SSID
Savary Shores Improvement District

2020 OPERATOR'S REPORT

1. SODIUM HYPOCHLORITE APPLICATION, October 1 2020

Sept. 25 / 2020
Routine Bacteriological results showed 3ppm coliforms present at Storage Tank #1 and 2ppm at Cedar way standpipe. Operator discussed result with Vancouver Coastal Health Officer Jack Davidson that the 2 nodes should be resampled after a water flush at the Cedar way standpipe next available sample date.

Sept. 28 / 2020
Cedar way standpipe flushed without chlorine. Sample station #3 spigot and spigot at #1 reservoir tank were cleaned prior to drawing sample to ensure accuracy. Resample drawn and delivered to lab.

Oct. 1 / 2020
Results showed 2ppm present at Reservoir #1 and Sample Station #3. Drinking Water Officer, Michael Nguyen and SSID Operator decided a mild chlorination flush was next necessary course of action.

A mild chlorine flush consists of enough 12% sodium hypochlorite added to reservoir tank to achieve a 2ppm residual at the tank. Municipal water systems continuously maintain a residual of (optimal) 0.2ppm and 2ppm (0.0002%)

3L of 12% sodium hypochlorite were needed to achieve a 2ppm residual in the lower tank which has the volume of 40,000gal plus distribution mains.

Cedar way and Phyllis Rd standpipes were then flushed and a 0.07ppm residual was detected at Phyllis rd. standpipe.

Oct. 6 / 2020
Resample at Reservoir #2 and Sample Station #3 nodes. Chlorine residual at Reservoir #1 was 0.26ppm and Sample Station #3 showed 0.76ppm. Both results were within target range and acceptable with Canadian Drinking Water standards.

Oct. 9 / 2020
Samples drawn Oct 6 have shown results in sample station 3 and storage tank 1 as optimum:
Total Coliform per 100 mL: Less than 1 E. Coli per 100 mL: Less than 1

In future, a sandwich board will be placed in front of SSID shed to notify of chlorine flush taking place as maintenance item. If ever a question of water quality, please consult SSID website as our Administrator updates regularly.

2. PROJECTS COMPLETED IN 2019 AND 2020 TO DATE, October 11 2020

Generator-2 tie-in to automation
In 2018, an outdoor enclosure was constructed for generator-2. In 2019, we had electricians tie into existing electrical components to allow gen-2 to receive a signal when tanks needed filling and turn-on to power pumps.

Annual fire hydrant service and rebuild
In April 2019, Savary Shores fire hydrants received a full teardown and service. Parts that were worn or defected were replaced. The order in which hydrants were serviced allowed for uni-directional flush of the water system, keeping lines clear of any possible sediment that could occur from groundwater. 2020 hydrant service is scheduled for the week of October 20.

Monthly nitrate sampling and monitoring at both wells
For the past year, we have been monitoring our nitrate levels monthly. Results have been documented and applied to a table (available on our website) by the SSID Administrator. Our levels have decreased from that of previous years.

Of the readings obtained in 2019, April saw the highest level of nitrates in well-1 at 4.09 mg/L. 10 mg/L is the Maximum Allowable nitrate level according Canadian Drinking Water Guidelines. We will continue to monitor nitrates on a quarterly basis to ensure levels stay well below 10mg/L. Residents of SSID can help the reduction of nitrates within the groundwater protection zone by following their maintenance plans provided by ROWP septic installers upon installation of permitted septic systems.

Nitrate study
Property owners of 4 neighbouring wells allowed SSID to test for nitrates to draw comparisons with our own results / levels. Nitrate levels of neighbouring wells were found to be minimal in comparison with SSID levels, the highest being 1.46mg/L.

Water connections
There were 2 new property connections completed in 2019, and 1 so far in 2020.

Meter replacement schedule
5 of our oldest meters have been replaced with new meters. Extracted meters were sent to Fred Surridge for calibration testing. The meters proved to be 99.4% accurate. The meter replacement schedule has been altered to 2 per year instead of 6 as a result of accuracy testing.

Standpipe pits
SSID has 4 standpipes located at various points in the distribution system with the main purpose of flushing "dead ends." These pits have been identified as confined spaces and have been secured for employee and public safety, as regulated by WorkSafe BC. Custom concrete lids have been installed allowing for operation of valves from the surface, preventing any possible entry to pits.

Generator #2 transfer switch
We will continue fine tuning the tie-in of generator-2 to the existing infrastructure with an alternating

transfer switch. The purpose of this addresses safety concerns allowing generators to back up each other should either fail to start. The alternating transfer switch will also contain a timer allowing gen-2 to run primarily in daytime hours and designating gen-1 to night.

Generator #1
On June 15th generator-1 failed to start, so generator-2 temporarily became our only operating generator. A compression test on generator-1 proved uneven compression among cylinders. After weighing cost of replacing mechanical components it was recommended by our diesel mechanic and electrician to look into purchase of a new generator as generator #1 was slated for replacement in 2022.

Frontier Power, the Kubota distributor for western Canada, was consulted for a suitable replacement for our old Kubota generator. It was found that Kubota no longer produces a 16.5kW and that due to a new emission regulation a Tier-4 emission generator was required. Tier-4 generators were only available in 12kW and 22kW. We looked at different ways we could possibly retrofit old generator components with a new motor or customize a new generator (12kW) with generator components to suit our needs. After consulting with our electrician at Newport Electric and Frontier Power's engineering department it was found that the 22kW would be the best choice to suit our needs. On Sept. 23rd trustee meeting the 22kW tier 4 generator was approved for purchase. On the 24th the purchase order was forwarded to Frontier and order placed. Delivery was estimated at 3-4 weeks. We have yet to receive a delivery date.

3. CONSUMPTION REPORT

In 2019, we pumped just over 1,290,000 imperial gallons, which was an increase of 4.31% from 2018. The highest consumption month in 2019 was August at 326,000 ig. Which was less than August 2018 where just over 384,000 ig was pumped. We saw consumption higher overall in the 2nd quarter 2019 at 359,000 ig vs 292,000 ig in 2018 and an overall increase in number of properties using water in 2019.