



**2016
Performance
Report**

FRENCH CREEK

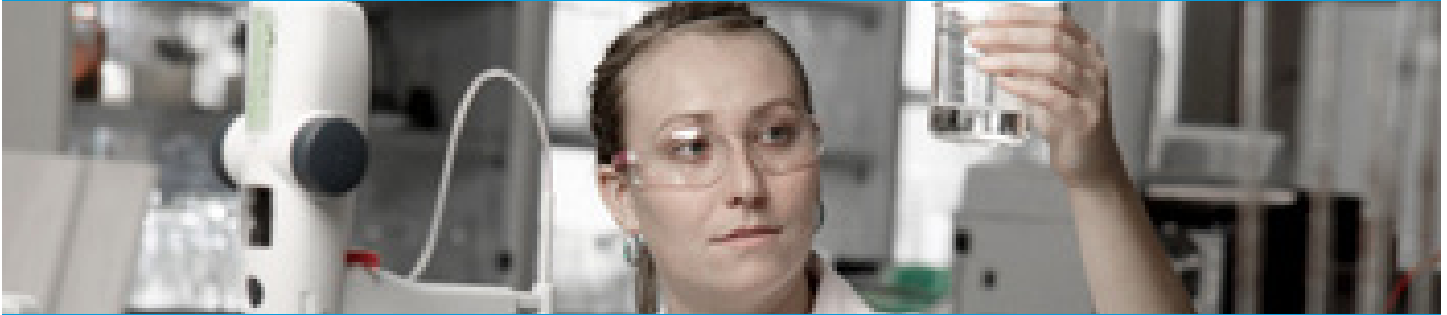
2016 PERFORMANCE HIGHLIGHTS

EPCOR

TABLE OF CONTENTS

Operational Excellence	3
Measuring Success	3
2016 Highlights	3
Water Quality & Quality Assurance	4
Safety	6
Customer Care & Community	6
Community Advisory Panel	6
EPCOR in the Community	7
Capital Project Highlights	7

OPERATIONAL EXCELLENCE



Operational Excellence is a philosophy of leadership, teamwork and problem solving resulting in continuous improvement throughout the organization by focusing on the needs of the customer, empowering employees and optimizing existing activities in the process. Operational excellence includes activities related to the environment, quality assurance, customer care and community, safety and capital projects. This report will highlight our achievements from 2016 and outline opportunities we are pursuing in 2017.

ABOUT THE UTILITY

EPCOR French Creek is a Class III Water Treatment Plant and Class III Water Distribution System as designated through the Provincial Environmental Operators Certification Program, in recognition of our employees' qualifications.

Water Quality in French Creek exceeds the Guidelines for Canadian Drinking Water and those set out by the BC Comptroller of Water Rights. This is the standard that we set out to achieve every day of the year.

In 2016, French Creek obtained its drinking water from a total of 16 active wells in four well fields. The aquifers in the area provide good-quality drinking water. The water is chlorinated before it enters EPCOR's storage reservoirs.

Measuring Success

We work to ensure the performance of the utility meets the consistently high standards that French Creek residents expect. This report is part of our commitment to accountability and transparency.

In each community where we work, we are accountable to deliver service that meets key measures for

Environment, Customer Care, Safety, Quality Assurance, Operational Excellence and Capital Programs. We work closely with our regulators the BC Water Comptroller's Office and the Vancouver Island Health Authority (VIHA). The Capital program and operations budgets are approved by the BC Water Comptroller's Office and detailed reporting is submitted to both regulators.

2016 HIGHLIGHTS

Over 7000 tests performed in 2016 confirmed that the community's drinking water met or exceeded regulated standards for safety, reliability and quality. These results are shared in this report.

EPCOR installed new fire hydrants in the area and continued work on new wells for service to the community.

WATER QUALITY & QUALITY ASSURANCE

Since EPCOR began operating the French Creek Utility in May 2006, we have made significant improvements in the area of quality assurance. This includes the construction of the Drew Road Water Treatment Plant, continued maintenance programs and increased water quality monitoring.

Our employees work to ensure that your drinking water meets or exceeds standards for safety, reliability and quality. This year, EPCOR carried out over 7,000 water quality tests. All testing showed that French Creek's drinking water successfully met both Health Canada and BC water quality regulatory requirements.

We measure water quality by analyzing the physical, chemical and microbial properties of the water. This is carried out under Health Canada Guidelines. They set out the maximum acceptable concentrations of chemical, microbial and radiological contaminants found in water. The guidelines also address aesthetic water quality considerations such as colour, taste and odour.

Tests at various levels and for different parameters are conducted daily, weekly and monthly. In 2016 EPCOR tested for chlorine residual, turbidity, conductivity, temperature, iron, manganese and microbial contaminants, as well as various other external laboratory tests.

Not only do our local operators test and calibrate the equipment used in reporting water quality results daily, but certified technicians also test all water lab equipment annually. In addition, EPCOR continues to monitor the distribution system through the eight sample locations chosen in conjunction with the VIHA Drinking Water Coordinator.

We report our quality assurance, environmental, safety and security data and information to VIHA for review. VIHA must be satisfied that French Creek's drinking water successfully meets all water quality regulatory requirements, including microbial requirements.

The following tables provide detailed information on the sampling and testing completed in 2016.

Physical and Chemical Water Quality Data for French Creek Source and Distribution Water for 2016

Parameter	Unit of Measure	Annual Minimum	Annual Maximum	Annual Average	GCDWO Guidelines
BACTERIA					
<i>E. Coli</i>	CFU/100mL	<1	<1	<1 GM	0
Total Coliforms	CFU/100mL	<1	<1	<1 GM	0
DISINFECTION-BY-PRODUCTS					
Trihalomethanes	mg/L	0.013	0.074	0.041	0.1
Haloacetic Acid	mg/L	0.004	0.032	0.019	0.08
OTHER					
Free Chlorine	mg/L	0.17	1.34	0.62	> 0.20
pH		7.0	8.5	7.7	6.5-8.5 (AO)
Temperature	°C	7	20	12	15 (AO)
Turbidity	NTU	0.06	0.93	0.21	1

How to Measure:

- Most substances listed are reported in milligrams per litre (mg/L). One milligram per litre is commonly referred to as one part per million.
- One part per million is equivalent to one drop in 1/2 bathtub full of water or one second in 12.5 days.
- Some substances are measured in parts per billion. One part per billion is also referred to as one microgram per litre (µg/L).
- One part per billion is equivalent to one drop in 520 bathtubs full of water or one second in 32 years.

Physical and Chemical Water Quality Data for French Creek Source and Distribution Water for 2016

Substance	Unit of Measure	Annual Minimum	Annual Maximum	Annual Average	Guidelines ¹
TRACE METALS					
Aluminum	mg/L	<0.001	0.003	<0.002	0.1/0.2 (AO)
Antimony	mg/L	<0.00002	0.00002	<0.00002	0.006
Arsenic	mg/L	0.0003	0.0007	0.0006	0.01
Barium	mg/L	0.0082	0.0145	0.0104	1
Boron	mg/L	0.015	0.056	0.043	5
Calcium	mg/L	38.6	50.8	42.1	NA
Chromium	mg/L	0.00028	0.00114	0.00057	0.05
Cobalt	mg/L	<0.00002	0.00002	<0.00002	NA
Copper	mg/L	0.0043	0.0173	0.0113	≤1.0 (AO)
Iron	mg/L	<0.002	0.019	0.014	0.3 (AO)
Lead	mg/L	0.000073	0.00034	0.00024	0.01
Magnesium	mg/L	15.8	22.7	17.5	NA
Manganese	mg/L	<0.001	0.006	0.005	0.05 (AO)
Nickel	mg/L	<0.0002	0.0013	0.0004	NA
Potassium	mg/L	1	3.3	2.4	NA
Selenium	mg/L	<0.0002	<0.0002	<0.0002	0.01
Silicon	mg/L	12.7	14.3	13.5	NA
Sodium	mg/L	12.7	31.3	24.1	200
Thallium	mg/L	<0.00001	<0.00001	<0.00001	NA
Tin	mg/L	<0.00001	<0.00001	<0.00001	NA
Titanium	mg/L	0.003	0.007	0.005	NA
Uranium	mg/L	0.000023	<0.00038	0.00017	NA
Vanadium	mg/L	0.0005	0.0038	0.0016	0.0036
Zinc	mg/L	0.0014	0.0057	0.0039	≤5.0 (AO)
Zirconium	mg/L	<0.0001	<0.0001	<0.0001	NA

ABBREVIATIONS	
<	Less than detection limit
>	More than detection limit
ACU	Apparent Color Unit
AO	Aesthetic Objective
AS caCO ₃	expressed as Calcium Carbonate
GCDWQ	Guidelines for Canadian Drinking Water Quality
GM	Gross Mean
HAA	Halocetic Acids
MAC	Maximum Acceptable Concentration
mg/L	Miligram per Litre
N	Nitrogen
NA	not applicable
ng/L	Nanograms per Litre
NTU	Nephelometric Turbidity Unit
µg/L	Micrograms per Litre
µS/cm	Microsiemens per Centimetre
TCU	True Color Unit
THMs	Trihalomethanes

¹The Guideline is either the Maximum Acceptable Concentration (MAC), the Aesthetic Objective (AO) or the operational guidelines (OG) as per the Guidelines for Canadian Drinking Water Quality established by Health Canada.

Summary of Total Coliform and Chlorine Residual

Sampling Location	Samples Collected in 2016	Total Coliform CFU/100ml max	<i>e.coli</i> CFU/100 ml max	Low Chlorine Residual mg/L
Admiral Tyron	24	0	0	0.17
Kasba Circle	24	0	0	0.54
Black Brant	24	0	0	0.21
Hawthorn Rise	24	0	0	0.36
Miller Road	24	0	0	0.20
French Creek House	24	0	0	0.29
Sunrise Drive	24	0	0	0.21
Mid Island Co-op	24	0	0	0.20
Drew Road Filter #1	12	0	0	0.49
Drew Road Filter #2	12	0	0	0.11
Drew Road Filter #3	12	0	0	0.62
Prior to Filter	12	0	0	n/a

SAFETY

Ensuring the safety of our customers and our employees is a top priority for EPCOR, as is our commitment to environmental stewardship.

When it comes to safety, EPCOR is pleased to again report zero lost-time incidents in 2016. EPCOR French Creek also met all its internal Safety Key Performance Measures for leadership, hazard management, monitoring and training. This past year training highlights included Confined Space Entry, Fall Protection, Driver Training, Transportation of Dangerous Goods, Environmental Management Compliance and Root Cause Analysis.

The French Creek site's Emergency Response Plan is reviewed quarterly and updated annually. Monthly safety meetings, safe work plans, tailgate talks and work site inspections also contribute to our strong safety culture.

One of our environmental accomplishments in 2016 was no reportable environmental incidents or injuries for a tenth consecutive year.

CUSTOMER CARE

Our customers are the reason we work in our community and this drives us to achieve the highest customer standards possible. We understand the importance our customers place on reliable water service, therefore, we are available around-the-clock for emergencies. In 2016, EPCOR responded to and resolved 2 outages in the French Creek system and restored all outages within six hours.

COMMUNITY ADVISORY PANEL

French Creek's Water Community Advisory Panel (CAP) brings together people representing a variety of viewpoints within the community to share information and gather stakeholder input on initiatives and emerging issues. EPCOR benefits from hearing first-hand from these volunteers who commit to a three-year term and meet three to four times annually.

Discussions centered on providing information about the existing system, regulatory requirements for the water utility, water restrictions and capital projects.

EPCOR IN THE COMMUNITY

EPCOR supports the communities where we work through initiatives that enhance the community's quality of life. This includes our EPCOR Community Essentials Council (ECEC) and our Helping Hands grant program that supports community service organizations for which staff volunteer. Our efforts in French Creek, through donations and volunteering, help create stronger communities and healthy families. Community activities in 2016 included:

- Parksville Beach Society - Canadian Open Sandsculpting Competition
- Qualicum Beach Fire & Ice Festival
- United Way
- Local Food Bank - employee donations

Looking ahead, EPCOR French Creek will continue to support great organizations that are making a difference in our community.

CAPITAL PROGRAM

Our expertise in managing utilities was demonstrated in 2016 through a number of completed and ongoing capital projects. In 2016 we commissioned a replacement well. We continue to replace aging water meters with more current technology that improves accuracy and efficiency for meter readings and in 2016 we replaced 100 meters.



EPCOR French Creek

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