

# Swift Current Wastewater Treatment Plant

*Protecting our  
Environment*



CITY OF  
SWIFT CURRENT



## *Introduction*



Every time you flush the toilet, take a shower or wash the dishes, you send wastewater down the drain to an underground network of pipes. These pipes, through a series of pumping lift stations, carry the wastewater to the wastewater treatment plant located on Ponderosa Trail. The raw sewage that arrives at the plant goes through an extensive treatment process to ensure that when it re-enters the Swift Current Creek, it is safe for people living downstream and for the environment. To ensure that this is achieved, numerous analyses of the treated effluent are performed everyday, along with extensive samples of the receiving waters every few months.

## *Plant Facts*

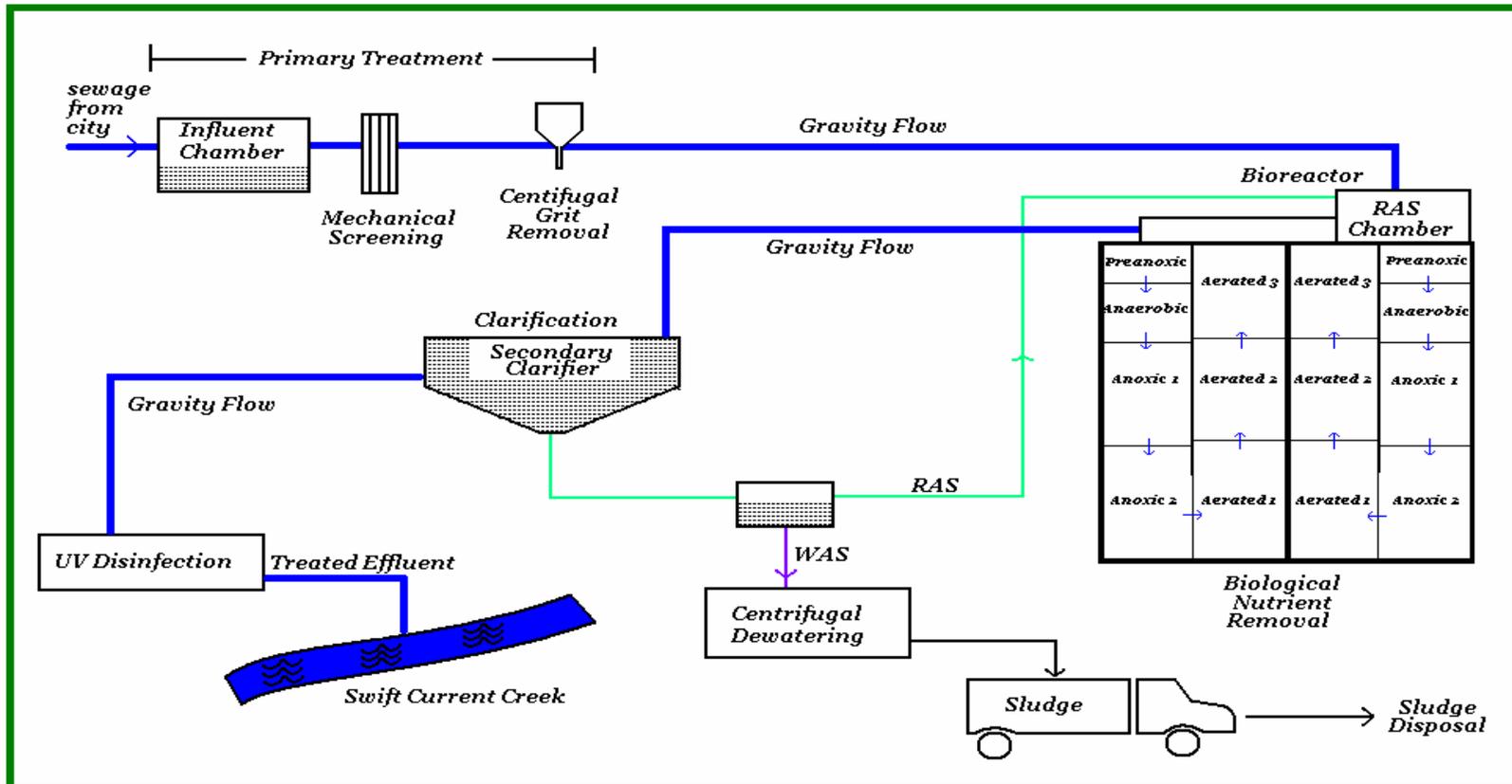
- 99.7% of material entering the Plant is water
- The Wastewater Treatment Plant treats 5 million litres daily...that's enough to fill 125 average size swimming pools
- Only small amounts of storm water make it to the plant through infiltration. Most storm water is carried to the Creek through storm water drains and not through the sanitary sewer system
- Biosolids, the remaining solids from the centrifuge, make excellent soil conditioners as they are high in nutrients.
- At an estimated cost of approximately 15 million dollars, the plant was constructed as a group effort of the municipal, provincial, and federal government.
- Operators are continually required to upgrade their knowledge of the treatment process and to work towards higher certification to meet increasing treatment standards.

## *Brief History*

The Wastewater Treatment Plant was constructed in 2006, ending a period of 27 years of Lagoon treatment and effluent irrigation alone. Up to this time, a series of four lagoons were used to accomplish a primary treatment on the effluent. Mass quantities of effluent were distributed via irrigation by land owners in the area. Due to growing population in the Swift Current area, and the rise in effluent discharge standards, construction of a biological nutrient removal (B.N.R.) wastewater plant was initiated in 2005. The plant now achieves complete secondary treatment of the incoming wastewater along with UV disinfection prior to discharge into the Swift Current Creek.



# The Treatment Process



## Primary Treatment

Raw sewage enters the plant flowing into the grit removal and screening building. Here the raw sewage passes through a mechanical screening system which removes most of the larger solids. The solids are then compressed and sent for disposal. From there, the water passes through the centrifugal grit removal system (the teacup) which removes the sand and other grit. From this building, the sewage gravity flows to the bioreactors.

## Secondary Treatment

In the bioreactors, the sewage is mixed with microorganisms which have been settled out in the secondary clarifiers. As the microorganisms grow and multiply, they feed on the nutrients in the effluent and break them down. The effluent now moves to the secondary clarifiers through gravity flow. These giant tanks allow any remaining solids, along with the microorganisms from the bioreactor, to settle to the bottom so they can be either returned to the bioreactors or sent to the centrifuge for dewatering. The clear effluent from the clarifiers now flows through a UV trench where UV light sterilizes the effluent before it can then be returned to the Swift Current Creek.

## Centrifuge

The wasted microorganisms and solids from the clarifiers, which are not returned to the bioreactors, are sent to the centrifuge where high speed rotation separates them from the liquid so that they can be disposed of more efficiently. The remaining water is then sent back to the screening and grit removal chamber where it undergoes treatment again.

## Commitment to Quality

The Wastewater Treatment Plant is a designated level 3 plant, which is the second highest level of certification. As such, all aspects of the Plant are closely monitored, twenty four hours a day, seven days a week, by highly trained plant operators. Numerous electronic controls, monitoring devices, and computers continuously analyze the treatment process to ensure the plant operates effectively. Additionally, an on site laboratory performs approximately 25000 analyses each year to ensure continuous quality control, and to record plants performance.



## The Future

Treatment standards are continuously improved, and the city of Swift Current is committed to serving its customers and protecting the environment. By remaining on the cutting edge of technology, the city can achieve these goals, keeping our water clean for future generations. As the City of Swift Current continues to grow, the option of expansion of the plant may be required. Therefore, the plant has been designed with space to expand to meet increasing wastewater demands. These expansions may include the production of more bioreactors and secondary clarifiers, and also the addition of primary clarifiers should the need arise.

### Plant tours

To book a tour, please call 778-2725. Tours take approximately 45 minutes to go through the entire treatment process

