation.

The systems being installed provide high level tertiary treatment. The final effluent will be clear and have no suspended solids, bacteria, viruses or pathogens and is rated for "unrestricted public access" on the golf course lands.

While designing the system, Waterworks' engineering group will take into consideration that minimal power consumption is used to lower the carbon footprint on the environment as well as finding an alternative for disposal of the highly treated and reusable effluent.

Waterworks is looking into finding alternatives for power supply and operations of the system. An option that is very favourable to the design engineers at Waterworks will be incorporating solar panels into the structure of the plant thereby reducing energy demands on the electric system. Another potential is incorporating pressure exchangers on the lower end of the pipeline to generate power.

As sustainability is an important factor in the expansion of this system, Silverhawk Utilities and Waterworks Technologies will work closely to make sure that any carbon footprint on the ecological system in the area will be minimized and that the precious commodity of water will be used wisely and for environmentally positive purposes.

## **SPRAY IRRIGATION & FIRE PREVENTION**

With the addition of the ultra filtration system being installed during the expansion, the government standards for water for spray irrigation and snow making are allowed for "unrestricted public access."

Spray irrigation can help prevent forest fires. Spray irrigation of the golf course lands provides a band of well watered low fuel land that will be an effective fire break. The 5 km pipeline can be fitted with hydrants so fire fighters can access a water source to fight or prevent forest fires.

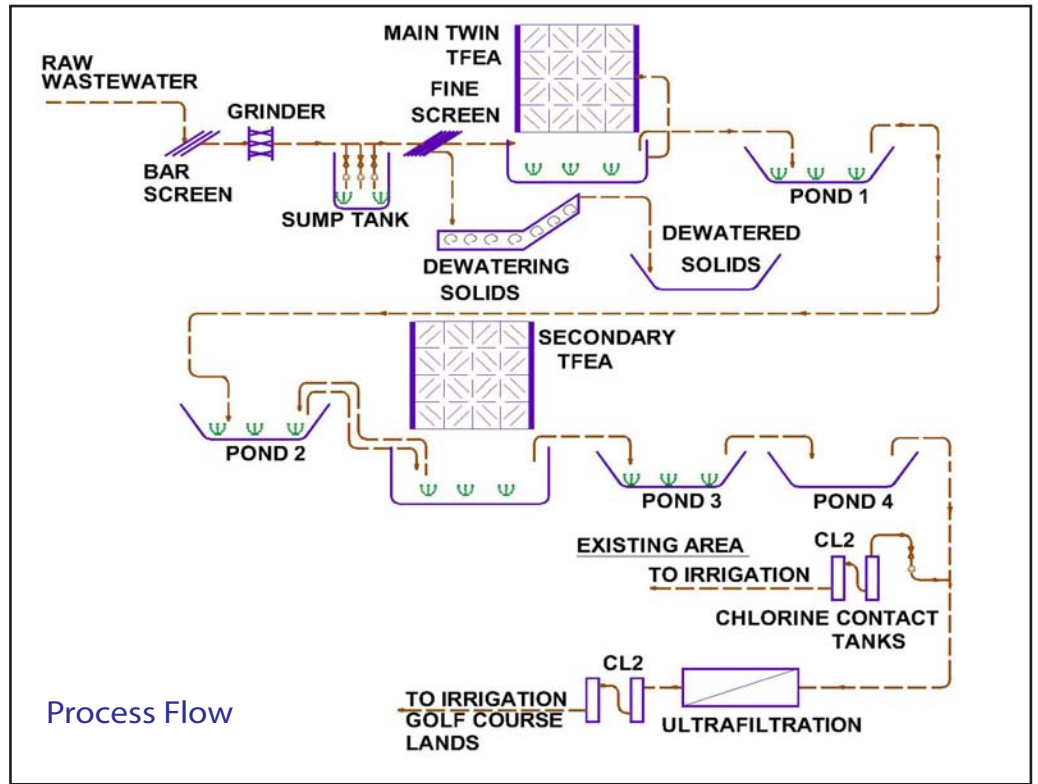
As many as 2,000 forest fires were burning in British Columbia last year alone, and many fire fighters have lost their lives trying to save the forest. With spray irrigation, the prevention of this disaster will be greatly reduced.

# WATERWORKS' TECHNOLOGY WILL MAKE SUPERIOR WATER

The raw wastewater enters the plant. It will pass a large solids bar screen and then through a new grinder that will reduce the size of large objects that get into the system. The disposal of items like feminine hygiene products, contraceptive items and other large objects is not permitted as this will damage the treatment plant. The wastewater then passes through a screen system to remove solids greater than a few millimeters in size. Screened solids are collected and dewatered and disposed of off the mountain. This is the primary system.

The technology that Waterworks will be using for the secondary system is called a TFEA system or Trickling Filter Extended Aeration System. The expansion will include an Ultra Filtration (UF) System that will take the treated effluent and filter it down to 0.1 micron.

The TFEA treatment system uses two advanced processes to treat the wastewater. The first process utilizes trickling filters to provide aerobic treatment of wastewater. Wastewater is pumped from a recirculation tank, dispersed over a media tower, and allowed to drain back into the recirculation tank. The wastewater is aerated as it flows through the media tower, which consists of a special media that guarantees the removal of contaminants from wastewater and reducing BOD (Biological Oxygen Demand) by 80 - 90%. The second stage of the TFEA process is the extended aeration and this removes the



majority of the remaining organic wastes.

At the end of this process chlorine disinfection is carried out to allow this water to be reused. The chlorine disinfection kills 99.9% of all bacteria, viruses and odour. The water at this point meets with BC government regulations for irrigation of lands with restricted public access which is the current irrigation area. The new ultrafiltration system is being provided to treat irrigation recycled wastewater for the

golf course lands. This water will exceed treatment levels for unrestricted public access as all bacteria, viruses and pathogens are removed. The nutrients in the water benefits ecological life.

The great advantages of this technology is that it produces superior quality water with minimal energy consumption and operation.



## DID YOU KNOW?

Singapore's water supply is a conventional source of highly treated water and wastewater. The project is called NEWater and it has been in existence since the late 1990s.

Due to huge demand for water and not wanting to rely on imported water from neighbouring countries, Singapore has developed its own water source through treated wastewater (sewage) that

has been purified using multi-membrane (via micro-filtration, ultrafiltration and reverse osmosis). Silverhawk will be using micro-filtration and ultrafiltration as part of the expansion.

NEWater also uses ultraviolet technologies, in addition to conventional water treatment processes. This isn't a new idea. Orange County, California has been doing this since 1976 and Virginia since 1978.

### TOURS ARE OFFERED



Silverhawk Utilities is conducting tours of the wastewater treatment facility. If you're interested in seeing how the technology is working to recycle the water and the environmentally friendly processes being used, please contact Jim at Silverhawk (250) 309-2827.

? If you have questions or concerns about your invoice or the expansion of the wastewater treatment system, you are invited to contact the Silverstar office at (250) 558-9877 or e-mail [administration@waterworks.ca](mailto:administration@waterworks.ca)