


REGIONAL DISTRICT OF NANAIMO

Water Service Area Annual Report 2019



French Creek Water Service Area

June 2020

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Appendix A - Map of French Creek Water Service Area

Appendix B - Water Quality Testing Results

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1.0 Introduction

The following annual report describes the French 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 French Creek Water Service Area

The French Creek Water Service Area was established in 1980 and comprises an area west of Drew Road and south of the Island Highway between the City of Parksville and the Town of Qualicum Beach. The water source for the French Creek Water Service Area comes from a series of groundwater wells located nearby. The water source is chlorinated and stored in one reservoir. There are 243 water service connections in the French Creek Water System. In the event of a power failure or water system emergency, back-up water is immediately supplied by the Town of Qualicum Beach through a pressure-sensing valve located on Ormonde Road. A map of the French Creek Water Service Area is provided in Appendix A for reference.

2.1 Groundwater Wells

Six groundwater production wells are present in the French Creek Water Service Area.

Well / Name	Well Depth	In Use	Wellhead Protection	Treated/Untreated with Chlorine
#1	39.6 m	No	Yes	n/a
#2	40.5 m	Yes	Yes	Treated
#4	40.2 m	Yes	Yes	Treated
#5	50.3 m	No	Yes	n/a
#6	52.4 m	No	Yes	n/a
#7	39.6 m	Yes	Yes	Treated

French Creek Well #1 was converted to a monitoring well in 2013 due to low production and high iron levels. Wells #5 and #6 are temporarily not in use due to elevated levels of iron and manganese.

2.2 Reservoirs

One service reservoir (steel construction) is present at 1225 Sunrise Drive, Parksville, B.C. and has a capacity of 364 m³ (80,000 imperial gallons).

2.3 Distribution System

The water distribution system in the French Creek Water Service Area is summarized in the table below. Fire hydrants (26) are located throughout the water service area.

Watermain Material	Length of mains in service area	Prevalence in service area
<u>Asbestos-concrete:</u> 150mm or smaller 200mm or larger	3.5 km 0.8 km	52% 12%
<u>PVC:</u> 150mm or smaller 200mm or larger	0.9 km 1.5 km	14% 22%

Note: 'PVC' is poly-vinylchloride (plastic)

3.0 Water Sampling and Testing Program

Water sampling and testing is carried out weekly in the distribution system. Notably, the chlorine residual levels are tested weekly to ensure the absence of bacterial regrowth in the watermains. The following table includes a summary of all testing.

Timing	Location	Tests
Weekly	RDN (in-house) Laboratory	Total coliforms, E.Coli, Temperature, pH, Conductivity, Chlorine residual, Salinity, TDS, Monthly- Iron and Manganese
Semi-Monthly	BC Centre for Disease Control	Total coliforms, E.Coli
Annual Source Water Testing (every Fall)	Bureau Veritas (formerly Maxxam)	Complete potability testing of raw well water, including T-Ammonia
Annual System Water Testing (every Spring)	Bureau Veritas (formerly Maxxam)	Complete potability testing of distribution system, including T-Ammonia

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 www.rdn.bc.ca/french-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.

5.0 Water Quality Inquiries and Complaints

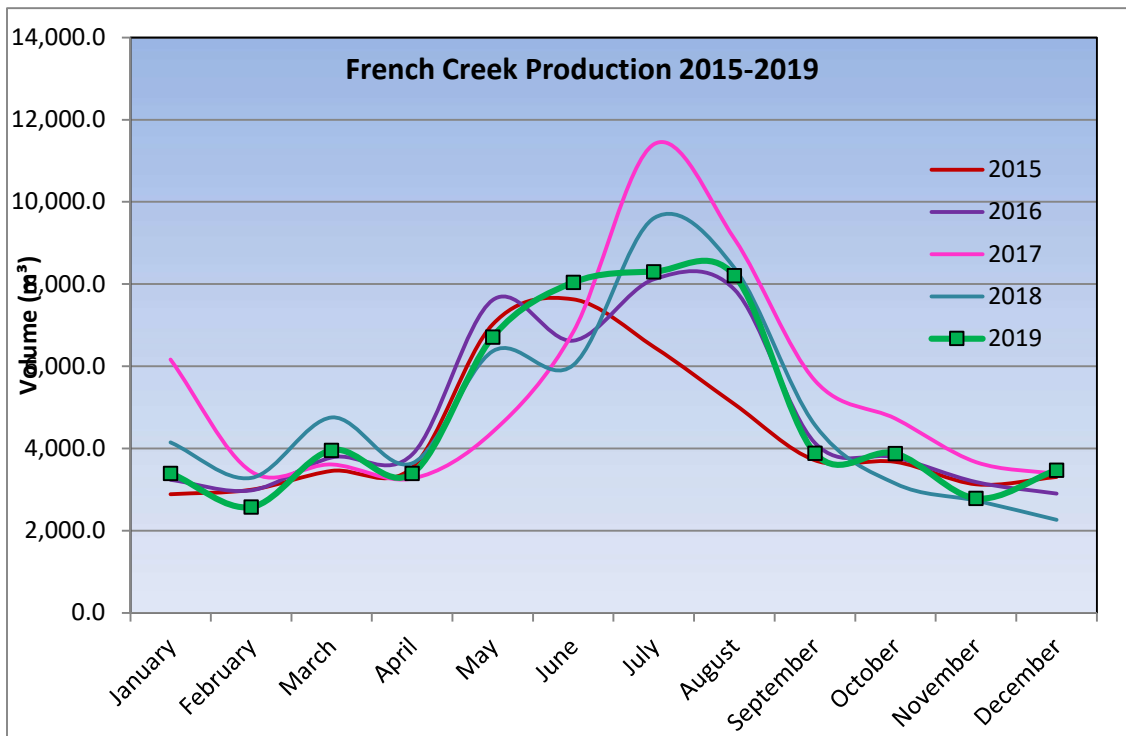
A few complaints and inquiries were received from the French Creek water service area in 2019 and were typically related to isolated incidents of iron discolouration in the water. RDN staff respond to these complaints by flushing the owner's water service line at the curb.

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, ever.
High Turbidity Events	None	None, ever.
Equipment Malfunction	None	None.
Water Main Breaks	None	None.
Pump Failures	None	Temp power outages.

6.0 Groundwater Production and Consumption

The monthly groundwater production in the French Creek Water Service Area for the past 5 years is shown in the chart below. Groundwater production in 2019 was characterized by an early rise in spring consumption but otherwise relatively average use throughout the year. This pattern may be attributed to higher spring temperatures with less-than-average precipitation, followed by a cooler and wetter summer season.



In the Fall/Winter of 2019, the average usage per home in French Creek was 0.39 cubic metres per day (85.8 imperial gallons). In the summer, the average water usage was 0.80 cubic metres per day (176 imperial gallons). Based on these figures, the annual consumption per capita is estimated to be 237 L/day (based on 2.4 people per household). This consumption is **20% less** than the average of all the other RDN water systems of 295 L/day/capita for 2019.

7.0 Maintenance Program

Weekly 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 twice annually: once in the spring and once in the fall.

Fire hydrants are serviced once per year (either 'A-level' or 'B-level' maintenance). The water storage reservoir is drained and cleaned once every two years. Twenty-four hour on-call coverage is in place to respond to water system emergencies and alarms.



**French Creek
Main Pump House and Reservoir**

8.0 Operator Certification

The Regional District Water & Utility Services staff is 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

- Replaced 48 residential water meters;
- Responded to a few complaints about iron & manganese colour in the drinking water;
- Tested for trihalomethanes at a site furthest from the reservoir;
- Corresponded with residents regarding water conservation;
- Enforced outdoor sprinkling regulations;
- Completed irrigation checks for high-water users;
- Advised residents regarding water leak repairs;
- 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;
- Continued quality control through regular testing and monitoring of water system;
- Began a Water Systems SCADA Master Plan; and

- Began an overall Water System Condition Assessment.

9.2 2020 Proposed Projects & Upgrades

- Replace 54 residential water meters.
- Prepare a plan for meeting the new MAC (maximum acceptable concentration) of manganese;
- 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;
- Review well protection plans;
- Complete a Water System Condition Assessment report;
- Begin the next 10-year DWWP Water Conservation Plan; and
- Continue to offer numerous water saving 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.

**French Creek
No.2 Pump House**



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/french-creek>.

**French Creek No. 7
Pump House and
Xeriscape
Demonstration
Garden**

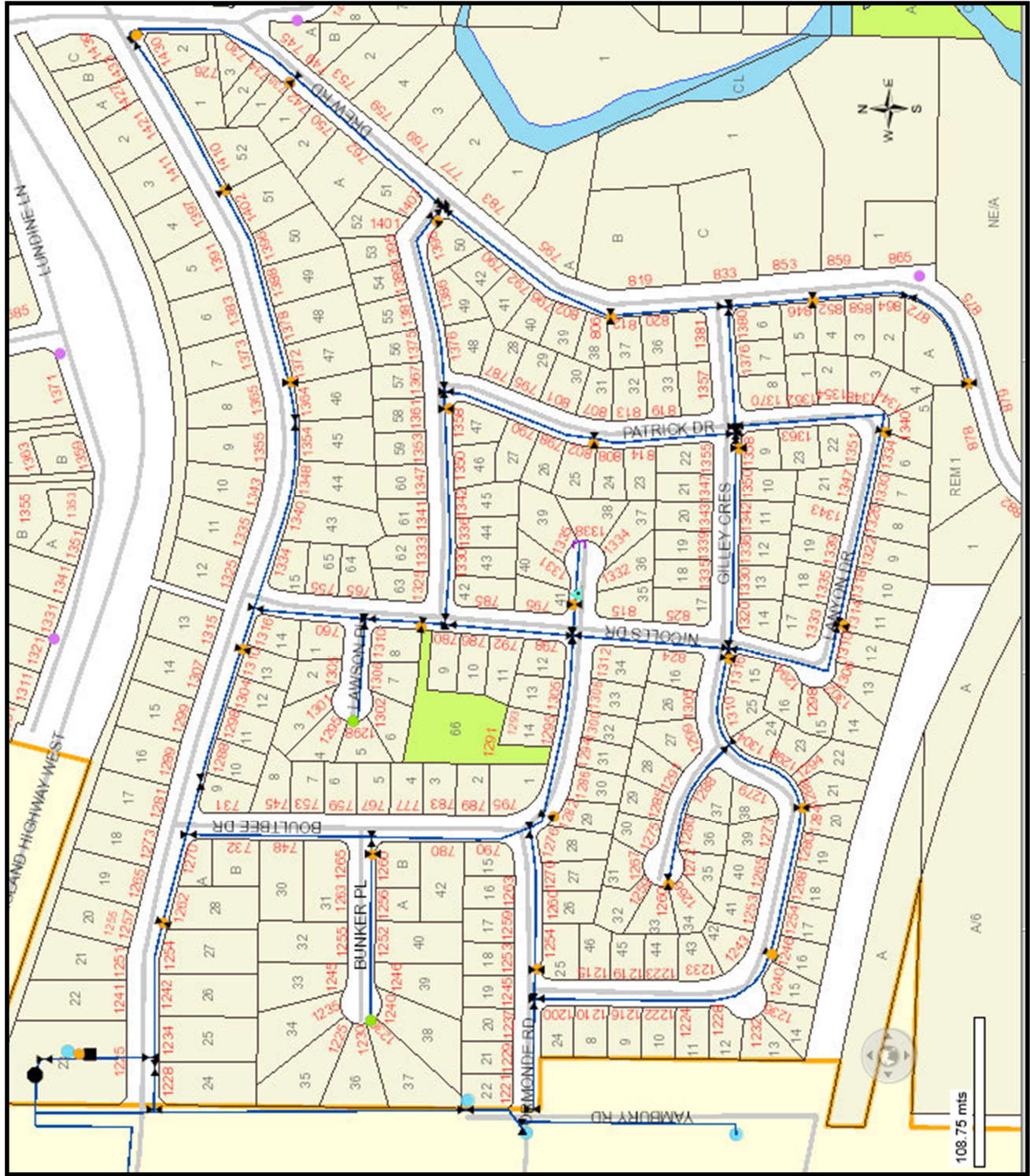


APPENDIX A

MAP OF FRENCH CREEK

WATER SERVICE AREA

FRENCH CREEK WATER SERVICE AREA



APPENDIX B

WATER QUALITY TESTING RESULTS

FRENCH CREEK WATER SERVICE AREA


Facility Location:

1480 Industrial Way
Parksville

Facility Information: Facility Type: 301-10000 (DWT)

Facility Sampling History:

<u>Location</u>	<u>Date</u>	<u>Total Coliform</u>	<u>E. Coli</u>
1381 Gilley Crescent, Parksville	9-Dec-2019	L1	L1
1228 Sunrise, French Creek WWS, French Creek BC	2-Dec-2019	L1	L1
1381 Gilley Crescent , Parksville	12-Nov-2019	L1	L1
1228 Sunrise, French Creek WWS, French Creek BC	4-Nov-2019	L1	L1
1381 Gilley Crescent , Parksville	7-Oct-2019	L1	L1
1228 Sunrise, French Creek WWS, French Creek BC	2-Oct-2019	L1	L1
1381 Gilley Crescent, Parksville	9-Sep-2019	L1	L1
1228 Sunrise, French Creek WWS, French Creek BC	3-Sep-2019	L1	L1
1381 Gilley Crescent, Parksville	13-Aug-2019	L1	L1
1228 Sunrise, French Creek WWS, French Creek BC	6-Aug-2019	L1	L1
1381 Gilley Crescent, Parksville	9-Jul-2019	L1	L1
1228 Sunrise, French Creek WWS, French Creek BC	2-Jul-2019	L1	L1
1381 Gilley Crescent, Parksville	10-Jun-2019	L1	L1
1228 Sunrise, French Creek WWS, French Creek BC	5-Jun-2019	L1	L1
1381 Gilley Crescent, Parksville	13-May-2019	L1	L1
1228 Sunrise, French Creek WWS, French Creek BC	6-May-2019	L1	L1
1381 Gilley Crescent, Parksville	8-Apr-2019	L1	L1
1228 Sunrise, French Creek WWS, French Creek BC	1-Apr-2019	L1	L1
1228 Sunrise, French Creek WWS, French Creek BC	18-Mar-2019	L1	L1
1381 Gilley Crescent, Parksville	11-Mar-2019	L1	L1
1381 Gilley Crescent, Parksville	11-Feb-2019	L1	L1
1228 Sunrise, French Creek WWS, French Creek BC	4-Feb-2019	L1	L1
1381 Gilley Crescent, Parksville	14-Jan-2019	L1	L1
1228 Sunrise, French Creek WWS, French Creek BC	7-Jan-2019	L1	L1

Interpreting Sample Reports

In VIHA, 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