



Only **Tap Water** Delivers



2007 EPCOR French Creek Annual Performance Report

EPCOR

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INTRODUCTION

Only **Tap Water** Delivers public health, fire protection, support for the economy and quality of life. Your tap water – it's **safe, reliable** and when compared to other water options, **very affordable**. Your water bills pay for the stewardship of local water resources and the processes required to deliver safe and sustainable water to the community.

The 2007 Performance Report provides an overview of the achievements of EPCOR Water (West) Inc. (EPCOR) and looks ahead at plans for 2008. Our key measures of success include a full range of activities, summarized under the headings of Quality and Efficiency; Customer Care and Community; Safety; and Capital and Rehabilitation Programs.

BACKGROUND

EPCOR is a Canadian company that provides two life essentials – water and power. EPCOR began serving its customers in the French Creek area, including a number of homes in the Oceanside area of Qualicum Beach, in May 2006, following approval by the British Columbia Water Comptroller for the purchase of the water utility. Approximately, 4,000 residents (1,800 customer accounts) in the area receive their water from EPCOR.

EPCOR French Creek obtains their drinking water from both ground water and surface water sources. The surface water from French Creek provides up to 20% of the total demand during the summer months or irrigation season. There are 15 active wells confined in two separate aquifers. Both aquifers provide good quality drinking water but one aquifer has higher secondary standard limits of iron and manganese. Sodium hypochlorite is used for disinfection of both surface and ground water. Construction of a greensand filtration system to reduce iron and manganese concentrations began in 2007, with expected completion in 2008.

Every water service in the area is metered. Fire protection service is provided to the residents by means of 140 fire hydrants.

EPCOR employs four full time permanent employees in French Creek. Additional technical support is available through EPCOR's 35 water professionals in BC and 447 water professionals in EPCOR Water Services.





EPCOR'S DISTRIBUTION SYSTEM IS COMPRISED OF:

- two water storage reservoir sites
- 15 active wells
- a booster station pumphouse
- 30 km of AC, PVC and polyethylene piping
- A green sand filtration water treatment plant (under construction in 2007, operational in 2008)

EPCOR'S LONG TERM VISION

We are committed to protecting the public health through the production and delivery of high quality drinking water for all our customers.

A sustainable water utility is not only financially sound and operationally excellent, it also assumes responsibility for the environment in which it operates and is accountable to its customers and the larger community. Financial, social and environmental responsibility is the foundation for all we do.

We put this philosophy into action by following these principles:

FINANCIAL AND/OR OPERATIONAL EXCELLENCE	SOCIAL	ENVIRONMENTAL
<p>We conduct all our operations in a fiscally responsible manner to maintain sustainable water systems.</p> <p>We proactively manage all water system infrastructure through regular maintenance, evaluation and improvements.</p> <p>We continually enhance our leadership position in the drinking water industry through the development of best practices, support of research and building our staff expertise.</p> <p>We regularly assess and report the performance of our operations to identify opportunities for improvements and efficiencies.</p>	<p>We provide timely, ongoing communication with our customers and we regularly identify and engage stakeholders in many aspects of water program planning.</p> <p>We ensure our operations have emergency response plans and capabilities to deal with situations in a timely and safe manner. This is done in cooperation with health authorities, regulators and other stakeholders.</p>	<p>We provide drinking water that consistently meets all provincial regulatory requirements and strive to meet recommended guidelines and aesthetic objectives.</p> <p>We provide source-to-tap management for water systems using an effective barrier approach.</p> <p>We work in cooperation with local, provincial and federal health and environmental agencies to advance industry initiatives and research to ensure long term safety and supply of drinking water.</p>

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QUALITY & EFFICIENCY

Protecting public health is the priority for EPCOR and water quality is monitored and continually enhanced through diligent operations and high quality standards. EPCOR employees work to ensure that water provided to the community meets or exceeds standards and expectations for safety, reliability and quality.

EPCOR French Creek is classified as a Class II Water Distribution system through the Environmental Operators Certification Program. Both operators are certified Level II Water Distribution Operators. This ensures the community receives the technical expertise and knowledge required to deliver a safe and reliable drinking supply.



Did you know...

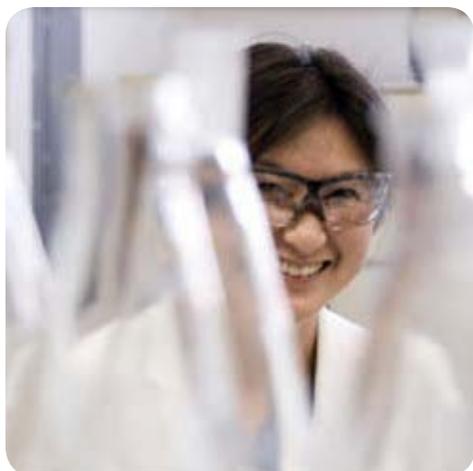
- In 2007, EPCOR conducted over 6,500 water quality tests.

HIGHLIGHTS

Since 2006, EPCOR has conducted an extensive review of the existing water system to assess its condition and identify upgrades necessary to operate and maintain the Utility to meet leading water utility standards. The following operating procedures and standards have been implemented or enhanced:

- Annual reporting of water quality information and system upgrades to Vancouver Island Health Authority consistent with provincial regulations
- A water quality monitoring program that includes more frequent water quality testing for metals to supplement the existing sampling for bacteria
- A water quality data storage/tracking/reporting tool
- Improved lab testing and training to broaden what is tested in the water effective October 1, 2006
- Operational programs such as uni-directional flushing to maintain water quality in the watermains throughout the system
- Equipment testing and calibration completed monthly by local operators, supported through the annual testing of all water lab equipment by certified technicians
- Annual inspection and maintenance of all fire hydrants to ensure fire protection standards are met
- Improved maintenance procedures through the use of current systems to schedule, log and track all preventive and corrective maintenance activities
- Implementation of Environmental, Safety, and Quality Assurance Audits





WATER QUALITY INFORMATION

Water quality is measured by analyzing the physical, chemical and microbial properties of the water. Health Canada has established science-based guidelines for drinking water known as The Canadian Drinking Water Guidelines (CDWG). These guidelines set the maximum acceptable concentrations (MAC) of chemical, microbial and radiological contaminants found in water. They also address aesthetic water quality issues such as colour, taste and odour. Water is considered clean and safe for consumption when the concentrations of the microbiological, chemical, radiological and physical characteristics are below the MAC of CDWG.

All testing undertaken to date indicates that the quality of French Creek's water is excellent relating to microbiological parameters, meeting all BC water quality regulatory requirements. However, manganese and iron levels occasionally exceed the aesthetic objective levels in the Canadian Drinking Water Guidelines (CDWG).

Iron	Manganese
<p>Iron is the most abundant heavy metal on earth; this mineral is also an essential element for human nutrition. Iron is usually insoluble and therefore the concentration of soluble iron in water is usually in trace quantities. The majority of our dietary intake of iron generally comes from food; the contribution of iron from drinking water consumption is comparatively insignificant. The CDWG AO (Aesthetic Objective) is therefore based on an aesthetic objective of 0.3 mg/L because iron in excess of 0.3mg/L can cause staining of plumbing and laundry.</p>	<p>Manganese, a mineral commonly occurring in surface or ground water, is not a health issue, but an aesthetic one. At levels > 0.15mg/L it can cause staining of plumbing, laundry and cause objectionable taste. In 2007, average concentration of Manganese in French Creek's distribution system was 0.035mg/L with the minimum of < 0.005mg/L and maximum at 0.14mg/L. The Manganese concentration range from the 15 wells and creek source water was < 0.005 mg/L to 0.297 mg/L with the average being 0.061mg/L.</p>

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TABLE 1: 2007 SUMMARY OF TREATED WATER QUALITY PARAMETERS

SUBSTANCE	UNIT OF MEASURE	MIN	MAX	2007 AVERAGE	CDWG STANDARD*
BACTERIA					
Total Coliforms	ctsc/100mL	< 1	< 1	< 1	0
E. Coli	cts/100mL	< 1	< 1	< 1	0
MINERALS					
Beryllium	mg/L	< 0.0001	< 0.0001	< 0.0001	NA
Bismuth	mg/L	< 0.0005	< 0.0005	< 0.0005	NA
Calcium	mg/L	23.6	40.4	32.3	NA
Potassium	mg/L	0.8	1.8	1.2	NA
Sodium	mg/L	8.4	20.4	10.7	200 (AO)
Sulphur	mg/L	1.7	9.2	4.9	NA
OTHER					
Free Chlorine	mg/L	0.3	1.4	0.7	NA
Temperature	°C	7	17	10.9	15 (AO)
Turbidity	NTU	0.1	1.6	0.5	1.0
TRACE METALS					
Aluminum	mg/L	< 0.005	0.014	0.007	0.1
Antimony	mg/L	< 0.002	< 0.0004	< 0.0002	0.006
Arsenic	mg/L	0.0003	0.0013	0.0005	0.01
Barium	mg/L	0.011	0.014	0.012	1
Boron	mg/L	0.012	0.047	0.0199	5
Chromium	mg/L	< 0.0005	0.0016	0.0009	0.05
Cobalt	mg/L	< 0.0001	0.0002	< 0.0001	NA
Copper	mg/L	0.012	0.104	0.041	≤ 1.0 (AO)
Iron	mg/L	< 0.1	< 0.1	< 0.1	0.3 (AO)
Lead	mg/L	0.0002	0.0007	0.0004	0.01
Lithium	mg/L	< 0.001	0.002	< 0.001	NA
Magnesium	mg/L	9.8	17.5	14.0	NA
Manganese	mg/L	< 0.005	0.078	0.035	≤ 0.05 (AO)
Molybdenum	mg/L	< 0.001	< 0.001	< 0.001	NA
Nickel	mg/L	< 0.0005	< 0.0005	< 0.0005	NA
Selenium	mg/L	< 0.0002	< 0.0002	< 0.0002	NA
Silicon	mg/L	8.18	13.8	11.2	NA
Silver	mg/L	< 0.0001	< 0.0001	< 0.0001	NA
Strontium	mg/L	0.093	0.186	0.116	NA
Thallium	mg/L	< 0.00005	< 0.00005	< 0.00005	NA
Tin	mg/L	< 0.001	< 0.001	< 0.001	NA
Titanium	mg/L	< 0.0005	< 0.0005	< 0.0005	NA
Vanadium	mg/L	0.0006	0.0047	0.0030	NA
Zinc	mg/L	0.007	0.070	0.019z	≤ 5 (AO)

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.

ABBREVIATIONS

cts	Counts
ACU	Apparent Colour Unit
N	Nitrogen
TCU	True Colour Unit
GM	Geometric mean
NTU	Nephelometric Turbidity Unit
CFU	Colony Forming Unit
<	Less Than Detection Limit

* Maximum allowed under Canadian Drinking Water Guideline requirements
 NA = Not applicable ; no limits set
 AO = Aesthetic objective

FRENCH CREEK WATER QUALITY

Since EPCOR began operating this utility in May 2006, many improvements have been implemented, including well rehabilitations, operational efficiencies and increased water quality monitoring. Construction of a new greensand filtration plant began in 2007, with expected completion in 2008. This will improve the water quality and should resolve the problems caused by high iron and manganese from some of the wells. Eliminating these problems may also result in more water becoming available from the wells, thus reducing the need to use French Creek as a source of water.

More information on manganese and iron is available at the following link:

http://www.hc-sc.gc.ca/ewh-semt/alt_formats/hecs-sesc/pdf/pubs/water-eau/doc-sup-appui/manganese/manganese_e.pdf. **Guidelines for Canadian Drinking Water Quality: Supporting Documentation: Iron**

French Creek monitoring program consists of daily, weekly, monthly and annual monitoring of chemical, physical and microbiological parameters in the reservoirs and distribution system. Routine daily monitoring of chlorine, turbidity and temperature is carried out at the Drew and Church Road Reservoirs. The distribution system is also monitored on a weekly and monthly basis for microbiological, chemical and physical parameters from seven sample locations chosen by the Drinking Water Officer to represent the water quality for the entire French Creek system.

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CUSTOMER CARE AND COMMUNITY

EPCOR Staff provides 24 hour emergency services, is available to answer customer questions and is committed to resolving customer concerns in a timely manner. A variety of information on your water supply including ways to reduce water use in your home and outside is available through the EPCOR website. EPCOR is proud to actively support the community and strives to build sustainable partnerships that enhance community life and promote wellness.

HIGHLIGHTS

In 2006 and 2007, EPCOR undertook a number of initiatives to improve customer service and communications. These initiatives include the following:

- Introduced a customer newsletter (mailed out with bills), providing customers with operational updates and efficiency, quality and water information
- Community event sponsorships: Pacific Salmon Foundation Oceanside Dinner & Auction; Oceanside Hospice Golf Tournament; French Creek Kids Dock Derby; Parksville Beach Fest; Fire & Ice Event; Oceanside Garden Show; Oceanside Emergency Social Services Conference; Code Blue Water Conservation Project
- Supported the United Way, with employee donations directed to local organizations of their choice
- Completed benchmark Customer Satisfaction Survey; Overall satisfaction with the Water Service Supplier = 84%, Overall Satisfaction with quality of tap water = 76%



FRENCH CREEK KID'S DOCK DERBY

Did you know...

- A single lawn sprinkler spraying 10 litres per minute uses more water in one hour than a combination of ten toilet flushes, two five-minute showers, two dishwasher loads and a full load of clothes.

Did you know...

Water wisely outdoors:

- set your sprinkler to deliver water in large droplets which are more resistant to evaporation;
- use timers to avoid over-watering;
- water before 10 am to eliminate evaporation on hot days;
- avoid watering during windy days.

Did you know...

- The average North American home loses 14% of its water through leaks.

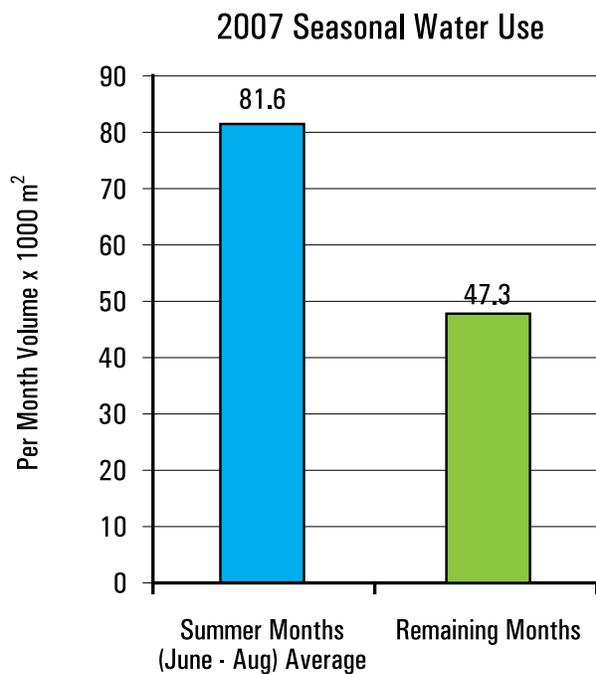
CUSTOMER SERVICE INDEX

ACTIVITY	2007		2006	
Customer Calls received, responded to and resolved (from May to December)	Low pressure calls:	5	Low pressure calls:	4
	Taste & Odour calls:	4	Taste & Odour calls:	3
	Water quality (brown water):	75	Water quality (brown water):	31
	Total:	84	Misc (information, billing, etc):	4
			Total:	42
Customer Satisfaction Index - Water Service Supplier - Quality of tap water			Benchmark survey:	
			84%	
			76%	
Community events supported	8		1	

REMEMBER! BE A LEAK SEEKER

A leaking toilet can waste more than 400 litres of water each day. Most toilet leaks are silent. To check for leaks, put a few drops of food colouring into your toilet tank. If, without flushing, the colour begins to appear in the bowl after 15–20 minutes you have a leak. Most internal leaks do not require a plumber to repair. Your local hardware store can assist you by recommending the best method of replacement or repair.

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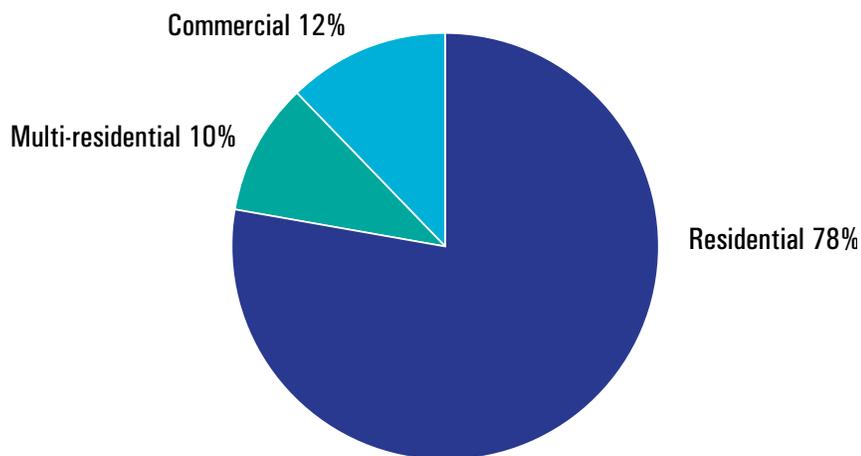
Did you know...

- Make sure sprinklers are not watering driveways or sidewalks; consider creating a low maintenance lawn or garden using native, drought tolerant plants.

Did you know...

- If your toilet is more than 10 years old, it is probably a water waster. Replacing it with a new, efficient low-flush toilet will use between 50% and 80% less water per flush, depending on the model you buy.

2007 Water Consumption by Customer Group





SAFETY

EPCOR is committed to the ongoing safety of our employees with the promotion of safe work practices incorporated into regular work activities with regular inspections conducted in all work areas. Lost time incidents are reported monthly and a target of zero is set annually.

HIGHLIGHTS

- Safety Performance Index (SPI) implemented to track safety and environmental activities at all facilities
- Zero Lost Time incidents in 2007
- Preventive talks, site inspections and safe work plans are incorporated into regular work activities to ensure promotion of safe work practices
- Hosted educational sessions on safety for staff, contractors and local government contacts
- Assessment by EPCOR Corporate Security and Safety to identify risks and recommend actions to encourage prevention of incidents
- Reviewed and updated EPCOR's Emergency Response Plan (ERP)

CAPITAL AND REHABILITATION PROGRAM

HIGHLIGHTS

During 2007, a number of capital projects were implemented, including:

System Controls/SCADA Upgrades

- Installation of remote monitoring equipment for monitoring of the water supply
- Enhanced level of warning in the event of incidents
- Installation of flow monitoring meters to gather data and assist in identifying water loss in the system
- Enhanced level of control of entire water system
- Enhanced monitoring of ground water wells

Security Upgrades

- Developed and implemented new security measures to protect EPCOR French Creek's water supply

Ongoing Capital and Maintenance Programs

- Continuation of meter replacement program
- Annual maintenance of all fire hydrants and air valves
- Introduced Uni-directional Flushing (UDF) program. UDF uses a hydraulic modeling system to direct water through specific pipes at high velocity. It uses less water, is more effective than regular flushing, and maximizes pressure throughout the system. It also includes inspection of all hydrants

Drew Road Water Treatment Plant

- Construction of greensand filtration water treatment plant to remove iron and manganese from the raw well water

Well Re-habilitation and Restoration

- Inspection and cleaning of production wells to optimize and sustain well operation

Water Treatment Plant Sewer Connection

- Connection of water plant's sewer line to regional sewer system





WHAT'S AHEAD

QUALITY AND EFFICIENCY

- Ongoing monitoring of French Creek's water supply includes regular maintenance of laboratory equipment and testing procedures to ensure quality of water
- Enhanced reliability of water provision by using around the clock remote monitoring
- Annual system maintenance and preventative programs
- Diligent operation and maintenance of distribution system facilities to ensure all regulatory requirements are met or exceeded
- Promotion of cross connection control awareness with customers and local government

CUSTOMER CARE AND COMMUNITY

- Monitoring, tracking and follow-up on all customer inquiries and concerns
- Customer communication to increase awareness of French Creek's water supply and the importance of using it wisely
- Continued community involvement and event sponsorship

SAFETY

- Commitment to EPCOR Safety Program, ensuring the safety of staff and the public at large
- Encouragement of staff to attain highest level of Environmental and Safety certification

CAPITAL AND REHABILITATION PROGRAM

- Further security updates to coincide with the completion of the SCADA controls project
- Ongoing capital maintenance program to ensure system reliability and efficiency

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