

# REGIONAL DISTRICT OF NANAIMO

## Water Service Area Annual Report 2019



### **Whiskey Creek Water Service Area**

June 2020

**REGIONAL DISTRICT OF NANAIMO**  
*Water & Utility Services Department*

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Appendix A - Map of Whiskey Creek Water Service Area

Appendix B - Water Quality Testing Results

Appendix C - Emergency Response Plan

## 1.0 Introduction

The following annual report describes the Whiskey Creek Water Service Area and summarizes the water quality and production data from 2019. This report also includes a summary of inquiries and complaints, completed and proposed maintenance activities, Operator Certification, the Emergency Response Plan, and the Cross Connection Control Program.

This report is to be submitted to Island Health by the spring of 2020.

## 2.0 Whiskey Creek Water System

The Whiskey Creek water system was constructed in the 1970s and was initially operated by the subdivision developer, Westerlea Estates Ltd. The water system is located eight kilometres southwest of Qualicum Beach on the south side of Highway 4. There are 130 residential lots connected to the water system. In January 2011, the ownership and operation of the Whiskey Creek Water District was transferred to the RDN. A map of the Whiskey Creek Water Service Area is provided in Appendix A for reference.

### 2.1 Source Water

Two water licenses allow surface water to be extracted from nearby Crocker Creek. An emergency backup generator is available in the event of a power failure. Water from Crocker Creek is temporarily stored in a raw water storage pond next to the pumphouse on Hebert Road. Perforated pipe under the bed of the pond carries water into a concrete wet well containing two submersible pumps. These pumps deliver water through a pressure filter to a water storage reservoir. The water is dosed with a polymer upstream of the filter and then chlorinated. Drinking water is then pumped into the water system via two booster pumps.

### 2.2 Reservoirs

One service reservoir (concrete) is present at 979 Poplar Way, and has a capacity of 195 m<sup>3</sup> (43,000 imperial gallons).

### 2.3 Distribution System

The water distribution system in Whiskey Creek is summarized in the table below. There are 9 fire hydrants and 4 flush-outs in the system.

Watermain Material	Length of mains in Whiskey Creek Water Service Area	Prevalence in Water Service Area
<u>Asbestos-concrete:</u> 100mm or smaller	1,280 m	40%
150mm or larger	1,920 m	60%

### 3.0 Water Sampling and Testing Program

Water sampling and testing is carried out weekly in the distribution system. The following table includes a summary of all testing:

Timing	Location	Tests
Weekly	BC Centre for Disease Control	Total coliforms, E.Coli
Weekly	RDN (in-house) Laboratory	Total coliforms, E.Coli Temperature, pH, Conductivity TDS, Chlorine residual, Salinity Monthly- Total Iron and Manganese
Quarterly	Bureau Veritas (formerly Maxxam)	Trihalomethanes (THMs), Total coliforms, and E.Coli tested at the reservoir site and 844 Carson Rd.
Annual Source Water Testing (every Fall)	Bureau Veritas (formerly Maxxam)	Complete potability testing of raw source water incl. tannins and lignins
Annual System Water Testing (every Spring)	Bureau Veritas (formerly Maxxam)	Complete potability testing of distribution system water

### 4.0 Water Quality - Source Water and Distribution System

Up-to-date water quality reports and lab data are posted monthly on the RDN website at <https://www.rdn.bc.ca/whiskey-creek>. Tables of water quality testing results for both the source water and distribution system are provided at the end of this report under Appendix B.

The turbidity of water in the distribution system is closely monitored with an online turbidity meter and alarm. Occasionally, during high turbidity events, such as heavy rainfall in/near Crocker Creek, the filtration system cannot effectively filter the surface water. In these cases, the surface water intake is temporarily shut down while drinking water is trucked-in from another RDN water system nearby to top up the water storage reservoir until the high turbidity event passes. In 2019 the RDN began the process of investigating local groundwater supply as a possible new water source for this service area.

### 5.0 Water Quality Inquiries and Complaints

A few inquiries were received from the Whiskey Creek water service area in 2019 and were typically related to water billing.

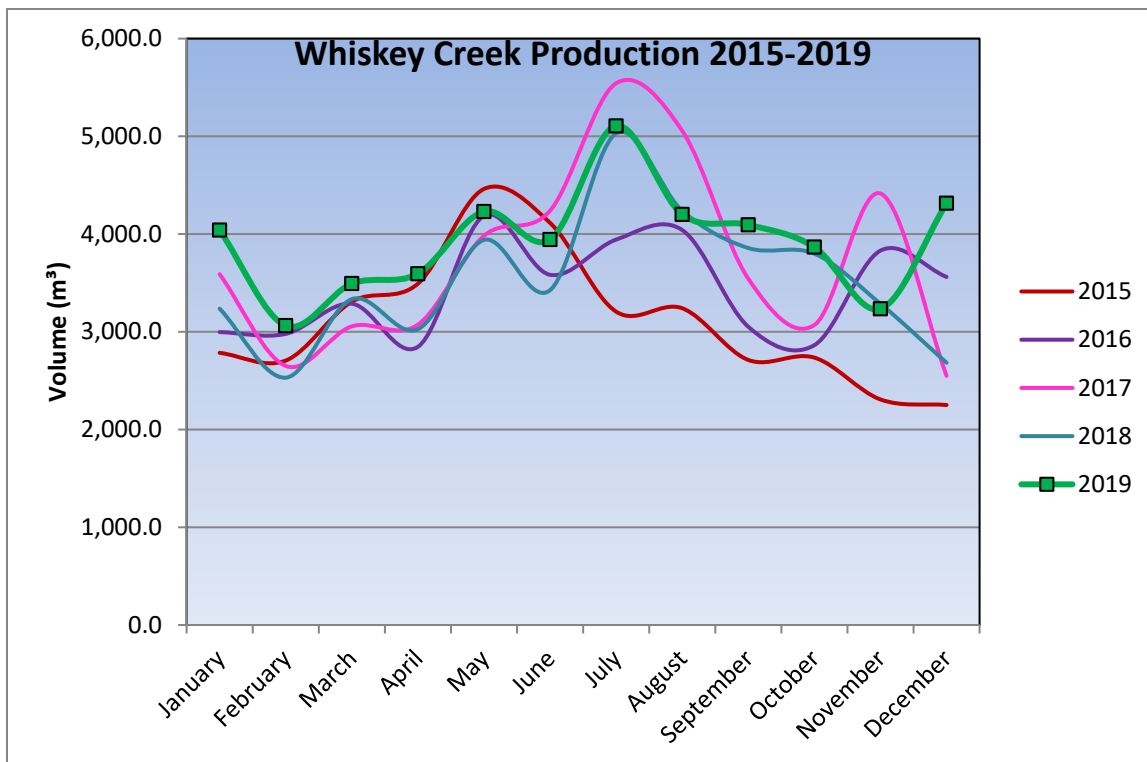


A summary of the water system incidents in 2019 is given in the table below.

Activity in 2019	Date(s)	History/Notes
Boil Water Advisories	None	None
High Turbidity Events	Spring and Fall	Backwash media, truck-in water
Equipment Malfunction	None	None
Water Main Breaks	None	None
Pump Failures	Monthly	Temp power outages

### 6.0 Water Consumption

Monthly water production for the Whiskey Creek Water Service Area for the past 5 years is shown in the chart below. Water production in 2019 was above average in comparison to some previous years, with a peak in July due to increased outdoor watering.



#### Consumption

In the Fall/Winter of 2019, the average usage per home in Whiskey Creek was 0.55 cubic metres per day (120.9 imperial gallons). In the summer, the average water usage was 0.72 cubic metres per day (195.8 imperial gallons). Based on these figures, the annual consumption per capita is estimated to be 232 L/day (based on 2.4 people/household). This consumption is **15% less** than the RDN system average of 295 L/day/capita in 2019.

## 7.0 Maintenance Program

Daily pump station inspections are carried out to reduce or eliminate the risk of contamination and system failure, and to ensure the consistent application of chlorine for treatment purposes. Watermains are flushed once annually in the spring. Fire hydrants (9) are serviced once per year (either 'A-level' or 'B-level' maintenance) in the fall. The water intake is cleaned weekly. Twenty-four hour on-call coverage is in place to respond to water system emergencies and alarms.

Fire hydrants in the Whiskey Creek water system cannot be relied on for fire insurance purposes due to insufficient supply and capacity for fire flows. Upgrades to water supply volumes and reservoir storage may be required in the future but would not proceed without community support and financing.

## 8.0 Operator Certification

The Regional District Water & Utility Services staff are comprised of one Manager, one Project Engineer, one Engineering Technologist, one Engineering Technician, one Chief Operator, and seven certified operators. The operators receive ongoing training and certification in:

- |                            |                                                           |                            |
|----------------------------|-----------------------------------------------------------|----------------------------|
| ✓ Water Treatment          | ✓ Chlorine Handling                                       | ✓ Confined Space Awareness |
| ✓ Water Distribution       | ✓ WHMIS (Workplace Hazardous Material Information System) | ✓ Traffic Control          |
| ✓ Wastewater Collection    | ✓ TDG (Transportation of Dangerous Goods)                 | ✓ Fall Protection          |
| ✓ Cross Connection Control |                                                           | ✓ First Aid                |
| ✓ Asbestos Awareness       |                                                           | ✓ Silica Awareness         |

## 9.0 Water Service Area Projects

### 9.1 2019 Completed Studies & Projects

- Acquired a statutory right-of-way over Crown Land and drilled 2 test wells near Carson Road;
- Installed Aquifer Protection Signage within the service area;
- Corresponded with residents regarding water conservation;
- Enforced outdoor sprinkling regulations;
- Completed irrigation checks for high-water users;
- Advised residents regarding water leak repairs;
- Began a Water Systems SCADA Master Plan;
- Began an overall Water System Condition Assessment.
- Completed the 10-year Drinking Water Action Plan;
- Adopted a Cross Connection Control Bylaw;
- Created a Cross Connection Control webpage and educational brochure;
- Completed regular watermain flushing, and hydrant maintenance;
- Maintained a high level of water quality; and
- Continued quality control through regular testing and monitoring of water system.

## 9.2 2020 Proposed Projects & Upgrades

- Develop a distribution system management plan to minimize the accumulation and release of aluminum into the distribution system;
- Develop a site specific aluminum monitoring plan that includes minimum monthly testing of aluminum in the distribution system;
- Continue drilling test wells to secure a groundwater source;
- Upgrade the pumphouse at the reservoir site;
- Update asset database with new assets;
- Continue watermain flushing program and hydrant maintenance;
- Calibrate and service all Hach spectrophotometer lab equipment;
- Implement a Water Systems SCADA Master Plan;
- Complete a Water System Condition Assessment report;
- Begin the next 10-year DWWP Water Conservation Plan; and
- Continue to offer numerous water-saving incentives via rebates.

## 10.0 Emergency Response Plan

The Regional District Emergency Response Plan (ERP) contains procedures and contact information to efficiently respond to water system emergencies such as contamination of water supply, loss of supply, pump failure, and drought management. The ERP was reviewed and updated in 2019, and copies are available on our website, at each RDN office, in each pumphouse, and in each Water Services vehicle. A copy of the ERP is also attached to this report in Appendix C.



**Water Source Area Protection sign on Hebert Rd.**

## 11.0 Cross Connection Control

In 2017, a more robust Cross Connection Control Plan was prepared that fully defines the CCC program, including standard operating procedures, plumbing code references, reporting procedures, survey schedules, backflow prevention standards, detailed installation schematics, blank test forms, testing reminders, and non-compliance letters. Two RDN Operators achieved their Backflow Assembly Tester re-certification in 2019. The RDN Manager of Water Services is the designated Cross Connection Control Manager..

In 2019, a stand-alone Cross Connection Control Bylaw was adopted that contains definitions, authorizations, applications, liability, rules, regulations, testing requirements, and reporting requirements. The bylaw addresses retrofits, prohibitions, special circumstances, reclaimed water use, alternate water sources, failure to comply, inspections, testing, offences, penalties and more. A webpage has been established on the Water Services website that educates RDN customers about cross connections and lists the relevant links to current standards and resources.

## 12.0 Cyber Security

The RDN uses a multi-level approach to cyber-security. Corporate network security is employed via a universal threat management gateway that implements various methods of data security, which includes daily definition updates to block known cyber threats. In addition, all RDN PC's are protected with anti-virus software. RDN water systems are connected to the corporate network via IP-Sec VPN's for remote management by information technology and equipment operators. Future infrastructure upgrades will see our water systems located on segregated networks to limit the vulnerability from cybersecurity threats.

## 13.0 Closing

An annual report for the year 2020 will be prepared and submitted to Island Health in the spring of 2021. Annual reports are also available on our website at: <https://www.rdn.bc.ca/whiskey-creek>.



Land clearing and road  
construction in Whiskey Creek

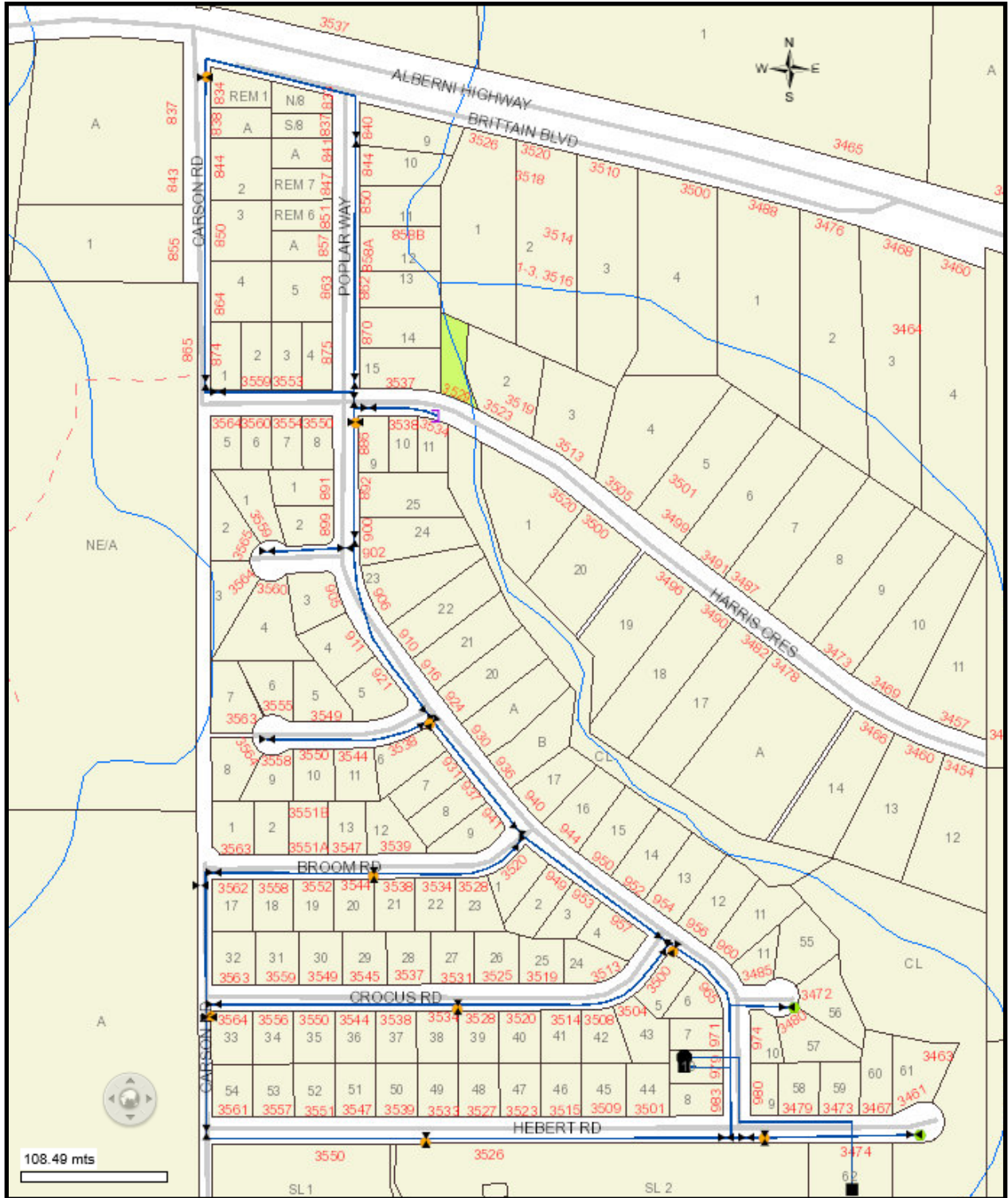


**APPENDIX A**

**MAP OF WHISKEY CREEK**

**WATER SERVICE AREA**

WHISKEY CREEK WATER SERVICE AREA



## APPENDIX B

### WATER QUALITY TESTING RESULTS

# WHISKEY CREEK WATER SERVICE AREA



**Facility Location:**

979 Poplar Way  
Qualicum Beach

**Facility Information:**

Facility Type: DWC

**Facility Sampling History:**

<u>Location</u>	<u>Date</u>	<u>Total Coliform</u>	<u>E. Coli</u>
3564 Foxglove Road, Whiskey Creek	16-Dec-2019	L1	L1
3533 Hebert Road, Parksville	9-Dec-2019	L1	L1
844 Carson Road, Whiskey Creek	9-Dec-2019	L1	L1
3537 Harris Crescent	2-Dec-2019	L1	L1
3533 Hebert Road, Parksville	25-Nov-2019	L1	L1
3564 Foxglove Road, Whiskey Creek	18-Nov-2019	L1	L1
844 Carson Road, Whiskey Creek	12-Nov-2019	L1	L1
3537 Harris Crescent	4-Nov-2019	L1	L1
3533 Hebert Road, Parksville	21-Oct-2019	L1	L1
3564 Foxglove Road, Whiskey Creek	15-Oct-2019	L1	L1
844 Carson Road, Whiskey Creek	7-Oct-2019	L1	L1
3537 Harris Crescent	2-Oct-2019	L1	L1
3533 Hebert Road, Parksville	25-Sep-2019	L1	L1
3564 Foxglove Road, Whiskey Creek	18-Sep-2019	L1	L1
844 Carson Road, Whiskey Creek	9-Sep-2019	L1	L1
3537 Harris Crescent	3-Sep-2019	L1	L1
3564 Foxglove Road, Whiskey Creek	27-Aug-2019	L1	L1
844 Carson Road, Whiskey Creek	19-Aug-2019	L1	L1

<u>Location</u>	<u>Date</u>	<u>Total Coliform</u>	<u>E. Coli</u>
3537 Harris Crescent	13-Aug-2019	L1	L1
3537 Harris Crescent	13-Aug-2019	L1	L1
3533 Hebert Road, Parksville	6-Aug-2019	L1	L1
3564 Foxglove Road, Whiskey Creek	23-Jul-2019	L1	L1
844 Carson Road, Whiskey Creek	16-Jul-2019	L1	L1
3537 Harris Crescent	9-Jul-2019	L1	L1
3533 Hebert Road, Parksville	2-Jul-2019	L1	L1
3564 Foxglove Road, Whiskey Creek	18-Jun-2019	L1	L1
844 Carson Road, Whiskey Creek	18-Jun-2019	L1	L1
3537 Harris Crescent	10-Jun-2019	L1	L1
3533 Hebert Road, Parksville	3-Jun-2019	L1	L1
3564 Foxglove Road, Whiskey Creek	21-May-2019	L1	L1
844 Carson Road, Whiskey Creek	21-May-2019	L1	L1
3537 Harris Crescent	13-May-2019	L1	L1
3533 Hebert Road, Parksville	6-May-2019	L1	L1
844 Carson Road, Whiskey Creek	15-Apr-2019	L1	L1
3537 Harris Crescent	8-Apr-2019	L1	L1
3533 Hebert Road, Parksville	1-Apr-2019	L1	L1
3564 Foxglove Road, Whiskey Creek	1-Apr-2019	L1	L1
3537 Harris Crescent	27-Mar-2019	L1	L1
844 Carson Road, Whiskey Creek	18-Mar-2019	L1	L1
3564 Foxglove Road, Whiskey Creek	11-Mar-2019	L1	L1
3533 Hebert Road, Parksville	5-Mar-2019	L1	L1
3537 Harris Crescent	19-Feb-2019	L1	L1
3564 Foxglove Road, Whiskey Creek	19-Feb-2019	L1	L1
844 Carson Road, Whiskey Creek	11-Feb-2019	L1	L1
3533 Hebert Road, Parksville	4-Feb-2019	L1	L1

<u>Location</u>	<u>Date</u>	<u>Total Coliform</u>	<u>E. Coli</u>
3537 Harris Crescent	28-Jan-2019	L1	L1
3564 Foxglove Road, Whiskey Creek	21-Jan-2019	L1	L1
844 Carson Road, Whiskey Creek	14-Jan-2019	L1	L1
3533 Hebert Road, Parksville	7-Jan-2019	L1	L1

**Interpreting Sample Reports**

At Island Health, the results of drinking water sampling are reported using the following coding system:

- L1 Less than 1 (no detectable bacteria) - Meaning: No bacteria present
- OG Overgrown - Meaning: Too many background bacteria to give an accurate count
- EST Estimated Count
- A Sample not tested; Too long in transit
- C Sample leaked/broken in transit
- D Sample not tested; No collection date given
- T Sample submitted unsatisfactory. Exceeded 30 hours holding time, please resample.
- NS No sample received with requisition