



FRENCH CREEK Water Service Area Annual Report 2009



Prepared by:

REGIONAL DISTRICT OF NANAIMO
Water Services Department

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Appendix A - Map of French Creek Water Service Area

Appendix B - Water Quality Testing Results

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1. Introduction

The following annual report describes the French Creek Water Service Area and summarizes the water quality and production data from 2009. This report also includes a summary of inquiries and complaints, completed and proposed maintenance activities, the Emergency Response Plan, and the Cross Connection Control Program.

This report is to be submitted to the Vancouver Island Health Authority by the Spring of 2010.

2. 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 within the Sandpiper subdivision. The water supply is chlorinated and stored in one reservoir. 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 In Place	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 has not been used for several years due to low production and high iron levels. Well #1 is expected to be converted to a monitoring well in 2010. 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 (68) are located throughout the water service area.

Watermain Material	Length of mains in NBP Water Service Area	Prevalence in Water 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. **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	RDN (in-house) Laboratory	Total coliforms, E.Coli Temperature, pH, Conductivity Chlorine residual, Salinity Total Dissolved Solids
Weekly (Health Dept. Requirement)	BC Centre for Disease Control	Total, Fecal coliforms,
Monthly	RDN (in-house) Laboratory	Iron, Manganese
Annual Source Water Testing	North Island Labs	Complete potability testing of each well
Annual System Water Testing	North Island Labs	Complete potability testing of distribution system

4. **Water Quality - Source Water and Distribution System**

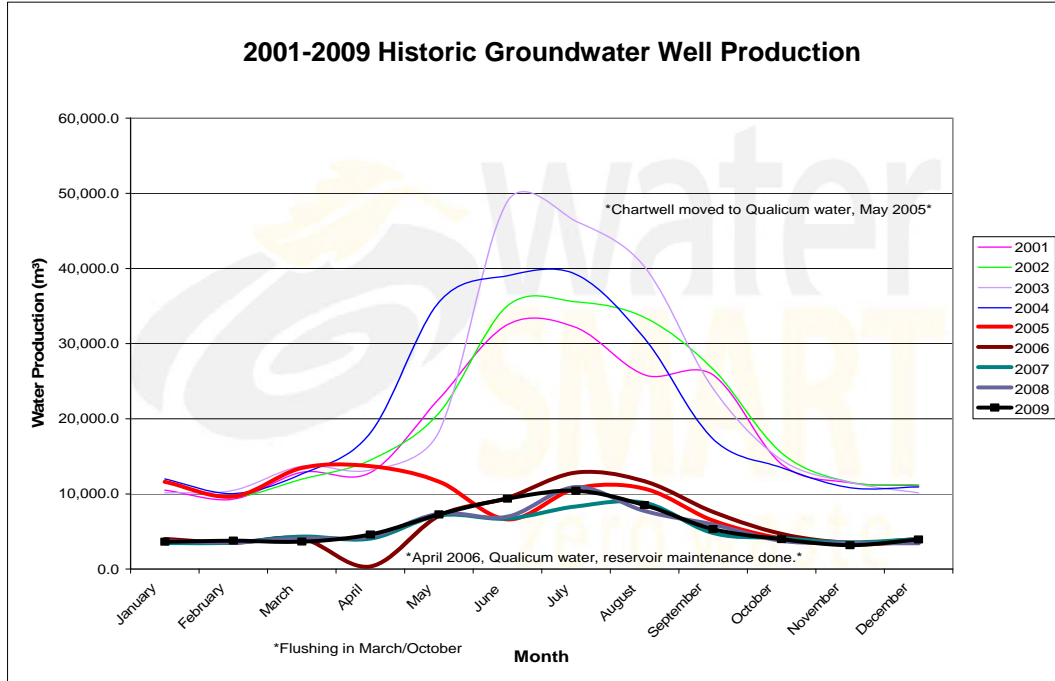
Up-to-date water quality reports and lab data are posted monthly on the RDN website at www.rdn.bc.ca in the WaterSmart section, under “Communities”. Tables of water quality testing results for both the source water and distribution system are provided at the end of this report under Appendix B.

5. **Water Quality Inquiries and Complaints**

A few complaints and inquiries were received from the French Creek water service area in 2009, and were typically related to isolated incidents of iron discolouration in the water.

6. Groundwater Production and Consumption

The monthly groundwater production in the French Creek Water Service Area for the past 9 years is shown in the chart below. There are 234 water service connections in French Creek. Groundwater production in 2009 was average in comparison to previous years.



Consumption

In the Fall/Winter of 2009, the average usage per home in French Creek was 0.55 cubic metres per day (121 imperial gallons). In the summer, the average water usage was 1.21 cubic metres per day (266 imperial gallons). Based on these figures, the annual consumption per capita is estimated to be 321 L/day (based on 2.4 people per household). This consumption is 7% less than the RDN system average of 345 L/day/capita for 2009.

7. 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 once annually in the Spring. 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.

8. Water Service Area Projects

8.1 2009 Completed Studies & Projects

- Completed keyless door entry installations at the Field Office and pumphouses;
- Completed annual B-service fire hydrant maintenance;

- Completed the design of a new chlorine room at the French Creek Main pumphouse;
- Carried out a comprehensive water conservation campaign (Team WaterSmart);
- Updated and improved the RDN website at www.rdn.bc.ca;
- Updated the Emergency Response Plan;
- Considered Scada options for implementation;
- Utilized the Auto E-message service to notify member residents of water service disruptions and upcoming maintenance activities;
- Developed a low-flush toilet incentive;
- Maintained a high level of water quality;
- Maintained excellent customer complaint and service request response times;
- Continued quality control through regular testing and monitoring of our Water Service Areas; and,
- Completed additional educational programs.

8.2 2010 Proposed Projects & Upgrades

- Convert one unused production well to a monitoring well;
- Review water treatment costs for the French Creek Water Service Area using the Nanoose Bay estimates;
- Complete the Cross-Connection Control bylaws, and establish a procedure for reviewing commercial and industrial properties for Water Service Area risks;
- Install chlorine analyzers in French Creek; and,
- Clean the service reservoir in French Creek.

9. **Emergency Response Plan**

The Emergency Response Plan (ERP) was reviewed and updated in 2009. A copy of the ERP is attached in Appendix C.

10. **Cross Connection Control**

A formalized Cross Connection Control Program was initiated in 2007. Cross connection controls in-place include dual check valves at each service connection, fire hydrant use permits, and water supply bylaws noting discontinued service if a threat to the water supply is perceived by staff.

In 2008, a review and comparison of successful cross-connection control programs in other small Water Service Areas nearby was undertaken. A database of commercial customers was set-up in order to keep track of the maintenance history of testable backflow prevention assemblies at each site. Three RDN Operations staff achieved Backflow Prevention Tester's certification.

The program in 2010 will include:

- A survey of existing and potential cross-connections,
- An audit of RDN-owned facilities in each water service area,
- The preparation of a draft bylaw to allow enforcement of the Cross Connection Control Program.

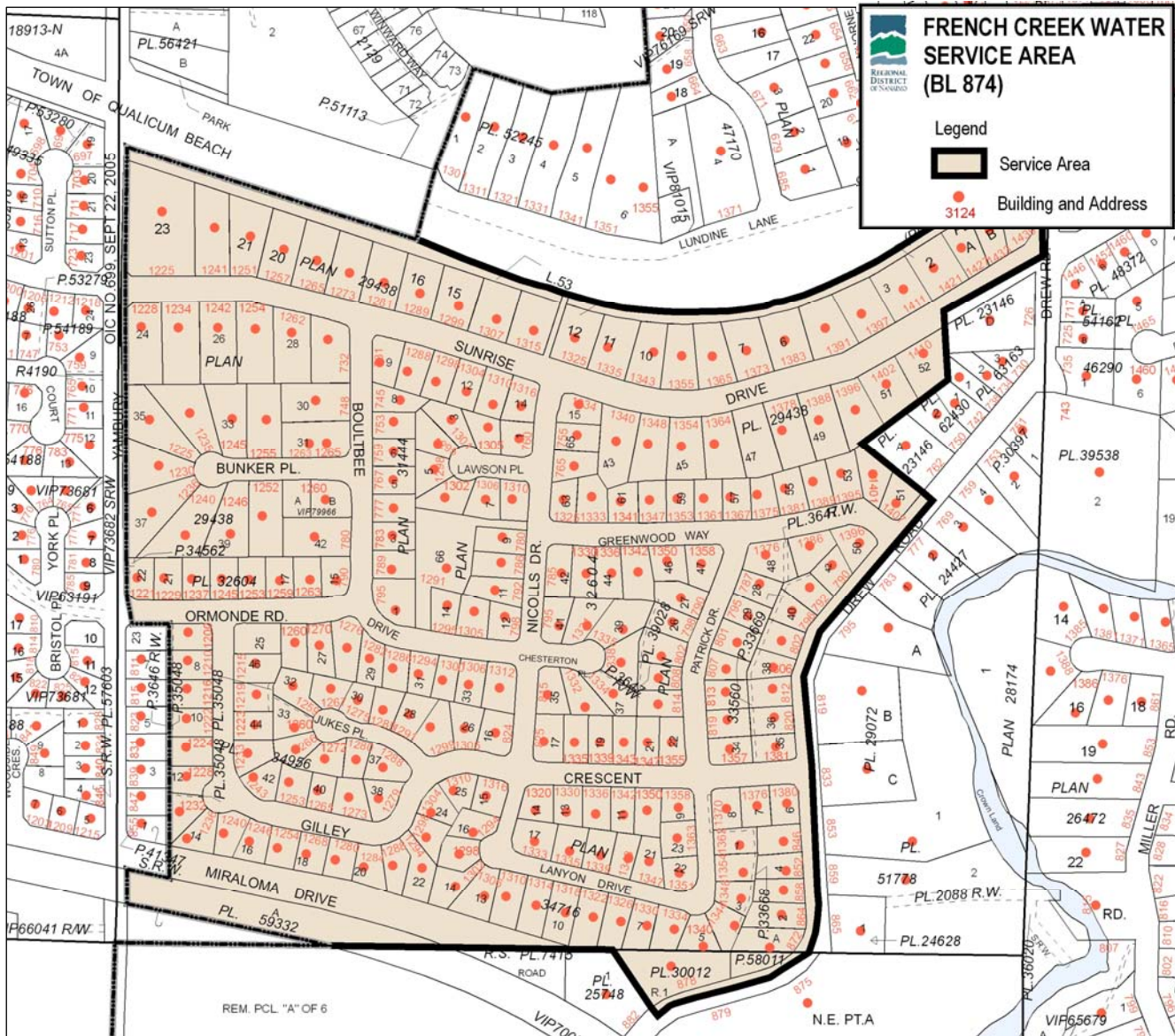
11. Closing

An annual report for the year 2010 will be prepared and submitted to the Vancouver Island Health Authority in the Spring of 2011. Annual reports are also available on our website at www.rdn.bc.ca in the WaterSmart section, under “Communities”.

APPENIDX A

**MAP OF FRENCH CREEK
WATER SERVICE AREA**

FRENCH CREEK WATER SERVICE AREA



APPENDIX B

WATER QUALITY TESTING RESULTS



Regional District of Nanaimo - Utilities Department

French Creek Water Analysis - Monthly Report



Date	Sample Location (Address)	Fecal Coli * Health Dep	Total Coli * Health Dep	Total Coli RDN	E Coli RDN	Temp ° C	pH	Cl ₂ ppm	TDS ppm	Sal %	Cond uS/cm	Fe ppm	Mn ppm
06-Jan	1334 Lanyon Dr	0	0	0	0	6	7	1.41	146	0.1	304	0.08	0.127
13-Jan	1228 Sunrise Dr	0	0	0	0	8	6.8	0.16	135	0.1	289		
20-Jan	1334 Lanyon Dr			0	0	6	6.8	0.28	135	0.1	289		
27-Jan	1228 Sunrise Dr			0	0	7	6.9	1.06	138	0.1	296		
	Average	0	0	0	0	6.8	6.9	0.73	138.5	0.1	294.5	0.08	0.127
	Maximum	0	0	0	0	8	7	1.41	146	0.1	304	0.08	0.127
	Minimum	0	0	0	0	6	6.8	0.16	135	0.1	289	0.08	0.127

Red font indicates non-compliance with Canadian Drinking Water Guidelines / BC Approved Water Quality Guidelines

Coliforms are measured in colony forming units (CFU) per 100 millilitres of water

* Yellow Column Coliform tests are done by Health Department

Green tests are completed by RDN

Comments:

Iron and manganese are found naturally in drinking water. Levels found in these samples are not a health concern.



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Date	Sample Location (Address)	Fecal Coli * Health Dep	Total Coli * Health Dep	Total Coli RDN	E Coli RDN	Temp ° C	pH	Cl ₂ ppm	TDS ppm	Sal %	Cond uS/cm	Fe ppm	Mn ppm
03-Feb	1228 Sunrise Dr	0	0	0	0	8	6.9	0.08	136	0.1	290	0.11	0.113
10-Feb	1334 Lanyon Dr	0	0	0	0	6	7.2	0.11	133	0.1	286		
17-Feb	1228 Sunrise Dr			0	0	8	6.7	0.13	136	0.1	290		
24-Feb	1334 Lanyon Dr			0	0	6	6.8	0.11	134	0.1	284		
	Average	0	0	0	0	7.0	6.9	0.11	134.8	0.1	287.5	0.11	0.113
	Maximum	0	0	0	0	8	7.2	0.13	136	0.1	290	0.11	0.113
	Minimum	0	0	0	0	6	6.7	0.08	133	0.1	284	0.11	0.113

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03-Mar	1228 Sunrise Dr	0	0	0	0	9	6.9	0.12	134	0.1	286	0.28	0.133
10-Mar	1334 Lanyon Dr	0	0	0	0	6	7.3	0.1	134	0.1	286		
18-Mar	1228 Sunrise Dr			0	0	9	6.9	0.11	135	0.1	287		
25-Mar	1334 Lanyon Dr			0	0	8	7	0.13	134	0.1	283		
	Average	0	0	0	0	8.0	7.0	0.12	134.3	0.1	285.5	0.28	0.133
	Maximum	0	0	0	0	9	7.3	0.13	135	0.1	287	0.28	0.133
	Minimum	0	0	0	0	6	6.9	0.1	134	0.1	283	0.28	0.133

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Apr-09													
15-Apr	1228 Sunrise	0	0										
22-Apr	1334 Lanyon Dr	0	0	0	0	10	6.7	0.06	142	0.1	299		
29-Apr	1228 Sunrise					10	6.8	0.06	142	0.1	299		
	Average	0	0	0	0	10.0	6.8	0.06	142.0	0.1	299.0	#DIV/0!	#DIV/0!
	Maximum	0	0	0	0	10	6.8	0.06	142	0.1	299	0	0
	Minimum	0	0	0	0	10	6.7	0.06	142	0.1	299	0	0

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05-May	1228 Sunrise Dr	0	0	0	0	11	6.8	0.05	136	0.1	287	0.13	0.161
12-May	1334 Lanyon Dr	0	0	0	0	12	6.8	0.12	146	0.1	308		
27-May	1228 Sunrise Dr			0	0	12	6.8	0.15	148	0.1	310		
Average		0	0	0	0	11.7	6.8	0.11	143.3	0.1	301.7	0.13	0.161
Maximum		0	0	0	0	12	6.8	0.15	148	0.1	310	0.13	0.161
Minimum		0	0	0	0	11	6.8	0.05	136	0.1	287	0.13	0.161

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02-Jun	1228 Sunrise Dr	0	0	0	0	11	6.9	0.64	144	0.1	304	0.15	0.174
09-Jun	1334 Lanyon Dr	0	0	0	0	16	6.9	0.09	142	0.1	298		
	Average	0	0	0	0	13.5	6.9	0.37	143.0	0.1	301.0	0.15	0.174
	Maximum	0	0	0	0	16	6.9	0.64	144	0.1	304	0.15	0.174
	Minimum	0	0	0	0	11	6.9	0.09	142	0.1	298	0.15	0.174

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07-Jul	1228 Sunrise Dr	0	0	0	0	13	6.7	0.16	142	0.1	299	0.12	0.224
15-Jul	1334 Lanyon Dr	0	0	0	0	17	6.9	0.14	143	0.1	301		
29-Jul	1228 Sunrise Dr			0	0	13	6.9	0.13	149	0.1	310		
	Average	0	0	0	0	14.3	6.8	0.14	144.7	0.1	303.3	0.12	0.224
	Maximum	0	0	0	0	17	6.9	0.16	149	0.1	310	0.12	0.224
	Minimum	0	0	0	0	13	6.7	0.13	142	0.1	299	0.12	0.224

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Date Aug-09	Sample Location (Address)	Fecal Coli * Health Dep	Total Coli * Health Dep	Total Coli RDN	E Coli RDN	Temp ° C	pH	Cl ₂ ppm	TDS ppm	Sal %	Cond uS/cm	Fe ppm	Mn ppm
05-Aug	1228 Sunrise Dr	0	0	0	0	15	6.9	0.19	142	0.1	299	0.14	0.143
12-Aug	1334 Lanyon	0	0	0	0	20	6.7	0.07	141	0.1	296		
19-Aug	1228 Sunrise Dr			0	0								
25-Aug	1334 Lanyon			0	0	19	7.2	0.13	146	0.1	306		
	Average	0	0	0	0	18.0	6.9	0.13	143.0	0.1	300.3	0.14	0.143
	Maximum	0	0	0	0	20	7.2	0.19	146	0.1	306	0.14	0.143
	Minimum	0	0	0	0	15	6.7	0.07	141	0.1	296	0.14	0.143

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01-Sep	1334 Lanyon	0	0					0.09					
09-Sep	1228 Sunrise Dr	0	0			13	7.3	0.45	145	0.1	306	0.11	0.181
15-Sep	1334 Lanyon			0	0	18	6.9	0.09	145	0.1	305		
22-Sep	1334 Lanyon			0	0	18	7	0.1	143	0.1	301		
29-Sep	1228 Sunrise Dr			0	0	11	6.8	0.56	143	0.1	302		
	Average	0	0	0	0	15.0	7.0	0.26	144.0	0.1	303.5	0.11	0.181
	Maximum	0	0	0	0	18	7.3	0.56	145	0.1	306	0.11	0.181
	Minimum	0	0	0	0	11	6.8	0.09	143	0.1	301	0.11	0.181

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05-Oct	1334 Lanyon Dr	0	0	0	0	16	6.7	0.07	146	0.1	308	0.04	
14-Oct	1228 Sunrise Dr	0	0	0	0	12	7.1	0.28	133	0.1	279		0.178
20-Oct	1334 Lanyon Dr			0	0	15	6.8	0.08	146	0.1	306		
28-Oct	1228 Sunrise Dr			0	0	13	7.1	0.12	144	0.1	303		
	Average	0	0	0	0	14.0	6.9	0.14	142.3	0.1	299.0	0.04	0.178
	Maximum	0	0	0	0	16	7.1	0.28	146	0.1	308	0.04	0.178
	Minimum	0	0	0	0	12	6.7	0.07	133	0.1	279	0.04	0.178

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04-Nov	1228 Sunrise Dr	0	0	0	0	11	6.7	0.12	142	0.1	298	0.09	0.15
10-Nov	1334 Lanyon Dr	0	0	0	0	11	6.9	0.06	144	0.1	304		
17-Nov	1228 Sunrise Dr			0	0	10	6.8	0.46	136	0.1	288		
24-Nov	1334 Lanyon Dr			0	0	9	7	0.06	143	0.1	301		
Average		0	0	0	0	10.3	6.9	0.18	141.3	0.1	297.8	0.09	0.15
Maximum		0	0	0	0	11	7	0.46	144	0.1	304	0.09	0.15
Minimum		0	0	0	0	9	6.7	0.06	136	0.1	288	0.09	0.15

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Date Dec-09	Sample Location (Address)	Fecal Coli * Health Dep	Total Coli * Health Dep	Total Coli RDN	E Coli RDN	Temp ° C	pH	Cl ₂ ppm	TDS ppm	Sal %	Cond uS/cm	Fe ppm	Mn ppm
02-Dec	1228 Sunrise Dr	0	0	0	0	9	6.9	0.29	135	0.1	287	0.1	0.147
08-Dec	1334 Lanyon Dr	0	0	0	0	8	6.9	0.04	137	0.1	292		
22-Dec	1228 Sunrise Dr			0	0	8	7.4	1.24	137	0.1	290		
30-Dec	1334 Lanyon Dr			0	0	8	6.8	0.49	137	0.1	290		
	Average	0	0	0	0	8.3	7.0	0.52	136.5	0.1	289.8	0.10	0.147
	Maximum	0	0	0	0	9	7.4	1.24	137	0.1	292	0.1	0.147
	Minimum	0	0	0	0	8	6.8	0.04	135	0.1	287	0.1	0.147

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French Creek Well Water Analysis Results

French Creek Well #1: 1225 Sunrise Drive

Canadian Drinking Water Guidelines Package

MAC=Maximum Acceptable Concentration IMAC= Interim Maximum Acceptable Concentration AO= Aesthetic Objective.

CDWG=Canadian Drinking Water Guidelines BCAWQG=British Columbia Approved Water Quality Guidelines

Red font indicates non-compliance with Canadian Drinking Water Guidelines

* raw well water



Parameter	Water Quality Guidelines				2000	2001	16-Oct 2002	22-Oct 2003	26-Oct 2004	19-Oct 2005	24-Oct 2006	24-Oct 2007	08-Oct 2008	14-Oct 2009	2010
	Units	CDWG	BCAWQG												
Color	CU	15	<=15	AO	7		12	off	off	off	off	off	off	off	off
Conductivity	µS	700		MAC	248		292	off	off	off	off	off	off	off	off
Total Dissolved Solids	mg/L	500	<=500	AO	166		173	off	off	off	off	off	off	off	off
Hardness (CaCO3)	mg/L	80-100	<=500	AO	138.7		120.1	off	off	off	off	off	off	off	off
pH	pH units	6.5-8.5	6.5-8.5	AO	7.89		7.89	off	off	off	off	off	off	off	off
Turbidity	NTU's	5	1	MAC	0.58		0.6	off	off	off	off	off	off	off	off
Alkalinity	mg/L				135		147	off	off	off	off	off	off	off	off
Chloride	mg/L	250	<=250	AO	2.39		2.48	off	off	off	off	off	off	off	off
Fluoride	mg/L	1.5	1.5	MAC	0.13		0.14	off	off	off	off	off	off	off	off
Sulfate	mg/L	500	<=500	AO	3.67		3.28	off	off	off	off	off	off	off	off
Nitrate (N)	mg/L	10	10	MAC	<0.002		<0.01	off	off	off	off	off	off	off	off
Nitrite (N)	mg/L	1			<0.006		<0.01	off	off	off	off	off	off	off	off
T-Aluminum	mg/L		0.2	MAC	0.011		<0.005	off	off	off	off	off	off	off	off
T-Antimony	mg/L		0.006	MAC			<0.0002	off	off	off	off	off	off	off	off
T-Arsenic	mg/L	0.025	0.025	IMAC	<0.01		0.0012	off	off	off	off	off	off	off	off
T-Barium	mg/L	1.0	1	MAC	0.0211		0.022	off	off	off	off	off	off	off	off
T-Boron	mg/L	5.0	5	MAC	<0.002		0.019	off	off	off	off	off	off	off	off
T-Cadmium	mg/L	0.005			<0.0006		<0.00001	off	off	off	off	off	off	off	off
T-Calcium	mg/L				32.8		27.8	off	off	off	off	off	off	off	off
T-Chromium	mg/L	0.05	0.05	MAC	<0.0009		<0.0005	off	off	off	off	off	off	off	off
T-Copper	mg/L	1.0	<=1	MAC	0.001		<0.001	off	off	off	off	off	off	off	off
T-Iron	mg/L	0.3	<=0.3	AO	0.621		0.5	off	off	off	off	off	off	off	off
T-Lead	mg/L	0.01	0.01	MAC	<0.002		<0.0003	off	off	off	off	off	off	off	off
T-Magnesium	mg/L		<=700	AO	13.8		12.3	off	off	off	off	off	off	off	off
T-Manganese	mg/L	0.05	<=0.05	AO	0.302		0.282	off	off	off	off	off	off	off	off
T-Mercury	mg/L	0.001	0.001	MAC	<0.0001		<0.0002	off	off	off	off	off	off	off	off
T-Potassium	mg/L				2.3		2	off	off	off	off	off	off	off	off
T-Selenium	mg/L	0.01	0.01	MAC	<0.004		<0.0002	off	off	off	off	off	off	off	off
T-Sodium	mg/L	200	<=200	AO	11.6		10.5	off	off	off	off	off	off	off	off
T-Uranium	mg/L	0.1	0.1	MAC	<0.06		<0.0005	off	off	off	off	off	off	off	off
T-Zinc	mg/L	5	<5	AO	0.017		0.002	off	off	off	off	off	off	off	off
								off	off	off	off	off	off	off	off
Total Coliform	cfu/100ml	<1	<1	cfu/100ml	*489			off	off	off	off	off	off	off	off
Fecal Coliform	cfu/100ml	<1	<1	cfu/100ml	<1			off	off	off	off	off	off	off	off
E.coli	cfu/100ml	<1	<1	cfu/100ml				off	off	off	off	off	off	off	off

Note: Total coliforms can be an indicator of adverse water quality if the result in the re-sample is confirmed positive. (United States Environmental Protection Agency (EPA), 2008) RDN Water samples are always tested for Fecal coliform bacteria at the same time as Total coliforms to rule out the presence of harmful pathogens.

*Resampled and had <1 for all Coliforms

French Creek Well Water Analysis Results

French Creek Well #2: Behind 1221 Ormonde Road

Canadian Drinking Water Guidelines Package

MAC=Maximum Acceptable Concentration IMAC= Interim Maximum Acceptable Concentration AO= Aesthetic Objective
 CDWG=Canadian Drinking Water Guidelines BCAWQG=British Columbia Approved Water Quality Guidelines

Red font indicates non-compliance with Canadian Drinking Water Guidelines

* raw well water



Parameter					2000	2001	16-Oct 2002	22-Oct 2003	26-Oct 2004	19-Oct 2005	24-Oct 2006	24-Oct 2007	08-Oct 2008	14-Oct 2009	2010
	Units	CDWG	BCAWQG												
Color	CU	15	</=15	AO	<5		4	<5	<5	6	<5	<5	<5		
Conductivity	µS	700		MAC	267		289	285	294	283	285	280	315		
Total Dissolved Solids	mg/L	500	</=500	AO	179		160	180	180	164	6	247	186		
Hardness (CaCO3)	mg/L	80-100	</=500	AO	132.7		124.2	134.0	140.0	130.0	63.0	130.0	150.0		
pH	pH units	6.5-8.5	6.5-8.5	AO	8.11		8.14	7.90	8.10	8.10	8.20	8.08	7.90		
Turbidity	NTU's	5	1	MAC	0.29		0.11	0.54	<0.50	<0.50	<0.50	<0.50	<0.50		
Alkalinity	mg/L				126		132	130	140	140	130	130	120		
Chloride	mg/L	250	</=250	AO	2.7		2.58	3.3	3.3	3.1	3.3	3.7	5		
Fluoride	mg/L	1.5	1.5	MAC	0.17		0.13	<0.60	<1.00	<1.00	<1.00	<1.00	<1.00		
Sulfate	mg/L	500	</=500	AO	14.89		12.88	1.70	16.50	11.80	9.60	9.70	21.30		
Nitrate (N)	mg/L	10	10	MAC	<0.002		<0.01	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10		
Nitrite (N)	mg/L	1			<0.006		<0.01	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10		
T-Aluminum	mg/L		0.2	MAC	0.015		0.009	<0.005	0.010	0.046	<0.01	0.009	0.013		
T-Antimony	mg/L		0.006	MAC			<0.0002	<0.0002	<0.0002	<0.0002	0.0004	<0.0002	<0.0002		
T-Arsenic	mg/L	0.025	0.025	IMAC	<0.01		<0.0002	<0.0002	<0.0002	0.0002	<0.0004	0.0002	<0.0002		
T-Barium	mg/L	1.0	1	MAC	0.0147		0.015	0.015	0.016	0.015	0.020	0.016	0.018		
T-Boron	mg/L	5.0	5	MAC	<0.002		1.015	0.018	0.022	0.020	0.022	0.021	0.021		
T-Cadmium	mg/L	0.005			<0.0006		<0.00001	<0.00001	<0.00001	<0.00001	<0.00002	0.00001	<0.00001		
T-Calcium	mg/L				32.7		29.8	32.1	34.2	32.2	15.4	30.8	36.2		
T-Chromium	mg/L	0.05	0.05	MAC	<0.0009		<0.0005	<0.0005	<0.0005	<0.0005	<0.001	<0.0005	<0.0004		
T-Copper	mg/L	1.0	</=1	MAC	0.002		0.010	0.002	0.002	0.015	<0.002	0.005	0.005		
T-Iron	mg/L	0.3	</=0.3	AO	0.142		<0.1	0.2	0.1	0.1	<0.1	0.1	0.1		
T-Lead	mg/L	0.01	0.01	MAC	<0.002		0.0005	0.0001	0.0001	0.0018	<0.0002	0.0012	0.0003		
T-Lithium	mg/L														
T-Magnesium	mg/L		</=700	AO	12.4		12.1	13.0	13.7	11.8	6.0	11.7	14.0		
T-Manganese	mg/L	0.05	</=0.05	AO	0.132		0.126	0.125	0.132	0.130	0.060	0.119	0.137		
T-Mercury	mg/L	0.001	0.001	MAC	<0.0001		<0.0002	<0.0002	<0.0002	<0.0001	<0.0001	<0.0001	<0.01		
T-Nickel	mg/L														
T-Phosphorus	mg/L														
T-Potassium	mg/L				2.1		2.0	2.2	2.3	2.3	1.1	2.2	2.3		
T-Selenium	mg/L	0.01	0.01	MAC	<0.004		<0.0002	<0.0002	<0.0002	<0.0002	<0.0004	<0.0002	<0.0006		
T-Silver	mg/L														
T-Sodium	mg/L	200	</=200	AO	8.3		7.90	7.90	8.60	9.00	4.50	8.80	8.69		
T-Uranium	mg/L	0.1	0.1	MAC	<0.06		<0.0005	<0.0005	<0.0005	<0.0005	<0.001	<0.0005	<0.0004		
T-Zinc	mg/L	5	<5	AO	0.0367		0.031	0.021	0.029	0.026	0.007	0.074	0.016		
Total Coliform	cfu/100ml	<1	<1	cfu/100ml	*163				*50	<1	<1	<1	<1		
Fecal Coliform	cfu/100ml	<1	<1	cfu/100ml	<1				<1	<1	<1	<1	<1		
E.coli	cfu/100ml	<1	<1	cfu/100ml						<1	<1	<1	<1		

*Resampled and had <1 for all Coliforms

Note: Total coliforms can be an indicator of adverse water quality if the result in the re-sample is confirmed positive. (United States Environmental Protection Agency (EPA), 2008) RDN Water samples are always tested for Fecal coliform bacteria at the same time as Total coliforms to rule out the presence of harmful pathogens.

French Creek Well Water Analysis Results

French Creek Well #4: SE of 785 York Place

Canadian Drinking Water Guidelines Package



MAC=Maximum Acceptable Concentration IMAC= Interim Maximum Acceptable Concentration AO= Asthetic Objective.

CDWG=Canadian Drinking Water Guidelines

BCAWQG=British Columbia Approved Water Quality Guidelines

Red font indicates non-compliance with Canadian Drinking Water Guidelines

* raw well water

Parameter					2000	2001	16-Oct 2002	22-Oct 2003	26-Oct 2004	19-Oct 2005	24-Oct 2006	24-Oct 2007	08-Oct 2008	14-Oct 2009	2010
	Units	CDWG	BCAWQG												
Color	CU	15	</=15	AO	<5		4	<5	<5	8	<5	5	<5		
Conductivity	µS		700	MAC	271		300	310	310	304	295	297	317		
Total Dissolved Solids	mg/L	500	</=500	AO	182		173	173	190	146	200	193	152		
Hardness (CaCO3)	mg/L	80-100	</=500	AO	135.9		130	140	150	136	130	130	150		
pH	pH units	6.5-8.5	6.5-8.5	AO	8.06		8.18	7.94	7.8	8.1	8.2	8.15	7.9		
Turbidity	NTU's	5	1	MAC	<0.05		0.1	0.56	<0.5	<0.5	<0.5	<0.5	<0.5		
Alkalinity	mg/L				134		143	150	150	150	140	130	150		
Chloride	mg/L	250	</=250	AO	2.52		2.49	3.2	3.1	3.5	3.9	3.4	5.2		
Fluoride	mg/L	1.5	1.5	MAC	0.12		0.13	<0.6	<1.0	<1.0	<1.0	<1.0	<1.0		
Sulfate	mg/L	500	</=500	AO	7.26		13.62	12	13.6	13.2	11.1	9.9	21.3		
Nitrate (N)	mg/L	10	10	MAC	<0.002		<0.01	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1		
Nitrite (N)	mg/L	1			<0.006		<0.01	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1		
T-Aluminum	mg/L		0.2	MAC	0.015		0.005	<0.005	0.006	<0.005	0.006	<0.005	0.01		
T-Antimony	mg/L		0.006	MAC			<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002		
T-Arsenic	mg/L	0.025	0.025	IMAC	<0.01		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002		
T-Barium	mg/L	1.0	1	MAC	0.0129		0.013	0.014	0.014	0.014	0.013	0.014	0.017		
T-Boron	mg/L	5.0	5	MAC	<0.002		0.016	0.021	0.024	0.023	0.024	0.024	0.019		
T-Cadmium	mg/L	0.005			<0.0006		<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001		
T-Calcium	mg/L				33		30.8	32.9	34.8	33.2	30.8	31.6	36.1		
T-Chromium	mg/L	0.05	0.05	MAC	<0.0009		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.003	<0.0004		
T-Copper	mg/L	1.0	</=1	MAC	<0.001		0.001	<0.001	0.004	<0.001	0.002	0.002	0.002		
T-Iron	mg/L	0.3	</=0.3	AO	0.134		0.1	0.1	0.1	0.1	0.1	0.2	0.08		
T-Lead	mg/L	0.01	0.01	MAC	<0.002		<0.0001	0.0001	0.0004	0.0002	0.0008	0.0008	0.0002		
T-Magnesium	mg/L		</=700	AO	13		12.9	14	14.6	12.8	12.6	12.5	13.9		
T-Manganese	mg/L	0.05	</=0.05	AO	0.15		0.147	0.142	0.159	0.15	0.14	0.143	0.129		
T-Mercury	mg/L	0.001	0.001	MAC	<0.0001		<0.0002	<0.0002	<0.0002	<0.0001	<0.0001	<0.0001	<0.01		
T-Potassium	mg/L				2.3		2.3	2.4	2.6	2.5	2.5	2.4	2.2		
T-Selenium	mg/L	0.01	0.01	MAC	<0.004		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0006		
T-Sodium	mg/L	200	</=200	AO	10.2		9.4	9.6	10.2	10.6	10.2	10	8.57		
T-Uranium	mg/L	0.1	0.1	MAC	<0.06		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0004		
T-Zinc	mg/L	5	<5	AO	0.0107		0.005	0.014	0.015	0.015	0.009	0.043	0.008		
Total Coliform	cfu/100ml	<1	<1	cfu/100ml	*39				<1	<1	<1	<1	<1		
Fecal Coliform	cfu/100ml	<1	<1	cfu/100ml	<1				<1	<1	<1	<1	<1		
E.coli	cfu/100ml	<1	<1	cfu/100ml						<1	<1	<1	<1		

*Resampled and had <1 for all Coliforms

Note: Total coliforms can be an indicator of adverse water quality if the result in the re-sample is confirmed positive. (United States Environmental Protection Agency (EPA), 2008) RDN Water samples are always tested for Fecal coliform bacteria at the same time as Total coliforms to rule out the presence of harmful pathogens.

French Creek Well Water Analysis Results

French Creek Well #5: 1140 Sunrise Drive

Canadian Drinking Water Guidelines Package



MAC=Maximum Acceptable Concentration IMAC= Interim Maximum Acceptable Concentration AO= Asthetic Objective
 CDWG=Canadian Drinking Water Guidelines BCAWQG=British Columbia Approved Water Quality Guidelines

Red font indicates non-compliance with Canadian Drinking Water Guidelines

* raw well water

Parameter	Water Quality Guidelines				2000	2001	16-Oct 2002	22-Oct 2003	26-Oct 2004	19-Oct 2005	24-Oct 2006	24-Oct 2007	08-Oct 2008	14-Oct 2009	2010
	Units	CDWG	BCAWQG												
Color	CU	15	</=15	AO	25		28	20	25	30	14	18	35	off	
Conductivity	µS		700	MAC	270		293	321	312	272	258	262	263	off	
Total Dissolved Solids	mg/L	500	</=500	AO	181		173	167	210	164	190	253	176	off	
Hardness (CaCO3)	mg/L	80-100	</=500	AO	103.8		100	106	110	89	86	86	87	off	
pH	pH units	6.5-8.5	6.5-8.5	AO	7.66		7.61	7.62	7.7	8.1	7.8	8.01	7.7	off	
Turbidity	NTU's	5	1	MAC	0.43		0.87	1.64	1.8	1.6	1	1.5	0.9	off	
Alkalinity	mg/L				135		129	150	160	140	130	130	130	off	
Chloride	mg/L	250	</=250	AO	7.06		9.5	11.3	10.3	3.1	5.7	5.4	7.2	off	
Fluoride	mg/L	1.5	1.5	MAC	0.14		0.15	<0.6	<1.0	<1.0	<1.0	<1.0	<1.0	off	
Sulfate	mg/L	500	</=500	AO	0.12		0.17	1.8	<2	11.2	<2.0	<2.0	<2.0	off	
Nitrate (N)	mg/L	10	10	MAC	<0.002		<0.01	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	off	
Nitrite (N)	mg/L	1			<0.006		<0.01	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	off	
T-Aluminum	mg/L		0.2	MAC	0.013		<0.005	<0.005	0.024	0.065	0.011	0.024	0.009	off	
T-Antimony	mg/L		0.006	MAC			<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	off	
T-Arsenic	mg/L	0.025	0.025	IMAC	<0.01		0.0008	0.0009	0.0011	0.001	0.0007	0.0008	0.0005	off	
T-Barium	mg/L	1.0	1	MAC	0.0066		0.007	0.008	0.008	0.006	0.007	0.007	0.006	off	
T-Boron	mg/L	5.0	5	MAC	0.02		0.039	0.062	0.07	0.052	0.058	0.056	0.051	off	
T-Cadmium	mg/L	0.005			<0.0006		<0.00001	0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	off	
T-Calcium	mg/L				24.9		23.4	25	27	21.5	20.4	20.8	20.5	off	
T-Chromium	mg/L	0.05	0.05	MAC	<0.0009		<0.0005	<0.0005	<0.0005	0.0005	<0.0005	0.0007	0.0006	off	
T-Copper	mg/L	1.0	</=1	MAC	<0.001		0.003	0.013	<0.001	0.004	<0.001	0.002	0.001	off	
T-Iron	mg/L	0.3	</=0.3	AO	0.882		0.9	1	1.1	0.9	0.9	1.1	0.73	off	
T-Lead	mg/L	0.01	0.01	MAC	<0.002		0.0001	0.0017	0.0002	0.0014	0.0004	0.0006	0.0004	off	
T-Lithium	mg/L													off	
T-Magnesium	mg/L		</=700	AO	10.1		10.1	10.6	11.2	8.5	8.4	8.2	8.69	off	
T-Manganese	mg/L	0.05	</=0.05	AO	0.256		0.246	0.235	0.271	0.211	0.198	0.205	0.182	off	
T-Mercury	mg/L	0.001	0.001	MAC	<0.0001		<0.0002	<0.0002	<0.0002	<0.0001	<0.0001	<0.0001	<0.01	off	
T-Nickel	mg/L													off	
T-Phosphorus	mg/L													off	
T-Potassium	mg/L				2.7		2.6	2.7	2.9	2.6	2.6	2.5	2.4	off	
T-Selenium	mg/L	0.01	0.01	MAC	<0.004		<0.0002	<0.0002	<0.0002	0.0002	<0.0002	<0.0002	<0.0006	off	
T-Silver	mg/L													off	
T-Sodium	mg/L	200	</=200	AO	23.5		21.8	23	26	21.5	20.6	20.4	20.3	off	
T-Uranium	mg/L	0.1	0.1	MAC	<0.06		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0004	off	
T-Zinc	mg/L	5	<5	AO	0.0049		0.003	0.032	0.027	0.062	0.033	0.047	0.03	off	
Total Coliform	cfu/100ml	<1	<1	cfu/100ml	*36		<1		<1	<1	<1	*1	<1	off	
Fecal Coliform	cfu/100ml	<1	<1	cfu/100ml	<1		<1		<1	<1	<1	<1	<1	off	
E.coli	cfu/100ml	<1	<1	cfu/100ml							<1	<1	<1	off	

Note: Total coliforms can be an indicator of adverse water quality if the result in the re-sample is confirmed positive. (United States Environmental Protection Agency (EPA), 2008) RDN Water samples are always tested for Fecal coliform bacteria at the same time as Total coliforms to rule out the presence of harmful pathogens.

*Resampled and had <1 for all Coliforms

French Creek Well Water Analysis Results

French Creek Well #6: 1108 Wellington Drive

Canadian Drinking Water Guidelines Package

MAC=Maximum Acceptable Concentration IMAC= Interim Maximum Acceptable Concentration AO= Asthetic Objective.
 CDWG=Canadian Drinking Water Guidelines BCAWQG=British Columbia Approved Water Quality Guidelines

Red font indicates non-compliance with Canadian Drinking Water Guidelines

* raw well water



Parameter	Water Quality Guidelines				2000	2001	16-Oct 2002	22-Oct 2003	26-Oct 2004	19-Oct 2005	24-Oct 2006	24-Oct 2007	08-Oct 2008	14-Oct 2009	2010
	Units	CDWG	BCAWQG												
Color	CU	15	<=15	AO	25		23	19	16	27	11	19	31	off	
Conductivity	µS		700	MAC	252		247	264	237	226	219	225	224	off	
Total Dissolved Solids	mg/L	500	<=500	AO	169		147	133	150	220	170	140	162	off	
Hardness (CaCO3)	mg/L	80-100	<=500	AO	97.3		90.2	91	97	83	80	81	84	off	
pH	pH units	6.5-8.5	6.5-8.5	AO	7.64		7.61	7.56	7.7	7.9	7.8	8	7.6	off	
Turbidity	NTU's	5	1	MAC	0.62		0.87	1.3	1.1	1.6	1.8	3	0.9	off	
Alkalinity	mg/L				121		121	130	130	120	110	110	110	off	
Chloride	mg/L	250	<=250	AO	4.05		3.8	5	4.3	4.2	4.5	3.9	5.5	off	
Fluoride	mg/L	1.5	1.5	MAC	0.14		0.17	<0.6	<1.0	<1.0	<1.0	<1.0	<1.0	off	
Sulfate	mg/L	500	<=500	AO	0.09		<0.2	1.7	<2	<2	<2.0	<2.0	<2.0	off	
Nitrate (N)	mg/L	10	10	MAC	<0.002		<0.01	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	off	
Nitrite (N)	mg/L	1			<0.006		<0.01	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	off	
T-Aluminum	mg/L		0.2	MAC	0.026		<0.005	<0.005	<0.005	<0.005	<0.005	0.007	0.006	off	
T-Antimony	mg/L		0.006	MAC			<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	off	
T-Arsenic	mg/L	0.025	0.025	IMAC	<0.01		0.0015	0.0018	0.0018	0.0022	0.0017	0.0016	0.0014	off	
T-Barium	mg/L	1.0	1	MAC	0.0049		0.005	0.006	0.005	0.005	0.005	0.005	0.005	off	
T-Boron	mg/L	5.0	5	MAC	<0.002		0.021	0.034	0.036	0.028	0.032	0.033	0.032	off	
T-Cadmium	mg/L	0.005			<0.0006		0.00005	<0.00001	<0.00001	<0.00001	<0.00001	0.00002	<0.00001	off	
T-Calcium	mg/L				23.1		20.8	21.1	22.8	20	18.8	19.5	19.7	off	
T-Chromium	mg/L	0.05	0.05	MAC	<0.0009		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.001	0.0006	off	
T-Copper	mg/L	1.0	<=1	MAC	<0.001		<0.001	0.001	0.001	0.001	0.002	0.004	0.002	off	
T-Iron	mg/L	0.3	<=0.3	AO	0.773		0.8	0.9	0.9	1.2	1	1.5	0.8	off	
T-Lead	mg/L	0.01	0.01	MAC	<0.002		0.0002	0.0009	0.006	0.0018	0.0013	0.0039	0.0023	off	
T-Magnesium	mg/L		<=700	AO	9.63		9.3	9.4	9.8	8	7.9	7.9	8.51	off	
T-Manganese	mg/L	0.05	<=0.05	AO	0.198		0.183	0.17	0.186	0.19	0.168	0.182	0.171	off	
T-Mercury	mg/L	0.001	0.001	MAC	<0.0001		<0.001	<0.0002	<0.0002	<0.0001	<0.0001	<0.0001	<0.01	off	
T-Potassium	mg/L				2.1		2	2	2.2	1.9	2	2	1.9	off	
T-Selenium	mg/L	0.01	0.01	MAC	<0.004		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	0.0002	<0.0006	off	
T-Sodium	mg/L	200	<=200	AO	16.5		18	15.8	16.1	14.4	14.2	14.6	15.3	off	
T-Uranium	mg/L	0.1	0.1	MAC	<0.06		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0004	off	
T-Zinc	mg/L	5	<5	AO	0.0137		0.009	0.017	0.015	0.088	0.074	0.398	0.062	off	
Total Coliform	cfu/100ml	<1	<1	cfu/100ml	942		<1		<1	<1	<1	<1	<1	off	
Fecal Coliform	cfu/100ml	<1	<1	cfu/100ml	<1		<1		<1	<1	<1	<1	<1	off	
E.coli	cfu/100ml	<1	<1	cfu/100ml							<1	<1	<1	off	

Note: Total coliforms can be an indicator of adverse water quality if the result in the re-sample is confirmed positive. (United States Environmental Protection Agency (EPA), 2008) RDN Water samples are always tested for Fecal coliform bacteria at the same time as Total coliforms to rule out the presence of harmful pathogens.

*Resampled and had <1 for all Coliforms

French Creek Well Water Analysis Results

French Creek Well #7: 846 Yambury Road

Canadian Drinking Water Guidelines Package



MAC=Maximum Acceptable Concentration IMAC= Interim Maximum Acceptable Concentration AO= Asthetic Objective

CDWG=Canadian Drinking Water Guidelines BCAWQG=British Columbia Approved Water Quality Guidelines

Red font indicates non-compliance with Canadian Drinking Water Guidelines

* raw well water

Parameter	Water Quality Guidelines				2000	2001	16-Oct 2002	22-Oct 2003	26-Oct 2004	19-Oct 2005	24-Oct 2006	24-Oct 2007	08-Oct 2008	14-Oct 2009	2010
	Units	CDWG	BCAWQG												
Color	CU	15	</=15	AO	<5		5	<5	<5	7	<5	<5	5	13	
Conductivity	µS		700	MAC	277		314	338	333	342	316	355	343	299	
Total Dissolved Solids	mg/L	500	</=500	AO	186		160	193	220	300	210	273	210	198	
Hardness (CaCO3)	mg/L	80-100	</=500	AO	142.3		139	155	170	160	140	160	160	150	
pH	pH units	6.5-8.5	6.5-8.5	AO	8.17		8.12	8.05	8.2	8.2	8.3	8.22	8	8.2	
Turbidity	NTU's	5	1	MAC	0.13		0.24	0.66	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
Alkalinity	mg/L				131		142	160	160	160	150	160	160	130	
Chloride	mg/L	250	</=250	AO	2.13		2.37	2.8	3.4	3	3.4	3.2	4.9	3.8	
Fluoride	mg/L	1.5	1.5	MAC	0.12		0.13	<0.6	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	
Sulfate	mg/L	500	</=500	AO	15.22		15.82	17.6	20	18.9	13.1	<2.0	17.4	19.1	
Nitrate (N)	mg/L	10	10	MAC	<0.002		<0.01	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	
Nitrite (N)	mg/L	1			<0.006		<0.01	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	
T-Aluminum	mg/L		0.2	MAC	0.021		0.006	<0.005	<0.0005	<0.005	0.015	0.021	0.007	<0.005	
T-Antimony	mg/L		0.006	MAC			<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	
T-Arsenic	mg/L	0.025	0.025	IMAC	<0.01		<0.0002	0.0002	0.0003	0.0003	<0.0002	0.0002	<0.0002	0.0003	
T-Barium	mg/L	1.0	1	MAC	0.0144		0.015	0.017	0.018	0.017	0.015	0.018	0.017	0.016	
T-Boron	mg/L	5.0	5	MAC	<0.002		0.014	0.019	0.02	0.019	0.021	0.019	0.018	0.019	
T-Cadmium	mg/L	0.005			<0.0006		<0.00001	0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	
T-Calcium	mg/L				35.7		33.7	37.2	41.6	39.8	35	39.3	39.9	35.8	
T-Chromium	mg/L	0.05	0.05	MAC	<0.0009		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0004	<0.0004	
T-Copper	mg/L	1.0	</=1	MAC	<0.001		0.002	<0.001	<0.001	0.001	0.001	0.002	<0.001	0.001	
T-Iron	mg/L	0.3	</=0.3	AO	0.158		<0.1	0.1	0.1	0.1	<0.1	0.2	0.11	0.124	
T-Lead	mg/L	0.01	0.01	MAC	<0.002		0.0004	<0.0001	0.0001	0.0002	0.0001	0.0001	0.0004	<0.0001	
T-Lithium	mg/L													<0.001	
T-Magnesium	mg/L		</=700	AO	12.9		13.3	15.2	16.7	14.9	13.3	15.1	15.8	13.8	
T-Manganese	mg/L	0.05	</=0.05	AO	0.127		0.126	0.132	0.156	0.147	0.124	0.148	0.138	0.127	
T-Mercury	mg/L	0.001	0.001	MAC	<0.0001		<0.0002	<0.0002	<0.0002	<0.0001	<0.0001	<0.0001	<0.01	<0.01	
T-Nickel	mg/L													0.001	
T-Phosphorus	mg/L													0.304	
T-Potassium	mg/L				2.1		2.1	2.2	2.5	2.4	2.4	2.4	2.4	2.3	
T-Selenium	mg/L	0.01	0.01	MAC	<0.004		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0006	<0.0006	
T-Silver	mg/L													<0.00001	
T-Sodium	mg/L	200	</=200	AO	9.2		9	8.4	9	9.5	9.9	9	8.49	9.41	
T-Uranium	mg/L	0.1	0.1	MAC	<0.06		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0004	<0.0004	
T-Zinc	mg/L	5	<5	AO	0.0782		0.046	0.043	0.01	0.012	0.003	0.012	0.006	0.013	
Total Coliform	cfu/100ml	<1	<1	cfu/100ml	*50				<1	<1	<1	<1	<1	<1	
Fecal Coliform	cfu/100ml	<1	<1	cfu/100ml	<1				<1	<1	<1	<1	<1	<1	
E.coli	cfu/100ml	<1	<1	cfu/100ml	<1				<1	<1	<1	<1	<1	<1	

Note: Total coliforms can be an indicator of adverse water quality if the result in the re-sample is confirmed positive. (United States Environmental Protection Agency (EPA), 2008) RDN Water samples are always tested for Fecal coliform bacteria at the same time as Total coliforms to rule out the presence of harmful pathogens.

*Resampled and had <1 for all Coliforms

French Creek Distribution Water Analysis Results

Location: 1228 Sunrise Drive

Canadian Drinking Water Guidelines Package
*samples collected at French Creek Pumphouse

MAC=Maximum Acceptable Concentration IMAC=Interim Maximum Acceptable Concentration AO=Aesthetic Objective
CDWG=Canadian Drinking Water Guidelines BCAWQG=British Columbia Approved Water Quality Guidelines

Red font indicates non-compliance with Canadian Drinking Water Guidelines

Parameters	Water Quality Guidelines				17-Nov	29-Nov	28-Jun	06-Mar	23-Apr		20-Apr	17-May	22-May	27-May	13-May	2010
	Units	CDWG	BCAWQG		1999*	2000	2001*	2002*	2003	2004	2005	2006	2007	2008	2009	
Color	CU	15	</=15	AO	25	5	37	7	22	39	60	20	7	17	6	
Conductivity	uS		700	MAC	279	309	324	281	326	327	311	309	309	312	330	
TDS	mg/L	500	</=500	AO	172	190	167	153	173	200	150	193	182	208	246	
Hardness (CaCO3)	mg/L	80-100	</=500	AO	103	115.2	124.9	136	116.3	120	120	140	140	130	200	
pH	pH units	6.5-8.5	6.5-8.5	AO	8.03	7.83	7.72	7.95	7.9	7.8	7.8	8.1	8	8.15	8.2	
Turbidity	NTU's	5	1	MAC	0.96	0.63	0.85	0.22	0.69	1.3	2.3	0.9	0.6	0.7	0.5	
Alkalinity	mg/L				137	135	134	131	138	130	140	150	130	140	140	
Chloride	mg/L	250	</=250	AO	5.7	6.07	9.2	5.21	10.91	14.4	13	7.2	7.1	7.6	15.2	
Fluoride	mg/L	1.5	1.5	MAC	0.1	0.14	0.12	0.13	0.09	<1.0	<1.0	0.1	<1.0	<1.0	<1.0	
Sulfate	mg/L	500	</=500	AO	5.1	5	7.61	12.07	6.74	48.6	5.4	11.3	9.9	10.4	4.9	
Nitrate	mg/L	10	10	MAC	0.06	5.89	<.004	0.03	0.06	0.2	<0.1	<0.01	<0.1	<0.1	2.7	
Nitrite	mg/L	1			0.05	0.08	<.002	0.03	<0.01	<0.1	<0.1	<0.01	<0.1	<0.1	<0.1	
T-Aluminum	mg/L		0.2	MAC	0.007	0.04	0.017	<.009	<0.005	<0.005	<0.005	<0.005	<0.005	<0.05	<0.005	
T-Antimony	mg/L		0.006	MAC			<.006	<.006	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.001	<0.0002	
T-Arsenic	mg/L	0.025	0.025	IMAC		<.01	<.01	<.01	0.0006	0.0007	0.0009	0.0002	<0.0002	<0.001	<0.0002	
T-Barium	mg/L	1.0	1	MAC	0.008	0.01	0.0139	0.0159	0.01	0.015	0.014	0.015	0.016	0.01	0.011	
T-Boron	mg/L	5.0	5	MAC		0.041	0.036	0.022	0.037	0.039	0.034	0.018	0.023	<0.02	0.013	
T-Cadmium	mg/L	0.005				<.0006	<.0006	<.0006	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.0003	<0.00001	
T-Calcium	mg/L					28	29.9	33.3	27.1	28.9	28.2	33.5	34.3	30.6	49.1	
T-Chromium	mg/L	0.05	0.05	MAC		<.0009	<.0009	<.0009	0.0006	<0.0005	<0.0005	<0.0005	<0.0005	<0.003	0.0006	
T-Copper	mg/L	1.0	</=1	MAC		<.001	0.002	<.001	0.004	0.002	0.001	0.002	0.002	<0.005	0.049	
T-Iron	mg/L	0.3	</=0.3	AO	0.2	0.41	0.461	0.203	0.4	0.5	1	0.1	0.1	0.12	0.03	
T-Lead	mg/L	0.01	0.01	MAC		<.002	0.002	<.002	0.0002	0.0002	0.0002	<0.0001	0.0002	<0.0005	0.0008	
T-Lithium	mg/L														0.001	
T-Magnesium	mg/L		</=700	AO	10.4	11	12.2	12.8	11.8	11.9	11.7	12.6	13.6	12.3	17.7	
T-Manganese	mg/L	0.05	</=0.05	AO	0.13	0.17	0.213	0.152	0.174	0.385	0.34	0.124	0.136	0.13	0.0013	
T-Mercury	mg/L	0.001	0.001	MAC		<.0001	<.0001	<.0001	<0.0002	<0.0002	<0.0002	<0.0001	<0.0001	<0.01	<0.01	
T-Nickel	mg/L														0.001	
T-Phosphorus	mg/L														0.012	
T-Potassium	mg/L					<4	2.2	204	2.4	2.5	2	2.4	2.3	2.2	1.1	
T-Selenium	mg/L	0.01	0.01	MAC		<.004	0.005	<.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.003	<0.0006	
T-Silver	mg/L														<0.00001	
T-Sodium	mg/L	200	</=200	AO		15	20.2	11.9	19.6	21	20	12.5	12.9	13.4	7.72	
T-Uranium	mg/L	0.1	0.1	MAC		<.06	<.06	<.02	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.002	<0.0004	
T-Zinc	mg/L	5	<5	AO		0.0069	0.0027	0.0034	0.005	0.012	0.009	0.004	0.011	<0.005	0.118	
Total Coliform	cfu/100ml	<1	<1	cfu/100ml	<1	<1	<1	n/a	n/a	<1	<1	<1	<1	<1.0	<1.0	
Fecal Coliform	cfu/100ml	<1	<1	cfu/100ml	<1	<1	<1	n/a	n/a	<1	<1	<1	<1	<1.0	<1.0	
E.coli	cfu/100ml	<1	<1	cfu/100ml								<1	<1	<1.0	<1.0	
Tannins & Lignins					n/a	n/a	0.28	<.1	n/a	n/a	n/a	n/a	n/a			
Trihalomethanes	mg/l	0.1		MAC	n/a	n/a	3.1	n/a	n/a	n/a	n/a	0.009	n/a			

APPENDIX C

EMERGENCY RESPONSE PLAN

* Emergency Response Plan not included in Public Copy.