

Soneera Water Canada partners with Town Of Unity

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Colin Field, Unity Director of Public Works and Infrastructure, observed that it is “quite an interesting venture.” Like everyone in the council chambers he was “excited about seeing the results.”

Councillor Ben Weber stated, “this is going to change not only Unity.” He noted there are similar places all over Saskatchewan and Alberta which could benefit from electroflocculation technology.

Carey Baker, Unity Director of Economic Development, added, “I look forward to achieving a new level of waste water treatment in our community.” He also believes that once the plant is running it will generate another type of tourism for Unity. He expects representatives from other municipalities will come to Unity to see the new system in action.

Dr. Robinson explained the electroflocculation process began with the development of smaller scale units. These smallest units were built to fit in the ammunition pouches of the Australian army and could clean 20,000 to 30,000 litres of water over time. To move to larger units, Dr. Robinson simply applied his theory to the new size. The system is simple, with only three settings. Dr. Robinson compared its operation to that of driving a car with an automatic transmission.

Dr. Robinson explained with confidence, “The bigger units work just like the theory says.” He qualified this by stating that the process will work only when following his design. There are strict standards with both the replaceable components – plates - used in the units and with the use of the controlling software.

The system relies on an electrolytic process to generate metal ions and gas micro bubbles as the method of removing pollutants rather than chemicals which can adversely affect the environment. Dr. Robinson touted other advantages of his technology. He stated the system can be remotely monitored; therefore,

it is less labour-intensive. As well, it is “virtually maintenance-free” with the only labour required to “replace the electrodes three to four times a year.”

Currently Unity uses a gravity-fed anaerobic/aerobic two-cell sewage lagoon process to treat waste water. The treated effluent from the two treatment cells flows into a storage cell and then discharges into Sink Lake. In early 2014 the town’s engineers reported that an update to the system needed to be considered.

The Town of Unity and the province entered into a parallel agreement which would see the town continue to operate the system under the condition that additional waste water treatment would be added by August 2017.

The addition of the new technology, including a building to house it, will take about five months to complete. The treatment plan will be fully operational once the WSA approves the system and issues a permit for its operation. The WSA must be satisfied with both the treatment capacity and quality of the system.

The additional treatment facility will be built just to the east of the present lagoon. It will consist of six chambers, enough to handle the waste water needs of a population of up to 3600. It is expandable - when needed in the future - to handle the waste water of up to a

population of 6000.

With the installation of the electroflocculation system the waste water in the first cell of the lagoon will be pumped into the continuous flow electroflocculation building, to be built upslope of the lagoon, before being released into the second cell. It is predicted over time the lagoon will become cleaner and in turn the storage cell and Sink Lake will also become cleaner as the newly treated outflow makes its way into the ecosystem.

The application of electroflocculation technology began in rural Australia. The first large-scale application was in a caravan park in Echuca, Victoria – just over 200 km north of Melbourne. Not only does the park cater to RVs, it also has a number

of cabins and permanent residents.

From Echuca the batch process was adopted in a number of locations in Australia. The first to use continuous flow electroflocculation process was the municipality of Bolivar, South Australia, an outer suburb of Adelaide.

Darrell Behan and Dr. Robinson devised a plan to expand the use of the technology beyond Australia. To gain a foothold in the North American and world markets, Soneera Water established an operating base in Phoenix, Ariz. in 2014. They demonstrated the viability of their process through a number

of trials, including at Surprise, Ariz., a suburb of Phoenix. The successful experience was as vital as the granting of a US patent for the continuous flow electroflocculation water treatment system. The process is patent pending in Canada.

Once the patent was granted in August 2015 the company was poised to jump into to the American market. However, the Town of Unity, having already begun its search for a replacement treatment system, was the first to seize the opportunity to enter into negotiations with them. As a result, the first North American large-scale application of the technology will be in Unity.

The search for the replacement process was headed by Kavi Pandoo, Unity Director of Finance. Several different treatment systems on the market around the world were researched and analyzed. The extensive search led to finding Dr. Robinson’s technology. This proactive and wide-ranging search allowed Unity to gain significant advantages, and eventually become the pilot site for Canada.

Presently the manufacturing base for Soneera Water is in the Phoenix area. The company established its Canadian office in Saskatoon last November, with a manager and support staff. Should a successful project in Unity generate sufficient interest and business to be economically viable it is likely that Saskatoon will be the beneficiary of spin-off activity. A company official stated, “Pursuing local manufacture will be high on our list of to-do’s as soon as we can gain critical mass to support the investment. In the interim we will look at the option of component subcontract by provincial firms.”

The electroflocculation technology can be used to do more than treat waste water. The same basic process can produce potable drinking water, treat mining effluent, recycle industrial grey water, cleaning food factory washdown water and treat water contaminated with cleaning oil and grease.

Mayor Maljan excited about improvements

“The Town of Unity is excited about the prospect of pioneering this technology in Saskatchewan. Communities such as Unity are tasked with the responsibility of considering a perpetual list of infrastructure projects to replace, or in this case, add to our municipal service assets. We do not have the capacity to complete all of our capital requirements without being innovative, financially prudent, and exceedingly diligent in our management of these projects. The Town of Unity looks forward to the development of this facility by Soneera [Water], and wishes to thank all of our residents for their understanding and support as we embark on this next phase of infrastructure improvement.”



Raw sewage being treated. Photo courtesy Soneera Water



Pre- and post-treatment water samples. Photo courtesy Soneera Water



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