



PIID Water Trustee's Report

April 2018

The water team has continued to be busy since my last report. Bi-weekly water testing has continued and both the Water Operators and the Water Select Committee have met to discuss water system business. This month we are welcoming two new members to the Water Operators team; Ming Huey Chang and Katie Steenman have agreed to undertake the training necessary to become water operators. This process involves 50 hours of water testing experience and passing a Water Operator certification program. I want to recognize the water operators who regularly test and inspect our system and sample our water to ensure continued quality. My thanks to Velvet Warrior, Philippa White, Mary Jordan, Lloyd Phillips, Maureen Crooks and Cam Russell.

Water Quality

Currently our water quality is excellent. Chlorine levels are acceptable, and no coliforms are present.

To see Piers Island Water Sampling Results and Annual Reports go the Piers Island website: www.piersisland.ca, choose the **PIID** tab, and click on **Water**

Maintenance Activities

- Annual flush of main water lines coordinated with North Saanich Municipality
- Preparation for the placing of back flow preventers

Water line flushing

The main water line flushing this year was accomplished by a team of eight volunteers including Bob and Maureen Crooks, Cam Russell, Philippa White, Mary Jordan, Katie Steenman, Lloyd Phillips and myself. We were split up into three teams, three golf carts with radios, and a variety of tools and valve keys. We followed a very specific procedure that has been written and revised over time, largely by the efforts of Maureen Crooks. Thank you, Maureen! Three hours later our water lines were sparkling clean for another year.

Select Committee

The *Water Select Committee* recently met to discuss a document describing some of the requirements for engineering and permits when proposing the installation of a new water tank (see Attachment 1). We also reviewed an order of magnitude quotation received from an organization providing EFI (engineer, furnish, install) quotations for water tank systems.

The committee also discussed some other issues pertaining to the water tank replacement including:

- Security (do we need to fence the tank?)
- Do we need two tanks?
- What type of tank is best for our application?
- Should increasing water pressure be a consideration for tank design?
- How large should the tank be to consider future needs?
- Do we need to modernize/update our chlorination system?
- Do we want to keep the old tank for firefighting water after the new tank is installed?

Providing the correct answers to these and other questions may encourage the *Water Select Committee* to seek the limited services of an engineering consultant. We are currently planning to approach three consulting firms; WSP, Opus International and Tony Queen Consulting. Our committee will clearly define the Terms of Reference

for the consultants and determine the best choice for Piers Island needs. The committee strongly feels that an expensive project with long-term implications needs careful decision making by qualified individuals.

Want to participate in the planning process or share your knowledge? Please feel free to contact me at any time to share information or attend a meeting.

Charlie at 250.213.1459

Upcoming projects

- Place ten backflow preventers and owners' shut-off valves as part of a long-term project to renew all shut-off valves and install backflow preventers. (Delayed until early 2018.)

Last thoughts

We are always busy, and we can always use help. If you are only here for a few days during the year let me know and I will find you a job compatible with your schedule.

Do **you** have some spare hours? Give me a call!

Charlie at 250.213.1459

Submitted by Charlie Troger
PIID Water Trustee

ATTACHMENT 1

Preliminary Water Tank Replacement Requirements and Information

The following is a macro level look at some of the requirements for initiating the water tank project and preliminary information on the best potential tank type.

PROCESS

As some of you may know, our duties and responsibilities related to the Piers Island Water System are governed by a piece of provincial legislation called the *Drinking Water Protection Act*. This act, among other things, describes the necessary actions if we wish to change our system architecture by installing a new water tank. The relevant section in the act is Part 2 – *Drinking Water Supply / Construction permits and requirements for water supply systems / 7*. It reads:

Construction permits and requirements for water supply systems

- 7 (1) This section applies in relation to the construction, installation, alteration or extension of
 - (a) a water supply system, or
 - (b) works, facilities or equipment that are intended to be a water supply system or part of a water supply system.
- (2) Subject to the regulations, a person
 - (a) must not undertake activities referred to in subsection (1) unless a construction permit for this has been issued in accordance with the regulations, and
 - (b) must not undertake those activities except
 - (i) in accordance with the regulations or the plans approved in accordance with the regulations, and
 - (ii) in accordance with the terms and conditions of the construction permit.
- (3) In addition to any other requirements established by the regulations, a person applying for a construction permit must submit to an issuing official,
 - (a) in the case of a permit for the construction of a water supply system, the results of water quality analyses in accordance with the regulations, and
 - (b) in any case, the results of any water quality analyses required by the issuing official or drinking water officer.
- (4) The issuing official may refuse to issue a permit until satisfied that the applicant has identified an owner of the water supply system who is to be responsible for the ongoing operation of the system, or in charge of managing that operation, in accordance with this Act.
- (4.1) An issuing official may include in a construction permit terms and conditions the official considers advisable respecting the construction, installation, alteration or extension.
- (5) Terms and conditions included in a construction permit may set requirements and standards that are more stringent than those established by the regulations.
- (6) A construction permit:
 - (a) is valid for one year, unless a different period is specified in the permit,
 - (b) is not transferable unless the transfer is approved by an issuing official, and
 - (c) cannot be varied except by the issuance of a new construction permit.

We apply for permission to install a new tank to the Drinking Water Officer, Richard Greve, who has sent a permit application. (See attached file). The application is a one-page document but should be accompanied by documentation describing our construction project and should be reviewed and approved by an engineer. The

focus of this documentation is specifically the design changes to the water system itself. Richard reinforced the fact that engineering approval of such a project, once documentation has been provided, takes time.

In addition, we will be required to apply for and receive a building permit from the CRD. This permit will give us permission to construct the necessary support infrastructure for the new water tank. The application for a permit will require detailed drawings as well as approval by an engineer prior to submission.

TANK TYPE

Scott Mason of CRD Water Engineering shared the following insights and information into tank types and suppliers:

There are three types of liquid storage tanks available that are considered for municipal water storage applications:

- Glass coated bolted steel,
- Welded painted steel, and
- Concrete.

The CRD typically uses a concrete tank for water storage, however, Scott suggested that this kind of tank was not a great solution for an Island with limited access. **He recommended a bolted steel, glass-fused tank for our application.** This is consistent with what some of our existing reports and documentation also recommended. There are a number of examples of bolted steel, glass-coated tanks available to view in the Gulf Islands. Scott also gave the names of two Canadian-based tank suppliers and installers:

- CST Industries (Columbia Tek Tank)
- STT Envirocorp

Below is the link to an article that describes the advantages of bolted steel, glass-fused tanks. Although it is an American article, it is relevant and informative. Of particular interest is the fact that although the glass-fused technology has been around for many years, it has now advanced so that all edges of each panel are rounded and glass-fused, eliminating the likelihood of corrosion over time.

<https://www.besttank.com/wp-content/uploads/2015/08/White-Paper-Brochure.pdf>