

Scott Point Waterworks District

Calendar Year 2019

Water Quality Report

This report is issued in accordance with section 11 of the British Columbia Drinking Water Protection Regulation of the Drinking Water Protection Act, which requires public reporting of quality monitoring within six months of the end of the calendar year. Water quality sampling is conducted by North Salt Spring Waterworks District (“NSSWD”) under contract. The Trustees provide oversight of the testing program and provide reporting.

SYSTEM DESCRIPTION

Scott Point drinking water is obtained from three groundwater wells. Primary treatment at Well 1 is oxidation followed by greensand filtration and reverse osmosis; at Well 3 it is provided by oxidation followed by sand filtration and Pyrolox absorption; and at Well 4 water is treated through sand filtration, ion exchange tannin reduction, oxidation, and greensand filtration. Disinfection consists of chlorine, in the form of sodium hypochlorite, injected prior to water being introduced into a common distribution system and the residual chlorine is monitored weekly at the ends of the system. A single Reservoir Tank located at Well 1 maintains system pressure.

OVERSIGHT

The District files an annual Water Quality Testing Plan with Island Health. This Testing Plan specifies the weekly, monthly, quarterly and annual sampling required. In 2019, all samples specified in the plan were completed and the results from a certified laboratory were forwarded to Island Health. Additional information on the Water Quality Testing Plan and testing results are available on the District’s website at www.scottpointwaterworks.com. This Annual Water Quality Report is made available to all residents via email and at the District’s AGM.

The District has an up-to-date Emergency Response Plan. The trustees review this plan annually and copies are provided to Island Health and NSSWD. Copies are also posted in each treatment plant and on the District’s website. At the request of Island Health, a pandemic response was added to the Plan in March 2020.

The District’s system is classified as a Small Water System under the Environmental Operators Certification Program. Routine operation and maintenance tasks on the District’s system are provided by NSSWD under contract. The NSSWD operators are all qualified at EOCP Levels I to IV, all of which exceed the requirements of a Small Water System. One trustee is qualified as EOCP Small Water System operator.

The District has completed a source to tap assessment using Ministry of Health guidelines. This formed part of the analysis that resulted in the District completing a physical risk assessment as part of its Long Term Planning process. A copy of the 10 Year Plan and the physical risk assessment are available on the District's website.

GLOSSARY

MAC = Maximum Allowable Concentration;

mg/L = milligram per litre – equivalent to parts per million;

µg/l = micrograms per litre – equivalent to parts per billion;

DBP = disinfectant by-product – compounds formed through reaction with chlorine

OPERATING PERMIT

The District operates under a Small Water System Operating Permit issued by Island Health. There are no special conditions attached to the Operating Permit.

BACTERIOLOGICAL TESTING

The chlorine residual level at several locations is tested weekly to ensure levels remain above 0.2 mg/L at the ends of the system, and above 0.8 mg/L in the Reservoir.

Water is sampled at the end of the system monthly and tested for the presence of coliform and non-coliform bacteria and for e-coli. 11 samples had no indications of bacteria and 1 sample in August indicated presence of non-coliform bacteria (subsequent retest showed no indication of bacteria).

Each quarter and after the first fall heavy rainfall event, each well is tested for presence of bacteria before and after treatment. In 2019, 15 samples were tested, with 13 samples indicating no bacteria or e-coli present. One pre-treatment test result in September after first heavy rainfall, and one pre-treatment test result in October indicated the presence of non-coliform bacteria – subsequent retest indicated no indication of bacteria.

CHEMICAL TESTING

Product water at each of the three water treatment plants was tested in August for the presence of a number of metals and salts before and after treatment. Results are available on the District's website at www.scottpointwaterworks.com and show water treatment continues to be effective in removing a number of elements.

Raw water from wells can exceed the MAC contained in the Canadian Drinking Water Quality Guidelines (CDWQG) set by Health Canada for Iron, Magnesium, Manganese and Sodium.

All results for treated water were below the MAC.

Due to ongoing concerns about the presence of DBPs in the water as a result of chemical reactions between naturally occurring elements and the chlorine used for disinfection, quarterly DBP testing continued in 2019.

- Quarterly testing at the ends of the system indicated elevated levels of DBP, in particular Tri-halomethanes which exceed the CDWQ Guidelines MAC of 100 µg/l. Readings were recorded as: January 102 µg/l, April 96 µg/l, July 104 µg/l, October 101 µg/L.
- Treatment upgrades at Well 1 and Well 4 have resulted in improvement in THM results with a Rolling 12 month average level of 101 mg/L at end of 2019, a significant drop from 167 mg/L at end of 2018. (NOTE: the Jan 2020 sample indicated THM level at 49 mg/L)
- Quarterly sampling for bromate levels in treated water were all well below the MAC of 10 µg/L.
- February and October testing for Halo-acetic acids had none detected.

Stemming from the possibility of run-off contamination into the wells identified in the physical risk assessment, in 2017 the District implemented testing of raw well water for the presence of nitrates after the first heavy rainfall event in the fall. Testing in September, 2019 found levels of 17 µg/L, 280 µg/L, and 0 µg/L. in Well 1, 3, 4 respectively. Measured against the MAC of 10,000 µg/L, this indicates relatively low levels of run-off from septic systems or agriculture activity.

ORDERS

The District received no orders from regulatory authorities in 2019.

OPERATIONAL PROBLEMS

There were no malfunctions of disinfection equipment in 2019.

There were pumping equipment challenges with the RO plant at Well 1, requiring the system to more heavily draw on Well 4 during periods of high water use. While there were no instances of insufficient water supplies experienced in 2019, there was additional stress on aquifers in 2019. This was compounded by a distribution system leak prior to rainfall recharge of the aquifers.

The long-standing issue of seawater intrusion into Well 1 continues to be a concern and is being managed through monitoring and adjustments of water sourcing during periods of high demand.

MAJOR UPGRADES AND REPAIRS

There was one major leak from the water main in November caused by impingement of a tree root. This resulted in significant water loss until this was found and fixed.

Treatment effectiveness for iron and manganese removal was examined in light of advisory (see below). Booster pumps were added at Well 1 and Well 4 to increase the flow of water to more thoroughly scrub the media during daily backwash cycles.

PROGRAMS

Each spring the District has NSSWD go through the annual water main flushing program to remove sediment build up.

Cross connections are locations where it is possible for water to enter the system from water users' systems and pose a risk of contamination. The District has installed back-flow prevention devices at each service location. In addition, the District conducted a cross connection survey of residents in 2019 to gauge the level of risk from residents with independent water supplies. This survey confirmed that all reporting locations either have no cross-connection or have appropriate back-flow prevention valves or air gaps in place.

Aging services to each water user pose a risk from leaks from aging pipe, meter inaccuracy, and leaching of lead from old brass fittings. The District has authorized a multi-year plan to replace meter sets and services lines to meet current standards.

ADVISORIES

There were no Boil Water Advisories in 2019.

On Nov 1 the Operator discovered discoloured water at the end of the system during routine chlorine testing. Testing revealed a high level of manganese, with the source likely to be manganese oxide created during processing. After polling, one resident reported slightly discoloured water. Island Health was advised and an advisory was issued to affected residents requesting that any discoloured water be flushed through their residence and reported to the Trustees. The cause was tracked to carry-over of oxidized manganese through treatment and is being addressed (see above). No further reports were received.

It should be noted that the removal of the water softeners at Well 4 has increased water hardness and some residents are noticing this as "lime-scale" built up in their glassware, kettles and showerheads. We are continuing to monitor hardness to determine the long-term level and whether treatment will be necessary.

PERMANENT ADVISORIES

The following Permanent Advisories are highlighted for attention:

Sodium: Sodium chloride occurs naturally. The sodium levels of water are within CDWQ Guideline limit of 200 mg/L but at times exceed the alert level for people on sodium-restricted diets of 20 mg/L (This is a permanent alert which the district has previously mailed to property owners). The September routine testing indicated sodium levels in product water at Well #1 – 119 mg/L, Well #3 – 19 mg/L and Well #4 – 104 mg/L.

It is recommended people on sodium restricted diets use an alternative source for drinking water.

Disinfectant By-Products: As reported above, levels of DBPs, particularly Tri-halomethane compounds have exceeded the MAC.

It is recommended that people concerned about these compounds should consider an alternative source for drinking water, or treat by boiling or with activated carbon.