

Silverhawk Utilities Inc. Annual Newsletter



Volume 5, Summer 2012



TREATMENT PLANT UPGRADE

The upgrading of the Wastewater Treatment Plant at Silver Star Mountain has recently been started and is projected to be complete by the fall of 2012. This upgrade is required in order to meet more stringent environmental regulations that have recently been set out by the British Columbia Ministry of Environment (MOE), one of which includes the reduction of total nitrogen within the treated water. During the last few years, Silverhawk Utilities (SHU) has been conducting comprehensive sampling and laboratory testing to ensure that the plant upgrade will address all of the recent requirements of the MOE.

As a result, Silverhawk will be installing as part of the new upgrade a Membrane Bio Reactor (MBR). An MBR is a hybrid wastewater treatment technology that combines biological treatment by activated sludge, and physical treatment by membrane filtration. This type of treatment process is one of the optimal technologies available for treating wastewater. An advantage of the MBR is that micro-organisms are almost entirely removed and not just inactivated with a risk of reactivation. Suspended solids can be removed completely (down to less than 1 micron) and bacteria-free treated water produced. The elevated biomass concentration in the MBR process allows for very effective removal of particulate biodegradable materials at higher loading rates. With this new process design, the increased sludge retention times which usually exceed 15 days, ensure complete nitrification even in extremely cold weather.

It has become a proven superior form of treatment because of the following:

- Elimination of sedimentation tanks
- No sludge bulking problems
- High Mixed Liquor Suspended Solids (MLSS)
- Short Hydraulic Retention Time (HRT)
- Controllable Sludge Retention time (SRT)
- High BOD/COD and nutrient removal efficiency
- Compact space
- Less waste sludge volume
- Produces high quality recyclable treated water



Capital Upgrade Reimbursement Fund

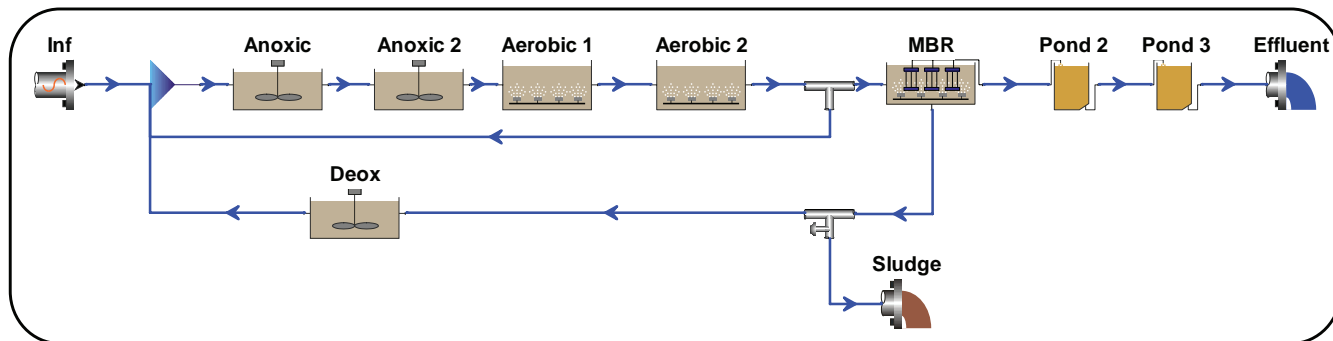
Silverhawk has budgeted in excess of \$800,000 for the latest treatment plant upgrading to achieve new regulations set forth by the Ministry of Environment. Silverhawk will finance the costs associated with this project over a three year period. The upgrading applies to all customers of Silverhawk Utilities as it is not an expansion for new development. It is an upgrading to meet

new stringent treatment requirements. The amount of the upgrading will be amortized over three years and each year a fixed amount for both Residential and Commercial customers will be invoiced to repay this universally required upgrading. The 2012 invoice will be sent to all customers during the Fall of this year.

TREATMENT PLANT UPGRADE

In May 2010, the British Columbia Ministry of the Environment (MOE) advised Silverhawk Utilities Inc that a total nitrogen (TN) concentration limit of 10 mg N/L will be imposed on the treated effluent discharged from the Silver Star Wastewater Treatment Plant (WWTP) to the exfiltration basin. In July 2011,

ing the output, MBR/MLE was chosen for the upgrade process. The proposed treatment is capable of meeting the new MOE requirements and treating the adjusted loading conditions as requested by the MOE. Based on this new design, the existing trickling filters will be



an upgrade option review was presented by a specialized engineering firm (AECOM) to the MOE that included 6 different options considered to meet the MOE effluent discharge requirements. In August 2011, the MOE requested additional model runs to evaluate the robustness of two of the recommended upgrade options (MLE/MBR Option and SBR Option) and finally after modeling two processes with specialized software and compar-

replaced with a nitrifying/denitrifying Modified Ludzack-Ettinger (MLE) activated sludge system. Having anoxic zones in MLE process will facilitate denitrification. To achieve high level solid-liquid separation a membrane technology referred to as a Membrane Biological Reactor (MBR) has been designed. A schematic drawing of the proposed MLE/MBR activated sludge Option is presented above.

SILVERHAWK CONTRACTS WATERWORKS TECHNOLOGIES

Waterworks Technologies Inc. will be undertaking the Treatment Plant Upgrading project. Waterworks is an EPC (Engineering Procurement Construction) company that has completed over 400 water and wastewater treatment projects since 1985. It has considerable experience in implementing treatment plants in remote locations and difficult environments. Waterworks also has an excellent track record in expediting projects. This is important as the construction season for exterior works at Silver Star is very short. Please find out more about Waterworks Technologies at www.waterworks.ca

2011/2012 Rates

As a result of Silverhawk striving to keep our rates for sewer equitable, the 2011/2012 rates are only increasing slightly. The increase for the 2011 Service Year is approximately 7% for the average user and is mostly due to the following factors:

- Increased sampling, testing and regulatory requirements.
- Requirement to hire a third party engineering company.
- Reduced flows resulting in less flow to average costs over.
- The effect of increased organic loading.
- The new requirements by the BC MOE to reduce nitrogen.

To mitigate increases, Silverhawk is deferring the 2011 depreciation expenses and any return on equity. The utility has been implementing cost efficiencies wherever possible and has also been deferring and absorbing other significant costs. A copy of our full Sewer Tariff which includes our current rates can be found at www.silverhawkutilities.com/rates

CONSTRUCTION ZONE

Please be aware that there is an active construction zone in the vicinity of the Treatment Plant. No traffic or unauthorized entry into this area is permitted. If you have questions please call (250) 558-9877.



Annual Flows Decreasing

During the past years, the total annual wastewater flows to the Silverhawk treatment plant have been declining in proportion to the increased pillow count on Silver Star Mountain. Reasons for the flow reductions include:

- Improvements to collection system to reduce infiltration
- Use of low flow toilets, taps and shower heads
- Silverhawk's program to reduce losses from leaking fixtures
- General public awareness of water conservation
- Lower occupancies during slower economic times

