



# NANOOSE BAY PENINSULA

Water Service Area  
Annual Report  
2010

Prepared by:



**REGIONAL DISTRICT OF NANAIMO**  
*Water Services Department*  
June 2011



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Appendix A - Map of Nanoose Bay Peninsula Water Service Area

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## 1. Introduction

The following annual report describes the Nanoose Bay Peninsula (NBP) Water Service Area and summarizes the water quality and production data from 2010. 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 2011.

## 2. Nanoose Bay Peninsula Water System

The Nanoose Bay Peninsula Water System was established in 2005 by amalgamating the water service areas locally known as Madrona, Wall Beach, Driftwood, Nanoose Beachcomber), Fairwinds, Arbutus Park, and West Bay. The previous service areas, if referred to in this report, are noted as neighbourhoods within the NBP service area. In 2010, the Nanoose Peninsula Water System was comprised of 2001 water service customers.

The water supply originates from 11 groundwater wells located in the area, and is supplemented seasonally (as required) with water from the Englishman River. The water supply is chlorinated and stored in several reservoirs throughout Nanoose Bay. A portable back-up generator is available in the event of a power outage. A map of the Nanoose Bay Peninsula Water Service Area is provided in Appendix A for reference.

### 2.1 Groundwater Wells

Eleven groundwater production wells are located in Nanoose Bay for water supply.

Well / Name	Well Depth	Wellhead Protection In Place	Treated/Untreated with Chlorine
Wallbrook #1	16.9 m	Yes	Treated
Madrona #4	52.1 m	Yes	Un-treated
Madrona #8	17.1m	Yes	Treated
Nanoose #2	53.3 m	Yes	Treated
Nanoose #3	52.7 m	Yes	Treated
Nanoose #4	59.1 m	Yes	Treated
Nanoose #6	107.0 m	Yes	Treated
Fairwinds #1	69.8 m	Yes	Treated
Fairwinds #2	75.3 m	Yes	Treated
Fairwinds #3	72.2 m	Yes	Treated
West Bay #3	75.6 m	Yes	Treated

### 2.2 Reservoirs

Seven water storage reservoirs are present in the Nanoose Bay Peninsula Water System as follows;

- Madrona (concrete) - 485 m<sup>3</sup> (100,000 imperial gallons) capacity
- Beachcomber (steel) - 591 m<sup>3</sup> (130,000 imperial gallons) capacity
- Eagle Heights (concrete) - 341 m<sup>3</sup> (75,000 imperial gallons) capacity
- Dolphin (steel) - 455 m<sup>3</sup> (100,000 imperial gallons) capacity
- Fairwinds Res #1 (concrete) - 701 m<sup>3</sup> (154,000 imperial gallons) capacity
- Fairwinds Res #2 (concrete) - 701 m<sup>3</sup> (154,000 imperial gallons) capacity
- Arbutus Park (concrete) - 568 m<sup>3</sup> (125,000 imperial gallons) capacity

### 2.3 Distribution System

The water distribution system in Nanoose Bay is summarized in the table below. Fire hydrants (271) 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	10.4 km 2.7 km	13.5% 3.5%
<u>PVC:</u> 150mm or smaller 200mm or larger	20.9 km 32.6 km	27.1% 42.2%
<u>Ductile Iron:</u> 150mm or smaller 200mm or larger	0.2 km 10.3 km	0.3% 13.3%

*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, TDS
Monthly (Health Dept.)	BC Centre for Disease Control	Total coliforms, E.Coli
Monthly	RDN (in-house) Laboratory	Total Iron and Manganese
Annual Source Water Testing (every Fall)	North Island Labs	Complete potability testing of all raw well water, including T-Ammonia
Annual System Water Testing (every Spring)	North Island Labs	Complete potability testing of distribution system

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

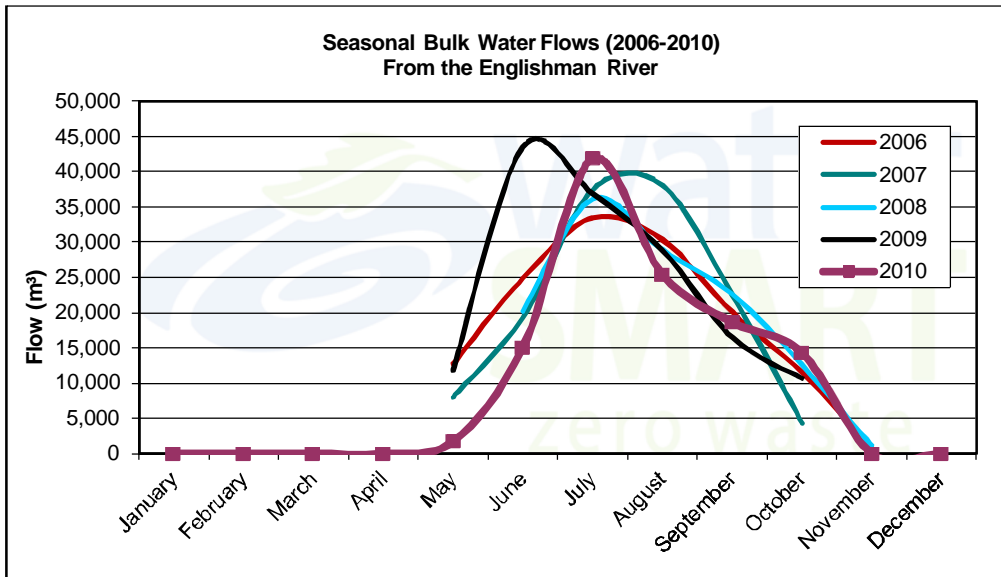
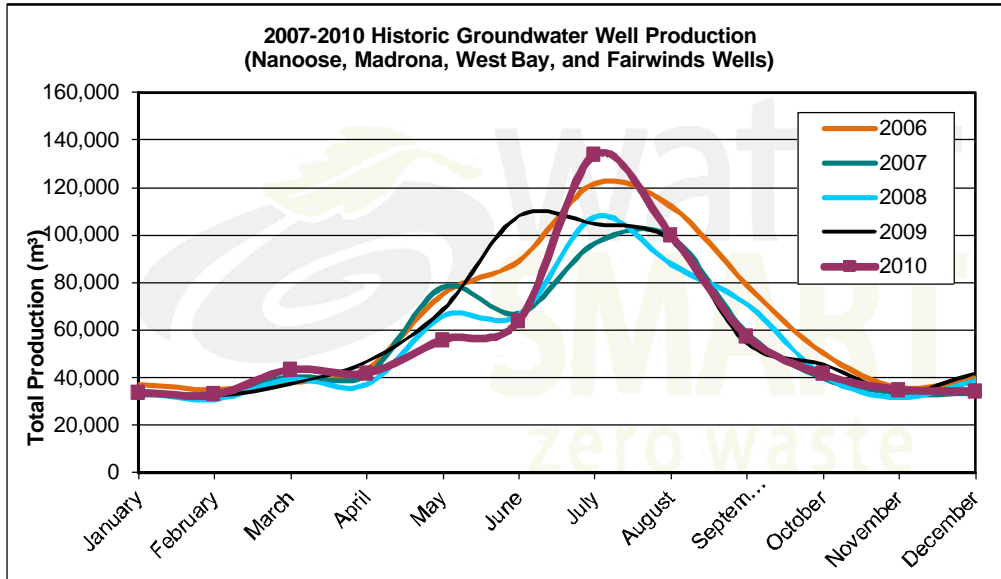
Up-to-date water quality reports and lab data are posted monthly on the RDN website at [www.rdn.bc.ca](http://www.rdn.bc.ca) in the Environmental/Water section, under “Water Service Areas” then “WaterSmart Communities”. Tables of water quality testing results for both the source water and distribution system are provided at the end of this report under Appendix B

### 5. **Water Quality Inquiries and Complaints**

Numerous complaints and inquiries were received from the Nanoose Bay water service area, and were typically related to iron and manganese in the tap water (particularly the Fairwinds neighbourhood).

## 6. Groundwater Production and Consumption

The monthly groundwater well production and bulk water flows for the past 5 years are shown in the charts below. Groundwater production and bulk water flows in 2010 were average in comparison to previous years.



In the Fall/Winter of 2010, the average usage per home in Nanoose Bay was 0.49 cubic metres per day (107 imperial gallons). In the summer, the average water usage was 12 cubic metres per day (268 imperial gallons). Based on these figures, the annual consumption per capita is estimated to be 305 L/day (based on 2.4 people/household). This consumption is the same as the RDN system average of 305 L/day/capita in 2010.

## 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. In the Fairwinds neighbourhood the watermains are flushed a second time in the Fall. Fire hydrants are serviced once per year (either 'A-level' or 'B-level' maintenance). Water storage reservoirs are 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 System Projects

### 8.1 2010 Completed Studies & Projects

- Completed annual fire hydrant maintenance;
- Drained and cleaned all 7 Nanoose Bay water storage reservoirs
- Completed screen maintenance and redevelopment of Madrona Well No.4;
- Re-sealed the roof of the Dolphin Beach water storage reservoir;
- Replaced the system controls in the West Bay pumphouse;
- Upgraded the Outrigger Road PRV;
- Installed automated chlorine analyzers;
- Installed stand-alone water sampling stations;
- Installed well-sequencing controls;
- Updated the outdoor sprinkling regulations;
- Prepared a Draft Cross-Connection Control Bylaw;
- Carried out a comprehensive water conservation campaign (Team WaterSmart);
- Updated and improved the RDN website at [www.rdn.bc.ca](http://www.rdn.bc.ca);
- Updated the Emergency Response Plan;
- Utilized the Auto E-message service to notify member residents of water service disruptions and upcoming maintenance activities;
- Applied a low-flush toilet incentive;
- Maintained excellent customer complaint and service request response times;
- Continued quality control through regular testing and monitoring of our water systems; and
- Completed additional educational programs.

### 8.2 2011 Proposed Projects & Upgrades

- Complete the Cross-Connection Control Bylaw and establish a procedure for reviewing commercial and industrial properties for water system risks
- Begin construction of the Nanoose Bay Water Treatment (filtration) Plant;
- Replace the Dolphin Beach reservoir access ladder;
- Demolish the Arbutus Pumphouse and reroute communication lines;
- Complete the connection of Nanoose Well No.8 (Claudet Road) to the Nanoose Bay Water System;
- Replace several watermain flushouts;
- Upgrade well control automation associated with bringing the Wallbrook Well Field online; and
- Replace the well pump in West Bay Well No.3.

## 9. Emergency Response Plan

The Regional District has an Emergency Response Plan (ERP) that contains procedures and contact information to efficiently respond to water system emergencies such as contamination of water supply, loss of supply, and pump failure. The ERP was reviewed and updated in 2010, 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

## 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 crossconnection control programs in other small water systems 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.

In 2010, a Draft Cross-Connection Control Bylaw was prepared, and is anticipated to be finalized in 2011. Additionally, the program in 2011 will include:

- A formal survey of existing and potential crossconnections, and
- An audit of RDN-owned facilities in each water service area.

## 11. Closing

An annual report for the year 2011 will be prepared and submitted to the Vancouver Island Health Authority in the Spring of 2012. Annual reports are also available on our website at [www.rdn.bc.ca](http://www.rdn.bc.ca) in the Environmental/Water section, under “Water Service Areas” then “WaterSmart Communities”.



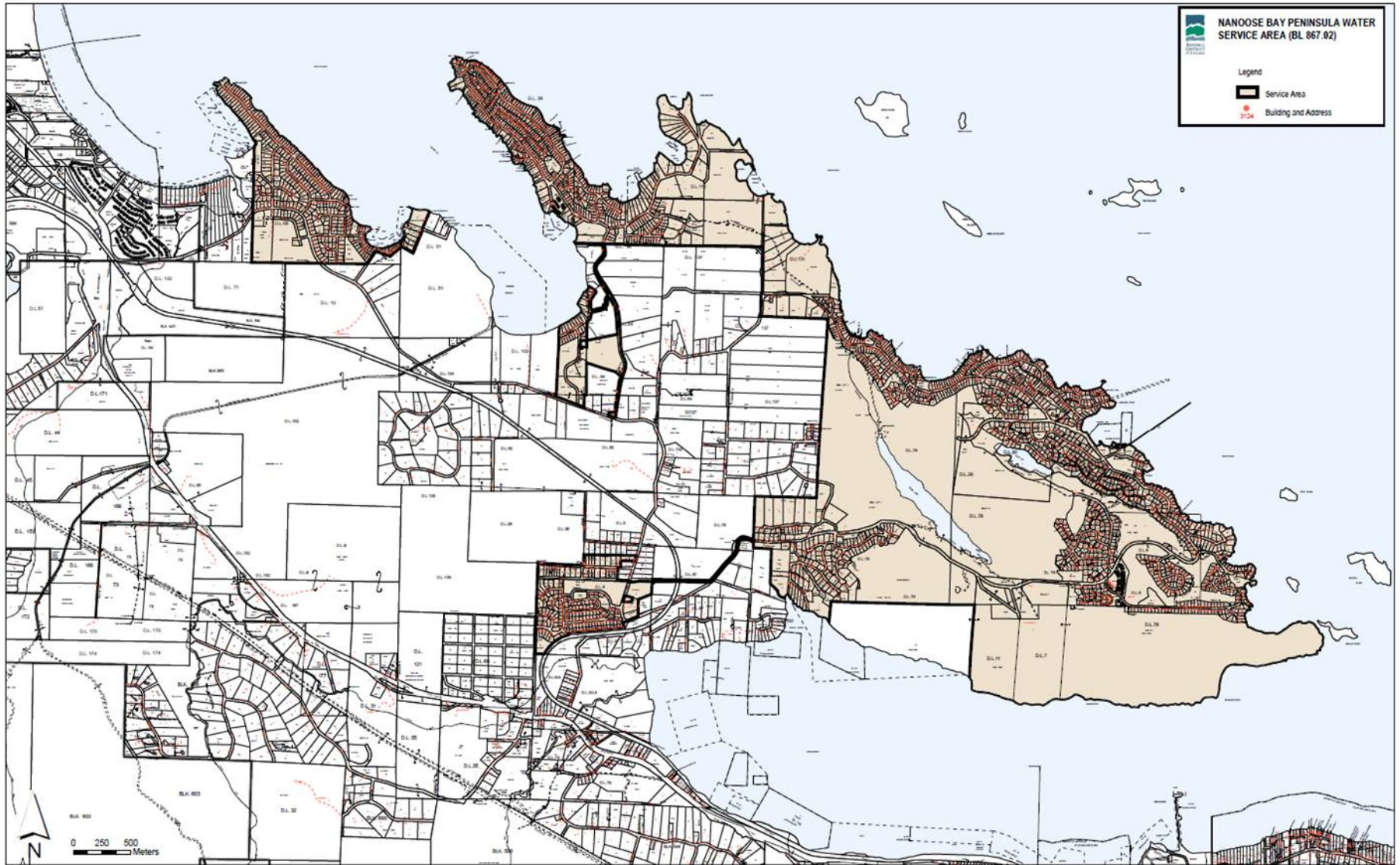
Well Rehabilitation in October 2010

**APPENIDX A**

**MAP OF NANOOSE BAY  
WATER SERVICE AREA**



# NANOOSE BAY PENINSULA WATER SERVICE AREA



## **APPENDIX B**

### **WATER QUALITY TESTING RESULTS**



## Nanoose Well Water Analysis Results

### Nanoose Well # 1: 2550 Northwest Bay Road

Canadian Drinking Water Guidelines Package

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



**Red font indicates non-compliance with Canadian Drinking Water Guidelines**

\* raw well water

Parameter	Water Quality Guidelines				16-Oct	22-Oct	26-Oct	19-Oct	24-Oct	24-Oct	20-Oct	26-Oct	2010
	Units	CDWG	BCAWQG		2002	2003	2004	2005	2006	2007	2008	2009	
Color	CU	15	<=15	AO	7	<5	5	6	5	8	13	off	
Conductivity	µS		700	MAC	254	33	317	321	317	324	320	off	
Total Dissolved Solids	mg/L	500	<=500	AO	180	173	190	300	210	247	174	off	
Hardness (CaCO3)	mg/L	80-100	<=500	AO	<b>134.1</b>	<b>138</b>	<b>120</b>	<b>150</b>	<b>130</b>	<b>140</b>	<b>140</b>	off	
pH	pH units	6.5-8.5	6.5-8.5	AO	7.89	7.62	7.9	8	8	8.15	7.8	off	
Turbidity	NTU's	5	1	MAC	0.64	1.16	0.9	0.7	0.7	0.6	0.8	off	
Alkalinity	mg/L				150	160	160	160	160	150	160	off	
Chloride	mg/L	250	<=250	AO	3.83	4.1	3.8	3.6	4.4	3.7	3.7	off	
Fluoride	mg/L	1.5	1.5	MAC	0.10	<0.6	<1.0	<1.0	<1.0	<1.0	<1.0	off	
Sulfate	mg/L	500	<=500	AO	9.31	9.4	8.1	8	8.9	6.9	6.5	off	
Nitrate (N)	mg/L	10	10	MAC	<0.01	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	off	
Nitrite (N)	mg/L	1			<0.01	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	off	
T-Aluminum	mg/L		0.2	MAC	<0.005	<0.005	0.007	<0.005	0.018	0.009	<0.005	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	0.0011	0.0012	0.0009	0.001	0.001	0.001	0.0009	off	
T-Barium	mg/L	1.0	1	MAC	0.017	0.018	0.009	0.019	0.018	0.019	0.017	off	
T-Boron	mg/L	5.0	5	MAC	0.024	0.034	0.074	0.035	0.035	0.035	0.029	off	
T-Cadmium	mg/L	0.005			<0.00001	<0.00001	0.00002	<0.00001	<0.00001	<0.00001	<0.00001	off	
T-Calcium	mg/L				32.9	34	35.8	36.6	33.2	35.1	35.8	off	
T-Chromium	mg/L	0.05	0.05	MAC	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0004	off	
T-Copper	mg/L	1.0	<=1	MAC	0.001	0.05	0.079	0.003	0.003	0.007	0.02	off	
T-Iron	mg/L	0.3	<=0.3	AO	<b>0.3</b>	<b>0.4</b>	<b>0.4</b>	<b>0.4</b>	<b>0.3</b>	<b>0.4</b>	<b>0.32</b>	off	
T-Lead	mg/L	0.01	0.01	MAC	0.0003	0.0034	0.007	0.001	0.0005	0.0019	0.0033	off	
T-Magnesium	mg/L		<=700	AO	12.6	13.1	13.6	13	11.9	12.8	12.9	off	
T-Manganese	mg/L	0.05	<=0.05	AO	<b>0.166</b>	<b>0.161</b>	<b>0.178</b>	<b>0.19</b>	0.17	<b>0.191</b>	<b>0.18</b>	off	
T-Mercury	mg/L	0.001	0.001	MAC	<0.0002	<0.0002	<0.0002	<0.0001	<0.0001	<0.0001	<0.01	off	
T-Potassium	mg/L				2	2.2	2.3	2.2	2.3	2.4	2.2	off	
T-Selenium	mg/L	0.01	0.01	MAC	<0.0002	<0.0002	0.0002	<0.0002	<0.0002	0.0004	<0.0006	off	
T-Sodium	mg/L	200	<=200	AO	12	12.1	13	13.2	12.9	13	11.6	off	
T-Uranium	mg/L	0.1	0.1	MAC	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0004	off	
T-Zinc	mg/L	5	<5	AO	0.013	0.177	0.321	0.006	0.01	0.018	0.101	off	
Total Coliform	cfu/100ml	<1	<1	cfu/100ml			<1	<1	<1	<1	<1	off	
Fecal Coliform	cfu/100ml	<1	<1	cfu/100ml			<1	<1	<1	<1	<1	off	
E.coli	cfu/100ml	<1	<1	cfu/100ml				<1	<1	<1	<1	off	







## Nanoose Well Water Analysis Results

### Nanoose Well # 4: 2311 Northwest Bay 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	Water Quality Guidelines				16-Oct	22-Oct	26-Oct	19-Oct	24-Oct	24-Oct	20-Oct	26-Oct	19-Oct
	Units	CDWG	BCAWQG		2002	2003	2004	2005	2006	2007	2008	2009	2010
Total Ammonia (N)	mg/L												0.8
Color	CU	15	<=15	AO	<b>28</b>	10	11	<b>16</b>	7	<b>16</b>	10	<b>24</b>	<b>19</b>
Conductivity	µS		700	MAC	330	345	331	333	325	329	324	326	334
Total Dissolved Solids	mg/L	500	<=500	AO	180	193	170	240	210	173	54	208	180
Hardness (CaCO3)	mg/L	80-100	<=500	AO	<b>120.2</b>	<b>125</b>	<b>130</b>	<b>130</b>	<b>120</b>	<b>120</b>	<b>27</b>	<b>120</b>	<b>130</b>
pH	pH units	6.5-8.5	6.5-8.5	AO	7.36	7.55	7.8	8	7.9	8.05	6.45	8	7.9
Turbidity	NTU's	5	1	MAC	1.65	4.76	1.7	2.6	1.6	1.8	1.7	1.1	1.4
Alkalinity	mg/L				196	180	180	170	170	160	170	170	170
Chloride	mg/L	250	<=250	AO	1.77	4	3.7	3.5	3.9	3.6	8.5	4.3	3.6
Fluoride	mg/L	1.5	1.5	MAC	0.42	<0.6	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Sulfate	mg/L	500	<=500	AO	0.41	1.7	<2.0	<2	<2.0	<2.0	<2.0	<2.0	<2.0
Nitrate (N)	mg/L	10	10	MAC	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Nitrite (N)	mg/L	1			0.14	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
T-Aluminum	mg/L		0.2	MAC	0.019	<0.005	0.008	<0.005	0.008	0.019	0.014	<0.005	0.007
T-Antimony	mg/L		0.006	MAC	<0.0002	<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	0.0027	0.0025	0.0024	0.0022	0.0022	0.0024	<0.0002	0.0023	0.0022
T-Barium	mg/L	1.0	1	MAC	0.017	0.011	0.011	0.012	0.01	0.012	0.003	0.01	0.01
T-Boron	mg/L	5.0	5	MAC	0.045	0.078	0.073	0.074	0.071	0.076	0.009	0.082	0.069
T-Cadmium	mg/L	0.005			<0.00001	0.0003	<0.00001	<0.00001	<0.00001	0.00002	<0.00001	<0.00001	<0.00001
T-Calcium	mg/L				29	30.1	31.5	31.6	29.1	29.8	8.61	28.1	32.1
T-Chromium	mg/L	0.05	0.05	MAC	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0006	<0.0004	<0.0004	0.001
T-Copper	mg/L	1.0	<=1	MAC	0.002	0.052	0.003	0.006	<0.001	0.234	0.005	0.001	0.002
T-Iron	mg/L	0.3	<=0.3	AO	<b>1.7</b>	<b>1</b>	<b>0.7</b>	<b>0.8</b>	<b>0.6</b>	<b>0.9</b>	0.03	<b>0.514</b>	<b>0.614</b>
T-Lead	mg/L	0.01	0.01	MAC	0.0005	0.0081	0.0005	0.0007	0.0002	<b>*0.0101</b>	0.0008	<0.0001	0.0004
T-Lithium	mg/L											<0.001	<0.001
T-Magnesium	mg/L		<=700	AO	11.6	12.2	12.3	11.6	10.9	11.2	1.3	11.3	12.1
T-Manganese	mg/L	0.05	<=0.05	AO	<b>0.34</b>	<b>0.37</b>	<b>0.260</b>	<b>0.278</b>	<b>0.242</b>	<b>0.319</b>	0.0124	<b>0.235</b>	<b>0.275</b>
T-Mercury	mg/L	0.001	0.001	MAC	<0.0002	<0.0002	<0.0002	<0.0001	<0.0001	<0.0001	<0.01	<0.01	<0.00001
T-Nickel	mg/L											<0.001	<0.001
T-Phosphorus	mg/L											0.921	1.07
T-Potassium	mg/L				2.1	2.3	2.3	2.3	2.4	2.3	0.3	2.3	2.2
T-Selenium	mg/L	0.01	0.01	MAC	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	0.0003	<0.0006	<0.0006	<0.0006
T-Silver	mg/L											<0.00001	<0.00001
T-Sodium	mg/L	200	<=200	AO	21.2	15.5	23.4	24.5	22.8	23.2	3.96	22.6	25
T-Uranium	mg/L	0.1	0.1	MAC	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0004	<0.0004	<0.0004
T-Zinc	mg/L	5	<5	AO	0.16	0.761	0.005	0.01	0.004	0.224	0.031	0.038	0.007
Total Coliform	cfu/100ml	<1	<1	cfu/100ml			<1	<1	<1	<b>OG</b>	<1	<1	<1.0
Fecal Coliform	cfu/100ml	<1	<1	cfu/100ml			<1	<1	<1	<1	<1	<1	<1.0
E.coli	cfu/100ml	<1	<1	cfu/100ml			<1	<1	<1	<1	<1	<1	<1.0

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.

\* Re-sample for Lead for 2007 - Result 0.0001 mg/l





## Nanoose Well Water Analysis Results

### Nanoose Well # 6: 2500 Nuttal 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				16-Oct	22-Oct	26-Oct	19-Oct	24-Oct	24-Oct	20-Oct	26-Oct	19-Oct
	Units	CDWG	BCAWQG		2002	2003	2004	2005	2006	2007	2008	2009	2010
Total Ammonia (N)	mg/L												<0.01
Color	CU	15	<=15	AO		<5	<5	37	10	<5	11	82	14
Conductivity	µS		700	MAC		737	467	430	506	560	436	445	478
Total Dissolved Solids	mg/L	500	<=500	AO		467	290	300	320	447	268	278	266
Hardness (CaCO3)	mg/L	80-100	<=500	AO		330	220	190	260	270	190	190	230
pH	pH units	6.5-8.5	6.5-8.5	AO		7.24	7.5	7.8	7.5	7.96	7.51	7.6	7.6
Turbidity	NTU's	5	1	MAC		1.55	2.4	26.7	2.2	1.1	2.8	19.1	2.5
Alkalinity	mg/L					200	200	190	180	190	200	180	190
Chloride	mg/L	250	<=250	AO		7.6	7.5	7.1	8.7	7.7	7.7	8.4	8.4
Fluoride	mg/L	1.5	1.5	MAC		<0.6	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Sulfate	mg/L	500	<=500	AO		189	47.6	27.8	66.5	80.4	29.1	32.3	44.3
Nitrate (N)	mg/L	10	10	MAC		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Nitrite (N)	mg/L	1				<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
T-Aluminum	mg/L		0.2	MAC		0.115	0.008	0.945	<0.005	<0.005	<0.005	0.027	<0.005
T-Antimony	mg/L		0.006	MAC		0.0009	<0.0002	0.0003	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
T-Arsenic	mg/L	0.025	0.025	IMAC		0.0006	0.0004	0.0018	0.0004	0.0005	0.0003	0.0011	0.0006
T-Barium	mg/L	1.0	1	MAC		0.133	0.106	0.125	0.089	0.109	0.096	0.098	0.081
T-Boron	mg/L	5.0	5	MAC		0.093	0.147	0.179	0.055	0.081	0.166	0.131	0.088
T-Cadmium	mg/L	0.005				0.0006	<0.00001	0.00011	<0.00001	0.00002	<0.00001	0.00034	0.00003
T-Calcium	mg/L					118	79.7	70.2	96	101	70	71.7	86.8
T-Chromium	mg/L	0.05	0.05	MAC		<0.0005	<0.0005	0.0015	<0.0005	<0.0005	<0.0004	<0.0004	0.0008
T-Copper	mg/L	1.0	<=1	MAC		0.004	0.003	0.022	<0.001	0.01	0.022	0.02	0.004
T-Iron	mg/L	0.3	<=0.3	AO		0.2	0.3	3.4	0.2	0.2	0.19	1.27	0.257
T-Lead	mg/L	0.01	0.01	MAC		0.0011	0.0016	0.024	0.0001	0.0015	0.0016	0.021	0.0008
T-Lithium	mg/L											0.006	0.005
T-Magnesium	mg/L		<=700	AO		8.7	4.2	3.9	4.4	4.8	3.61	3.5	0.42
T-Manganese	mg/L	0.05	<=0.05	AO		0.054	0.076	0.078	0.102	0.108	0.0554	0.0585	0.075
T-Mercury	mg/L	0.001	0.001	MAC		<0.0002	<0.0002	<0.0001	<0.0001	<0.0001	<0.01	<0.01	<0.00001
T-Nickel	mg/L											0.001	0.002
T-Phosphorus	mg/L											0.015	<0.01
T-Potassium	mg/L					1.6	1.3	1.3	0.9	1.1	0.9	1	0.7
T-Selenium	mg/L	0.01	0.01	MAC		0.0013	<0.0002	<0.0002	0.0004	0.0003	<0.0006	<0.0006	<0.0006
T-Silver	mg/L											<0.00001	<0.00001
T-Sodium	mg/L	200	<=200	AO		14.6	18.9	21.9	10.4	12.1	16.9	15.7	12.9
T-Uranium	mg/L	0.1	0.1	MAC		0.0012	<0.0005	<0.0005	<0.0005	<0.0005	<0.0004	<0.0004	<0.0004
T-Zinc	mg/L	5	<5	AO		0.068	0.220	0.503	0.06	0.155	0.084	1.14	0.065
Total Coliform	cfu/100ml	<1	<1	cfu/100ml			*140	*>200	*20	*2	*12.4	45.3	<1.0
Fecal Coliform	cfu/100ml	<1	<1	cfu/100ml			<1	<1	<1	<1	<1	<1	<1.0
E.coli	cfu/100ml	<1	<1	cfu/100ml					<1	<1	<1	<1	<1.0

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







## Fairwinds Well Water Analysis Results

### Fairwinds Well #2: 2395 Nanoose 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			16-Oct	22-Oct	26-Oct	19-Oct	24-Oct	23-Oct	23-Oct	21-Oct	19-Oct	
	Units	CDWG	BCAWQG	2002	2003	2004	2005	2006	2007	2008	2009	2010	
Total Ammonia (N)	mg/L											1	
Color	CU	15	<=15	AO	<b>45</b>	<5	13	<b>18</b>	<5	<b>18</b>	<b>25</b>	<b>84</b>	<b>25</b>
Conductivity	µS		700	MAC	371	382	343	350	457	365	359	390	343
Total Dissolved Solids	mg/L	500	<=500	AO	207	220	210	190	290	247	224	246	180
Hardness (CaCO3)	mg/L	80-100	<=500	AO	<b>98</b>	<b>96</b>	<b>110</b>	<b>110</b>	100	<b>110</b>	<b>110</b>	100	<b>110</b>
pH	pH units	6.5-8.5	6.5-8.5	AO	7.57	7.63	7.7	7.9	7.8	8.06	7.97	7.6	7.8
Turbidity	NTU's	5	1	MAC	0.42	0.92	1.2	1.2	1.1	1	1	1.9	1.4
Alkalinity	mg/L				151	160	160	160	160	150	150	140	140
Chloride	mg/L	250	<=250	AO	34.06	25.9	13.7	12.8	42.4	13.7	15.5	27.4	9.2
Fluoride	mg/L	1.5	1.5	MAC	0.19	<0.6	<1.0	<1.0	<1.0	<1.0	1	<1.0	<1.0
Sulfate	mg/L	500	<=500	AO	2.49	4.8	5.2	5.2	6.4	6.4	7.9	11.4	9.1
Nitrate (N)	mg/L	10	10	MAC	0.03	<0.1	<0.1	<0.1	0.3	<0.1	<0.1	<0.1	<0.1
Nitrite (N)	mg/L	1			<0.01	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
T-Aluminum	mg/L		0.2	MAC	<0.005	<0.005	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<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	<0.0002
T-Arsenic	mg/L	0.025	0.025	IMAC	0.0016	0.0025	0.0017	0.0015	0.0015	0.001	0.0012	0.0016	0.0013
T-Barium	mg/L	1.0	1	MAC	0.009	0.009	0.009	0.009	0.007	0.009	0.008	0.013	0.008
T-Boron	mg/L	5.0	5	MAC	0.063	0.08	0.095	0.091	0.092	0.098	0.096	0.073	0.077
T-Cadmium	mg/L	0.005			<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
T-Calcium	mg/L				23.9	23.4	26.4	27.3	25.5	26.5	27.8	24.5	26.6
T-Chromium	mg/L	0.05	0.05	MAC	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0006	<0.0004	<0.0004	0.001
T-Copper	mg/L	1.0	<=1	MAC	0.004	0.002	<0.001	0.003	0.001	<0.001	<0.001	0.01	<0.001
T-Iron	mg/L	0.3	<=0.3	AO	<b>0.7</b>	<b>1.1</b>	<b>0.7</b>	<b>0.7</b>	<b>0.4</b>	<b>0.6</b>	<b>0.56</b>	<b>0.992</b>	<b>0.846</b>
T-Lead	mg/L	0.01	0.01	MAC	0.0003	0.0005	<0.0001	<0.0001	<0.0001	<0.0001	0.0002	0.0006	0.0002
T-Lithium	mg/L											<0.001	<0.001
T-Magnesium	mg/L		<=700	AO	9.3	9.2	10.2	9.8	9.4	9.7	10.7	9.57	9.78
T-Manganese	mg/L	0.05	<=0.05	AO	<b>0.318</b>	<b>0.319</b>	<b>0.325</b>	<b>0.319</b>	<b>0.178</b>	<b>0.317</b>	<b>0.317</b>	<b>0.47</b>	<b>0.335</b>
T-Mercury	mg/L	0.001	0.001	MAC	<0.0002	<0.0002	<0.0002	<0.0001	<0.0001	<0.0001	<0.01	<0.01	<0.00001
T-Nickel	mg/L											<0.001	<0.001
T-Phosphorus	mg/L												1.24
T-Potassium	mg/L				2.7	2.7	2.8	2.9	3	2.9	3	3	2.6
T-Selenium	mg/L	0.01	0.01	MAC	<0.0002	<0.0002	0.0003	<0.0002	<0.0002	<0.0002	<0.0006	<0.0006	<0.0006
T-Silver	mg/L											<0.00001	<0.00001
T-Sodium	mg/L	200	<=200	AO	42.4	43.4	31.7	32.6	57.6	32	33.2	41.9	29.8
T-Uranium	mg/L	0.1	0.1	MAC	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0004	<0.0004	<0.0004
T-Zinc	mg/L	5	<5	AO	0.06	0.049	0.006	0.013	0.003	0.006	0.005	0.081	0.007
Total Coliform	cfu/100ml	<1	<1	cfu/100ml			<1	<1	<1	<1	<1	<1.0	<1.0
Fecal Coliform	cfu/100ml	<1	<1	cfu/100ml			<1	<1	<1	<1	<1	<1.0	<1.0
E.coli	cfu/100ml	<1	<1	cfu/100ml			<1	<1	<1	<1	<1	<1.0	<1.0



**Madrona Well Water Analysis Results**
**Madrona Well # 4: Northwest Bay Logging 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			16-Oct	22-Oct	24-Nov	19-Oct	24-Oct	23-Oct	23-Oct	21-Oct	
	Units	CDWG	BCAWQG	2002	2003	2004	2005	2006	2007	2008	2009	2010
Color	CU	15	</=15    AO	8	13	6	5	<5	8	7	12	
Conductivity	µS		700    MAC	275	363	357	340	311	339	338	336	
Total Dissolved Solids	mg/L	500	</=500    AO	127	207	220	280	200	207	228	190	
Hardness (CaCO3)	mg/L	80-100	</=500    AO	<b>37.2</b>	<b>30</b>	<b>28</b>	<b>25</b>	<b>27</b>	<b>30</b>	<b>33</b>	<b>31</b>	
pH	pH units	6.5-8.5	6.5-8.5    AO	8.50	8.48	<b>8.7</b>	8.50	8.4	8.34	8.64	8.6	
Turbidity	NTU's	5	1    MAC	0.10	0.41	<0.5	<0.5	0.6	<0.5	<0.5	0.8	
Alkalinity	mg/L			126	160	140	140	130	130	130	130	
Chloride	mg/L	250	</=250    AO	15.35	22.6	23.9	20.5	17.1	19.1	21.3	20.1	
Fluoride	mg/L	1.5	1.5    MAC	0.13	<0.6	<1.0	<1.0	<1.0	<1.0	1.3	<1.0	
Sulfate	mg/L	500	</=500    AO	1.90	1.70	<2	4.80	3.6	4.5	5	5.1	
Nitrate (N)	mg/L	10	10    MAC	<0.01	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	
Nitrite (N)	mg/L	1		<0.01	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	
T-Aluminium	mg/L		0.2    MAC	0.024	<0.005	0.017	<0.005	0.027	0.007	<0.005	<0.005	
T-Antimony	mg/L		0.006    MAC	<0.0002	<0.0002	<0.0002	<0.0002	<0.0004	<0.0002	<0.0002	<0.0002	
T-Arsenic	mg/L	0.025	0.025    IMAC	0.0103	0.0106	0.0113	0.0099	0.0089	0.0088	0.0089	0.0084	
T-Barium	mg/L	1.0	1    MAC	0.010	0.011	0.011	0.010	0.009	0.01	0.009	0.01	
T-Boron	mg/L	5.0	5    MAC	0.119	0.185	0.212	0.192	0.16	0.18	0.171	0.162	
T-Cadmium	mg/L	0.005		<0.00001	<0.00001	<0.00001	<0.00001	<0.00002	<0.00001	<0.00001	<0.00001	
T-Calcium	mg/L			10.3	8.1	<0.2	6.6	7.5	7.9	8.61	8.07	
T-Chromium	mg/L	0.05	0.05    MAC	<0.0005	<0.0005	<0.0005	<0.0005	<0.001	<0.0005	<0.0004	<0.0004	
T-Copper	mg/L	1.0	</=1    MAC	0.002	0.002	0.004	<0.001	<0.002	<0.001	<0.001	0.002	
T-Iron	mg/L	0.3	</=0.3    AO	<0.1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.02	<0.010	
T-Lead	mg/L	0.01	0.01    MAC	0.0002	0.0004	0.0016	0.0002	<0.0002	<0.0001	0.0002	0.0001	
T-Lithium	mg/l										<0.001	
T-Magnesium	mg/L		</=700    AO	2.8	2.3	2.4	2	2.1	2.4	2.77	2.53	
T-Manganese	mg/L	0.05	</=0.05    AO	0.030	0.015	0.018	0.012	0.02	0.013	0.0138	0.0139	
T-Mercury	mg/L	0.001	0.001    MAC	<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										0.31	
T-Potassium	mg/L			1.5	1.4	1.6	1.4	1.5	1.6	1.6	1.7	
T-Selenium	mg/L	0.01	0.01    MAC	<0.0002	<0.0002	0.0009	<0.0002	<0.0004	0.0002	<0.0006	<0.0006	
T-Silver											<0.00001	
T-Sodium	mg/L	200	</=200    AO	48.8	63.1	70.9	68.5	57.1	62.4	63	63.4	
T-Uranium	mg/L	0.1	0.1    MAC	<0.0005	<0.0005	<0.0005	<0.0005	<0.001	<0.0005	<0.0004	<0.0004	
T-Zinc	mg/L	5	<5    AO	0.014	0.003	0.034	0.014	0.028	0.006	0.01	0.005	
Total Coliforms	cfu/100ml	<1	<1    cfu/100ml			<1	<1	<1	<1	<1	<1	
Fecal Coliforms	cfu/100ml	<1	<1    cfu/100ml			<1	<1	<1	<1	<1	<1	
E.coli	cfu/100ml	<1	<1    cfu/100ml					<1	<1	<1	<1	

**Wall Brook Well Water Analysis Results**  
**Wall Brook Well # 1: 1610 Northwest Bay 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			23-Oct	21-Oct	19-Oct	2011	2012	2013	2014	2015	2016
	Units	CDWG	BCAWQG	2008	2009	2010						
Total Ammonia (N)	mg/L					0.12						
Color	CU	15	<=15	AO	<5	10	<b>20</b>					
Conductivity	µS		700	MAC	331	327	321					
Total Dissolved Solids	mg/L	500	<=500	AO	208	208	180					
Hardness (CaCO3)	mg/L	80-100	<=500	AO	<b>140</b>	<b>130</b>	<b>130</b>					
pH	pH units	6.5-8.5	6.5-8.5	AO	8.22	8.10	8.0					
Turbidity	NTU's	5	1	MAC	<0.5	0.80	0.90					
Alkalinity	mg/L				160	160	130					
Chloride	mg/L	250	<=250	AO	7.9	5.7	9.2					
Fluoride	mg/L	1.5	1.5	MAC	<b>1.6</b>	<1.0	<1.0					
Sulfate	mg/L	500	<=500	AO	6.60	6.10	8.80					
Nitrate (N)	mg/L	10	10	MAC	<.01	<.01	<.01					
Nitrite (N)	mg/L	1			<.01	<.01	<.01					
T-Aluminum	mg/L		0.2	MAC	<0.005	0.037	<0.005					
T-Antimony	mg/L		0.006	MAC	<0.0002	<0.0002	<0.0002					
T-Arsenic	mg/L	0.025	0.025	IMAC	0.0029	0.0033	0.0031					
T-Barium	mg/L	1.0	1	MAC	0.014	0.015	0.014					
T-Boron	mg/L	5.0	5	MAC	0.051	0.05	0.048					
T-Cadmium	mg/L	0.005			<0.00001	<0.00001	0.00001					
T-Calcium	mg/L				35	31.9	32.5					
T-Chromium	mg/L	0.05	0.05	MAC	<0.0004	<0.0004	0.001					
T-Copper	mg/L	1.0	<=1	MAC	0.003	0.005	0.011					
T-Iron	mg/L	0.3	<=0.3	AO	<0.02	0.036	<0.01					
T-Lead	mg/L	0.01	0.01	MAC	0.0006	0.001	0.0011					
T-Lithium	mg/L					<0.001	<0.001					
T-Magnesium	mg/L		<=700	AO	12.6	11.8	11.1					
T-Manganese	mg/L	0.05	<=0.05	AO	<b>0.107</b>	<b>0.113</b>	<b>0.104</b>					
T-Mercury	mg/L	0.001	0.001	MAC	<0.01	<0.01	<0.00001					
T-Nickel	mg/L					<0.00001	<0.001					
T-Phosphorus	mg/L					0.157	0.138					
T-Potassium	mg/L				1.4	1.4	1.1					
T-Selenium	mg/L	0.01	0.01	MAC	<0.0006	<0.0006	<0.0006					
T-Silver	mg/L					<0.00001	<0.00001					
T-Sodium	mg/L	200	<=200	AO	20.5	18.2	20.6					
T-Uranium	mg/L	0.1	0.1	MAC	<0.0004	<0.0004	<0.0004					
T-Zinc	mg/L	5	<5	AO	0.016	0.034	0.019					
Total Coliforms	cfu/100ml	<1	<1	cfu/100ml	<1	<1	<1.0					
Fecal Coliforms	cfu/100ml	<1	<1	cfu/100ml	<1	<1	<1.0					
E.coli	cfu/100ml	<1	<1	cfu/100ml	<1	<1	<1.0					

## Madrona Well Water Analysis Results

### Madrona Well # 8: Stonelake 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			23-Oct	21-Oct	19-Oct	2011	2012	2013	2014	2015	2016
	Units	CDWG	BCAWQG	2008	2009	2010						
Total Ammonia (N)	mg/L					<0.01						
Color	CU	15	<=15	AO	<5	71	<5					
Conductivity	µS		700	MAC	325	336	351					
Total Dissolved Solids	mg/L	500	<=500	AO	222	204	192					
Hardness (CaCO3)	mg/L	80-100	<=500	AO	160	160	180					
pH	pH units	6.5-8.5	6.5-8.5	AO	8.17	7.90	7.8					
Turbidity	NTU's	5	1	MAC	<0.5	0.70	<0.5					
Alkalinity	mg/L				140	150	140					
Chloride	mg/L	250	<=250	AO	10.3	8	8.6					
Fluoride	mg/L	1.5	1.5	MAC	1.7	<1.0	<1.0					
Sulfate	mg/L	500	<=500	AO	10.80	9.50	10.00					
Nitrate (N)	mg/L	10	10	MAC	1.4	1.3	<0.1					
Nitrite (N)	mg/L	1			<0.1	<0.1	<0.1					
T-Aluminum	mg/L		0.2	MAC	<0.005	<0.005	<0.005					
T-Antimony	mg/L		0.006	MAC	<0.0002	<0.0002	<0.0002					
T-Arsenic	mg/L	0.025	0.025	IMAC	0.0016	0.0016	0.0014					
T-Barium	mg/L	1.0	1	MAC	0.007	0.008	0.008					
T-Boron	mg/L	5.0	5	MAC	0.016	0.014	0.015					
T-Cadmium	mg/L	0.005			<0.00001	<0.00001	<0.00001					
T-Calcium	mg/L				44.3	42.4	48.4					
T-Chromium	mg/L	0.05	0.05	MAC	0.0007	0.0008	0.0014					
T-Copper	mg/L	1.0	<=1	MAC	0.006	0.192	0.005					
T-Iron	mg/L	0.3	<=0.3	AO	<0.02	1.28	<0.01					
T-Lead	mg/L	0.01	0.01	MAC	0.0004	0.0235	0.0005					
T-Lithium	mg/L					0.001	0.001					
T-Magnesium	mg/L		<=700	AO	12.7	12.2	13.2					
T-Manganese	mg/L	0.05	<=0.05	AO	0.000	0.003	<0.005					
T-Mercury	mg/L	0.001	0.001	MAC	<0.01	<0.01	<0.00001					
T-Nickel	mg/L					0.001	<0.001					
T-Phosphorus	mg/L						0.017					
T-Potassium	mg/L				0.7	0.7	0.4					
T-Selenium	mg/L	0.01	0.01	MAC	<0.0006	<0.0006	<0.0006					
T-Silver	mg/L					0.00001	<0.00001					
T-Sodium	mg/L	200	<=200	AO	7.8	7.03	7.12					
T-Uranium	mg/L	0.1	0.1	MAC	<0.0004	<0.0004	<0.0004					
T-Zinc	mg/L	5	<5	AO	0.008	0.077	0.006					
Total Coliforms	cfu/100ml	<1	<1	cfu/100ml	<1	<1	<1.0					
Fecal Coliforms	cfu/100ml	<1	<1	cfu/100ml	<1	<1						
E.coli	cfu/100ml	<1	<1	cfu/100ml	<1	<1	<1.0					

## West Bay Well Water Analysis Results

**West Bay Well # 3: 2473 Nanoose 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			16-Oct	22-Oct	26-Oct	19-Oct	24-Oct	23-Oct	23-Oct	21-Oct	19-Oct	
	Units	CDWG	BCAWQG	2002	2003	2004	2005	2006	2007	2008	2009	2010	
Total Ammonia (N)	mg/L											0.8	
Color	CU	15	<=15	AO	<b>18</b>	13	11	14	8	14	<b>35</b>	<b>36</b>	<b>15</b>
Conductivity	µS		700	MAC	310	308	304	301	296	301	301	314	301
Total Dissolved Solids	mg/L	500	<=500	AO	160	187	160	184	150	200	198	204	152
Hardness (CaCO3)	mg/L	80-100	<=500	AO	<b>106</b>	<b>109</b>	<b>73</b>	<b>110</b>	100	<b>110</b>	<b>110</b>	100	<b>110</b>
pH	pH units	6.5-8.5	6.5-8.5	AO	7.72	7.61	7.8	8	7.9	8.12	8.06	7.8	7.9
Turbidity	NTU's	5	1	MAC	0.76	0.76	1.1	0.7	0.6	0.6	1.8	0.5	0.6
Alkalinity	mg/L				144	160	150	150	150	140	140	140	140
Chloride	mg/L	250	<=250	AO	6.76	6.7	8.1	6.5	7	7.4	8.2	12.7	6.6
Fluoride	mg/L	1.5	1.5	MAC	0.17	<0.6	<1.0	<1.0	<1.0	<1.0	1.1	<1.0	<1.0
Sulfate	mg/L	500	<=500	AO	0.28	2.1	<2	<2	<2.0	<2.0	<2.0	<2.0	3.1
Nitrate (N)	mg/L	10	10	MAC	<0.01	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Nitrite (N)	mg/L	1			<0.01	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
T-Aluminum	mg/L		0.2	MAC	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<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	<0.0002
T-Arsenic	mg/L	0.025	0.025	IMAC	0.0004	0.0004	0.0003	0.0004	0.0003	0.0003	0.0004	0.0006	0.0005
T-Barium	mg/L	1.0	1	MAC	0.006	0.006	0.005	0.006	0.006	0.006	0.006	0.005	0.005
T-Boron	mg/L	5.0	5	MAC	0.049	0.064	0.059	0.071	0.066	0.073	0.067	0.064	0.061
T-Cadmium	mg/L	0.005			<0.0001	<.00001	<0.00001	<0.00001	<0.00001	0.00012	0.00002	<0.00001	<0.00001
T-Calcium	mg/L				26.1	27.2	18.6	27.7	25.8	27.2	28.4	25.6	28
T-Chromium	mg/L	0.05	0.05	MAC	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0004	<0.0004	0.0008
T-Copper	mg/L	1.0	<=1	MAC	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.002	0.008	0.001
T-Iron	mg/L	0.3	<=0.3	AO	<b>0.6</b>	<b>0.5</b>	<b>0.4</b>	<b>0.5</b>	<b>0.5</b>	<b>0.5</b>	<b>0.61</b>	<b>0.49</b>	<b>0.309</b>
T-Lead	mg/L	0.01	0.01	MAC	0.0002	0.0002	0.0004	0.0002	0.0001	<0.0001	0.0014	<0.0001	0.0002
T-Lithium	mg/L											<0.001	<0.001
T-Magnesium	mg/L		<=700	AO	9.9	10.1	6.5	9.4	9	9.4	10.3	9.44	9.74
T-Manganese	mg/L	0.05	<=0.05	AO	<b>0.201</b>	<b>0.19</b>	<b>0.132</b>	<b>0.202</b>	<b>0.188</b>	<b>0.203</b>	<b>0.199</b>	<b>0.206</b>	<b>0.218</b>
T-Mercury	mg/L	0.001	0.001	MAC	<0.0002	<0.0002	<0.0002	<0.0001	<0.0001	<0.0001	<.01	<0.01	<0.00001
T-Nickel	mg/L											<0.001	<0.001
T-Phosphorus	mg/L											0.765	0.782
T-Potassium	mg/L				2.2	2.5	1.6	2.4	2.3	2.4	2.4	2.4	2
T-Selenium	mg/L	0.01	0.01	MAC	<0.0002	<0.0002	0.0002	<0.0002	<0.0002	0.0002	<0.0006	<0.0006	<0.0006
T-Silver	mg/L											<0.00001	<0.00001
T-Sodium	mg/L	200	<=200	AO	19.6	20.1	14.2	21.6	20	20.8	22	25.5	21.8
T-Uranium	mg/L	0.1	0.1	MAC	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0004	<0.0004	<0.0004
T-Zinc	mg/L	5	<5	AO	0.008	0.009	0.001	0.004	0.006	0.007	0.114	0.011	0.062
Total Coliform	cfu/100ml	<1	<1	cfu/100ml			<1	<1	<1	<1	<1	<1.0	<1.0
Fecal Coliform	cfu/100ml	<1	<1	cfu/100ml			<1	<1	<1	<1	<1	<1.0	<1.0
E.coli	cfu/100ml	<1	<1	cfu/100ml			<1	<1	<1	<1	<1	<1.0	<1.0



## Nanoose Distribution Water Analysis Results

Location: 1961 Harlequin Crescent

Canadian Drinking Water Guidelines Package

\* 2001 sample collected at 1270 Seadog

~Second 2010 Sample Collected at 1270 Sea Dog Road

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				28-Jun				20-Apr	17-May	22-May	27-May	13-May	18-May	18-May	
	Units	CDWG	BCAWQG		2001*	2002	2003	2004	2005	2006	2007	2008	2009	2010	2010~	2011
Color	CU	15	</=15	AO	27	45	14	22	6	14	12	18	19	6	<5	
Conductivity	uS		700	MAC	349	304	362	357	356	357	358	372	385	368	354	
TDS	mg/L	500	</=500	AO	200	193	187	233	210	233	206	238	260	236	236	
Hardness (CaCO3)	mg/L	80-100	</=500	AO	132.1	128	149.3	140	140	140	150	130	170	150	130	
pH	pH units	6.5-8.5	6.5-8.5	AO	7.69	7.52	7.68	7.8	7.6	7.7	7.7	7.86	7.8	7.8	8	
Turbidity	NTU's	5	1	MAC	0.84	0.27	0.36	0.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
Alkalinity	mg/L				145	144	150	150	150	150	150	150	150	150	150	
Chloride	mg/L	250	</=250	AO	14.4	11.28	9.42	11.6	10.9	12.8	9	13.1	14.2	9.9	9.8	
Fluoride	mg/L	1.5	1.5	MAC	0.15	0.14	0.08	<1.0	<1.0	0.2	<1.0	<1.0	<1.0	<1.0	<1.0	
Sulfate	mg/L	500	</=500	AO	15.4	12.07	23.65	22.8	15.5	14.9	15.3	15.4	21.2	18.6	14.2	
Nitrate	mg/L	10	10	MAC	0.092	0.04	0.1	0.2	0.3	0.04	<0.1	<0.1	0.2	<0.1	<0.1	
Nitrite	mg/L	1			<0.002	0.04	<0.01	<0.01	<0.1	<0.01	<0.1	<0.1	0.1	<0.1	<0.1	
T-Aluminum	mg/L		0.2	MAC	0.014	<.009	0.006	<0.005	<0.005	<0.005	0.013	<0.05	<0.005	0.009	0.009	
T-Antimony	mg/L		0.006	MAC	<.006	<.006	0.0003	<0.0002	<0.0002	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	
T-Arsenic	mg/L	0.025	0.025	IMAC	<.01	<.01	0.001	0.0011	0.001	0.0011	0.0009	0.004	0.0009	0.0013	0.0014	
T-Barium	mg/L	1.0	1	MAC	0.0169	0.0121	0.033	0.015	0.023	0.028	0.03	0.02	0.032	0.026	0.014	
T-Boron	mg/L	5.0	5	MAC	0.065	0.058	0.055	0.065	0.052	0.058	0.069	0.05	0.074	0.06	0.066	
T-Cadmium	mg/L	0.005			<.0006	<.0006	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.0003	<0.00001	<0.00001	<0.00001	
T-Calcium	mg/L				34.6	32.1	45.3	35	41.1	40.7	44.6	37.6	51.8	44.3	35.2	
T-Chromium	mg/L	0.05	0.05	MAC	<.0009	<.0009	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.003	<0.0004	<0.0004	<0.0004	
T-Copper	mg/L	1.0	</=1	MAC	0.002	0.002	0.004	0.004	0.002	0.004	0.005	<0.005	0.004	0.003	0.005	
T-Iron	mg/L	0.3	</=0.3	AO	0.507	0.199	0.2	<0.1	<0.1	<0.1	<0.1	0.07	0.03	0.094	0.044	
T-Lead	mg/L	0.01	0.01	MAC	<.002	<.002	0.0002	0.0003	0.0003	0.0004	0.0005	<0.0005	0.0005	0.0002	0.0003	
T-Lithium	mg/L												0.002	0.002	0.001	
T-Magnesium	mg/L		</=700	AO	11.1	11.6	8.8	11.6	9.5	8.2	9.5	9	9.66	9.05	10.9	
T-Manganese	mg/L	0.05	</=0.05	AO	0.208	0.175	0.118	0.102	0.083	0.11	0.123	0.134	0.0997	0.0921	0.106	
T-Mercury	mg/L	0.001	0.001	MAC	<.0001	<.0001	<0.0002	<0.0002	<0.0002	<0.0001	<0.0001	<0.01	<0.01	<0.01	<0.01	
T-Nickel	mg/L												<0.001	<0.001	<0.001	
T-Phosphorus	mg/L												0.349	0.349	0.459	
T-Potassium	mg/L				2.2	2.4	2	2.5	2	2.1	2.2	2	2.2	1.9	2.3	
T-Selenium	mg/L	0.01	0.01	MAC	<.004	0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.003	<0.0006	<0.0006	<0.0006	
T-Silver	mg/L												<0.00001	<0.00001	<0.00001	
T-Sodium	mg/L	200	</=200	AO	20.1	23.3	16.2	22.3	19	21.1	19.7	21.9	23.6	20.2	23.6	
T-Uranium	mg/L	0.1	0.1	MAC	<.06	<.02	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.002	<0.0004	<0.0004	<0.0004	
T-Zinc	mg/L	5	<5	AO	0.0029	0.0028	0.017	0.004	0.013	0.022	0.025	0.01	0.017	0.008	0.002	
Total Coliform	cfu/100ml	<1	<1	cfu/100ml	<1	n/a	n/a	<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0	
Fecal Coliform	cfu/100ml	<1	<1	cfu/100ml	<1	n/a	n/a	<1	<1	<1	<1					
E.coli	cfu/100ml	<1	<1	cfu/100ml						<1	<1	<1.0	<1.0	<1.0	<1.0	
Tannins & Lignins					n/a	0.15	n/a	n/a	n/a	n/a	n/a					
Trihalomethanes	mg/l	0.1		MAC	n/a	n/a	n/a	n/a		0.01	n/a					



## Fairwinds Distribution Water Analysis Results

Location: 3500 Fairwinds Drive

Canadian Drinking Water Guidelines Package

\*2001 Sample Collected at 3541 Shelby Lane

#Second 2010 Sample Collected at 3429 Redden Road



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				14-Apr 2000	28-Jun 2001*	6-Mar 2002	23-Apr 2003	2004	20-Apr 2005	17-May 2006	22-May 2007	27-May 2008	13-May 2009	18-May 2010	18-May 2010#
	Units	CDWG	BCAWQG													
Color	CU	15	<=15	AO	15	12	13	10	24	20	28	19	24	55	19	7
Conductivity	uS		700	MAC	291	352	327	355	376	380	386	352	380	394	354	360
TDS	mg/L	500	<=500	AO	211	193	193	187	210	200	260	200	250	258	234	224
Hardness (CaCO3)	mg/L	80-100	<=500	AO	88	109.8	108	110.4	110	110	110	120	100	120	120	120
pH	pH units	6.5-8.5	6.5-8.5	AO	7.35	7.63	7.53	7.58	7.8	7.7	7.7	7.4	7.86	7.8	7.7	7.7
Turbidity	NTU's	5	1	MAC	1.1	0.15	0.4	0.38	0.9	1	0.9	<0.5	1.2	1.5	0.9	<0.5
Alkalinity	mg/L				151	138	138	142	140	150	150	150	140	140	140	140
Chloride	mg/L	250	<=250	AO	12.5	21.9	21.52	17.16	25.6	27.9	29.4	20.6	28.7	35.6	20.1	20.7
Fluoride	mg/L	1.5	1.5	MAC	0.12	0.17	0.19	0.12	<1.0	<1.0	0.2	<1.0	<1.0	<1.0	<1.0	<1.0
Sulfate	mg/L	500	<=500	AO	0.5	1.26	0.91	1.36	16.8	<2	2.6	2.9	3.4	4.5	4.6	4.5
Nitrate	mg/L	10	10	MAC	0.33	0.053	0.03	0.17	<0.1	<0.1	0.02	<0.1	<0.1	0.1	<0.1	<0.1
Nitrite	mg/L	1			0.068	0.309	0.03	<0.01	<0.1	<0.1	<0.01	<0.1	<0.1	<0.1	<0.1	<0.1
T-Aluminum	mg/L		0.2	MAC		0.015	<0.009	0.006	<0.005	<0.005	<0.005	<0.005	<0.05	<0.005	0.01	0.008
T-Antimony	mg/L		0.006	MAC		<0.006	<0.006	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002
T-Arsenic	mg/L	0.025	0.025	IMAC	0.001	<0.01	<0.01	0.0009	0.0015	0.001	0.0014	0.0009	<0.001	0.0013	0.001	0.0008
T-Barium	mg/L	1.0	1	MAC	0.005	0.0049	0.0079	0.006	0.007	0.007	0.007	0.007	0.006	0.007	0.007	0.005
T-Boron	mg/L	5.0	5	MAC	0.1	0.071	0.074	0.081	0.085	0.07	0.07	0.075	0.06	0.071	0.071	0.063
T-Cadmium	mg/L	0.005				<0.0006	<0.0006	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.0003	<0.00001	<0.00001	<0.00001
T-Calcium	mg/L					27.3	27.4	26.9	28.1	28.1	26.9	29.5	25	31.2	29.2	28.9
T-Chromium	mg/L	0.05	0.05	MAC		<0.009	<0.0009	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.003	<0.0004	0.0005	<0.0004
T-Copper	mg/L	1.0	<=1	MAC		0.002	0.003	0.005	0.006	0.006	0.004	0.003	<0.005	0.002	0.004	0.003
T-Iron	mg/L	0.3	<=0.3	AO	0.170	0.107	0.686	0.300	0.500	0.500	0.500	0.600	0.510	0.470	0.556	0.093
T-Lead	mg/L	0.01	0.01	MAC		<0.002	0.003	0.0004	0.0003	0.0005	0.0001	0.0001	<0.0005	0.0001	0.0001	0.0001
T-Lithium	mg/L													<0.001	<0.001	<0.001
T-Magnesium	mg/L		<=700	AO	9.24	10.1	9.61	10.5	10.4	10.6	9.5	10.8	9.5	10.9	10.5	10.4
T-Manganese	mg/L	0.05	<=0.05	AO	0.1100	0.0796	0.2590	0.1010	0.1860	0.1900	0.1820	0.2240	0.2200	0.2280	0.2090	0.044
T-Mercury	mg/L	0.001	0.001	MAC		<0.0001	<0.0001	<0.0002	<0.0002	<0.0002	<0.0001	<0.0001	<0.01	<0.01	<0.01	<0.01
T-Nickel	mg/L													<0.001	<0.001	<0.001
T-Phosphorus	mg/L													0.776	0.777	0.635
T-Potassium	mg/L					2.4	2.6	2.5	2.6	2	2.6	2.5	2.4	2.7	2.6	2.5
T-Selenium	mg/L	0.01	0.01	MAC		0.013	<0.002	<0.0002	<0.0002	<0.0002	0.0002	<0.0002	<0.003	<0.0006	<0.0006	<0.0006
T-Silver	mg/L													<0.00001	<0.00001	<0.00001
T-Sodium	mg/L	200	<=200	AO		29.8	31	28.6	36	36	34.8	31.6	35	40.7	31.6	31.8
T-Uranium	mg/L	0.1	0.1	MAC		<0.06	<0.02	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.002	<0.0004	<0.0004	<0.0004
T-Zinc	mg/L	5	<5	AO	0.009	0.0037	0.0046	0.007	0.007	0.006	0.006	0.01	0.007	0.006	0.003	0.004
Total Coliform	cfu/100ml	<1	<1	cfu/100ml	<1	<1	n/a	n/a	<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0
Fecal Coliform	cfu/100ml	<1	<1	cfu/100ml	<1	<1	n/a	n/a	<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0
E.coli	cfu/100ml	<1	<1	cfu/100ml	<1	<1	n/a	n/a	<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0
Tannins & Lignins					n/a	n/a	0.15	n/a	n/a	n/a	n/a					
Trihalomethanes	mg/l	0.1		MAC	n/a	n/a	n/a	n/a	n/a	n/a	0.044					

# Madrona Distribution Water Analysis Results

**Location: 1566 Arbutus Drive**

Canadian Drinking Water Guidelines Package

\* Bulk water online

\*\* Sample collected at 1358 Madrona Drive

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				1999	2000	28-Jun 2001**	06-Mar 2002	2003	2004	20-Apr 2005	17-May 2006*	22-May 2007*	27-May 2008	13-May 2009	18-May 2010
	Units	CDWG	BCAWQG													
Color	CU	15	</=15	AO		7	4	4	9	16	6	7	11	6	<5	20
Conductivity	uS		700	MAC		300	321	324	320	357	356	55.6	62.5	339	338	335
TDS	mg/L	500	</=500	AO		191	180	173	173	233	230	53	38	214	226	224
Hardness (CaCO3)	mg/L	80-100	</=500	AO		77	124.4	29.5	37.3	51	62	21	27	110	130	110
pH	pH units	6.5-8.5	6.5-8.5	AO		8.02	7.92	8.35	8.28	8.1	7.9	6.3	6.8	7.76	8.1	8.1
Turbidity	NTU's	5	1	MAC		0.11	<.05	0.52	0.07	0.5	<0.5	0.6	<0.5	<0.5	<0.5	0.5
Alkalinity	mg/L					141	131	132	136	140	140	19	21	140	140	150
Chloride	mg/L	250	</=250	AO		14.8	15.5	27.82	24.7	23.3	22.9	4.2	4.4	16.7	14.5	11.1
Fluoride	mg/L	1.5	1.5	MAC		0.07	0.09	0.16	0.1	<1.0	<1.0	<0.1	<1.0	<1.0	<1.0	<1.0
Sulfate	mg/L	500	</=500	AO		5.9	12.4	2.52	3.33	10.5	2.6	1.3	<2.0	6.6	8	7
Nitrate	mg/L	10	10	MAC		0.18	<.004	<.002	0.19	0.2	<0.1	0.03	<0.1	0.7	0.9	0.2
Nitrite	mg/L	1				<.002	<.002	<.006	<0.01	<0.1	<0.1	<0.01	<0.1	<0.1	<0.1	<0.1
T-Aluminum	mg/L		0.2	MAC		0.083	0.043	0.046	0.006	0.007	0.008	0.024	0.03	<0.05	<0.005	0.013
T-Antimony	mg/L		0.006	MAC			<.006	<.006	<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		0.005	<.01	0.01	0.0093	0.0093	0.0069	0.0002	<0.0002	0.005	0.0044	0.0039
T-Barium	mg/L	1.0	1	MAC		0.012	0.014	0.0099	0.008	0.012	0.008	0.005	0.005	0.007	0.008	0.012
T-Boron	mg/L	5.0	5	MAC		0.09	0.047	0.187	0.175	0.167	0.13	0.006	0.008	0.05	0.078	0.072
T-Cadmium	mg/L	0.005				<.0002	<.0006	<.0006	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.0003	<0.00001	<0.00001
T-Calcium	mg/L					20.1	32.5	8.1	10	13.6	16	6.7	8.1	27.8	34.9	29.3
T-Chromium	mg/L	0.05	0.05	MAC		<.001	<.0009	<.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		0.008	0.001	0.004	0.007	0.082	0.004	0.013	0.01	<0.005	0.008	0.008
T-Iron	mg/L	0.3	</=0.3	AO		<.05	0.032	0.066	<0.1	0.7	0.1	<0.1	<0.1	0.12	<0.01	<0.01
T-Lead	mg/L	0.01	0.01	MAC		<.001	<.002	<.002	0.0003	0.0049	0.0003	0.0002	0.0003	<0.0005	0.0003	0.0004
T-Lithium	mg/L														0.001	<0.001
T-Magnesium	mg/L		</=700	AO		7.23	10.5	2.26	3	4.2	5.4	1	1.6	8.8	9.36	9.48
T-Manganese	mg/L	0.05	</=0.05	AO		0.038	0.0964	0.0154	0.017	0.101	0.055	0.006	<0.005	0.0788	0.0031	0.0557
T-Mercury	mg/L	0.001	0.001	MAC		<.05	<.0001	<.0001	<0.0002	<0.0002	<0.0002	<0.0001	<0.0001	<0.01	<0.01	<0.01
T-Nickel	mg/L														<0.001	<0.001
T-Phosphorus	mg/L														0.122	0.143
T-Potassium	mg/L					1.21	1.1	1.7	1.7	1.8	2	<0.4	<0.4	1.5	1.2	1.2
T-Selenium	mg/L	0.01	0.01	MAC		<.002	0.005	<.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0003	<0.0006	<0.0006
T-Silver	mg/L														<0.00001	<0.00001
T-Sodium	mg/L	200	</=200	AO		33.3	11.5	66.9	61.5	59.8	53.3	2.3	2.5	26.5	28.8	27.9
T-Uranium	mg/L	0.1	0.1	MAC		<.0005	<.06	<.02	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0004	<0.0004
T-Zinc	mg/L	5	<5	AO		<.005	0.0018	0.0053	0.002	0.006	0.007	0.006	0.015	<0.005	0.008	1
Total Coliform	cfu/100ml	<1	<1	cfu/100ml		<2	<1	n/a	n/a	<1	<1	<1	12	<1.0	<1.0	<1.0
Fecal Coliform	cfu/100ml	<1	<1	cfu/100ml		<2	<1	n/a	n/a	<1	<1	<1	<1			
E.coli	cfu/100ml	<1	<1	cfu/100ml								<1	<1	<1.0	<1.0	<1.0
Tannins & Lignins						n/a	n/a	0.2	n/a	n/a	n/a	n/a				
Trihalomethanes	mg/l	0.1		MAC		n/a	n/a	n/a	n/a	n/a	n/a	0.032				

# West Bay Distribution Water Analysis Results

**Location: 2315 Ida Lane**

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**

Parameters	Water Quality Guidelines				28-Jun		23-Apr		20-Apr	17-May	22-May	27-May	13-May	18-May		
	Units	CDWG	BCAWQG		2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Color	CU	15	</=15	AO	8		11	8	6	18	14	20	12	12		
Conductivity	uS		700	MAC	361		361	374	345	380	352	324	341	349		
TDS	mg/L	500	</=500	AO	187		187	250	220	213	202	212	230	232		
Hardness (CaCO3)	mg/L	80-100	</=500	AO	109.9		110.2	110	110	110	120	100	140	120		
pH	pH units	6.5-8.5	6.5-8.5	AO	7.7		7.78	7.7	7.7	7.8	7.7	7.97	8.1	7.9		
Turbidity	NTU's	5	1	MAC	0.11		0.16	0.6	<0.5	<0.5	<0.5	0.9	<0.5	<0.5		
Alkalinity	mg/L				145		147	140	150	160	310	140	150	150		
Chloride	mg/L	250	</=250	AO	10.8		17.62	24.3	17.7	27.3	19.3	10.8	15.6	15.7		
Fluoride	mg/L	1.5	1.5	MAC	0.17		0.11	<1.0	<1.0	0.2	<1.0	<1.0	<1.0	<1.0		
Sulfate	mg/L	500	</=500	AO	1.48		1.81	11.9	<2	2.6	2.9	<2.0	5	5.8		
Nitrate	mg/L	10	10	MAC	0.593		<0.01	<0.1	<0.1	0.04	<0.1	<0.1	<0.1	<0.1		
Nitrite	mg/L	1			<0.002		<0.01	<0.1	<0.1	<0.01	<0.1	<0.1	0.1	<0.1		
T-Aluminum	mg/L		0.2	MAC	0.014		0.005	<0.005	<0.005	<0.005	<0.005	<0.05	<0.005	0.015		
T-Antimony	mg/L		0.006	MAC	<0.006		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.001	<0.0002	<0.0002		
T-Arsenic	mg/L	0.025	0.025	IMAC	<0.01		0.0009	0.0012	0.0009	0.0013	0.0008	0.002	0.0018	0.001		
T-Barium	mg/L	1.0	1	MAC	<0.0006		0.005	0.005	0.005	0.005	0.005	<0.005	0.007	0.006		
T-Boron	mg/L	5.0	5	MAC	<0.008		0.08	0.084	0.066	0.07	0.078	0.05	0.063	0.068		
T-Cadmium	mg/L	0.005			<0.0006		<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.0003	<0.00001	<0.00001		
T-Calcium	mg/L				27.5		27.3	28.9	27.8	28.6	30.6	25.5	35.8	31.2		
T-Chromium	mg/L	0.05	0.05	MAC	<0.0009		<0.0005	<0.0003	<0.0005	<0.0005	<0.0005	<0.003	<0.0004	0.0004		
T-Copper	mg/L	1.0	</=1	MAC	0.002		0.002	0.001	0.002	0.005	0.002	<0.005	0.001	0.003		
T-Iron	mg/L	0.3	</=0.3	AO	0.092		0.2	<0.1	0.2	<0.1	<0.1	0.35	0.19	0.046		
T-Lead	mg/L	0.01	0.01	MAC	<0.002		0.0003	0.0001	0.0003	0.0001	0.0001	<0.0005	0.0002	0.0002		
T-Lithium	mg/L												<0.001	<0.001		
T-Magnesium	mg/L		</=700	AO	10		10.2	10.3	10.3	9.7	10.8	8.9	11.3	9.82		
T-Manganese	mg/L	0.05	</=0.05	AO	0.13		0.174	0.142	0.15	0.087	0.099	0.208	0.136	0.0912		
T-Mercury	mg/L	0.001	0.001	MAC	<0.0001		<0.0002	<0.0002	<0.0002	<0.0001	<0.0001	<0.01	<0.01	<0.01		
T-Nickel	mg/L												<0.001	<0.001		
T-Phosphorus	mg/L												0.526	0.564		
T-Potassium	mg/L				2.3		2.7	2.6	2	2.7	2.6	2.3	2.3	2.4		
T-Selenium	mg/L	0.01	0.01	MAC	<0.004		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.003	<0.0006	<0.0006		
T-Silver	mg/L												<0.00001	<0.00001		
T-Sodium	mg/L	200	</=200	AO	30.7		28.9	35.4	29	34.9	31.3	23.5	26.9	26.7		
T-Uranium	mg/L	0.1	0.1	MAC	<0.06		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.002	<0.0004	<0.0004		
T-Zinc	mg/L	5	<5	AO	0.0018		0.003	0.004	0.006	0.005	0.009	<0.005	0.006	0.003		
Total Coliform	cfu/100ml	<1	<1	cfu/100ml	<1		n/a	<1	<1	<1	<1	<1.0	<1.0	<1.0		
Fecal Coliform	cfu/100ml	<1	<1	cfu/100ml	<1		n/a	<1	<1	<1	<1					
E.coli	cfu/100ml	<1	<1	cfu/100ml						<1	<1	<1.0	<1.0	<1.0		
Tannins & Lignins							n/a	n/a	n/a	n/a	n/a					
Trihalomethanes	mg/l	0.1		MAC			n/a	n/a	n/a	0.03	n/a					



# Regional District of Nanaimo - Water Services Department

## Nanoose Water Analysis - 2010 Monthly Report



Date	Sample Location (Address)	Health Department		In-House									
		Fecal Coliform *	Total Coliform *	Fecal Coliform *	Total Coliform *	Temp. (°C)	pH	Free Chlorine Residual (mg/L)	Total Dissolved Solids (mg/L)	Salinity (%)	Conductivity (µS/cm)	Total Iron (mg/L)	Manganese (mg/L)
5-Jan-10	1961 Harlequin	0	0	0	0	7	7.2	0.08	166	0.2	352	0.15	0.079
12-Jan-10	1270 Seadog	0	0	0	0	8	7.2	0.17	158	0.2	332		
20-Jan-10	1900 Sea Otter	0	0	0	0	8		0.12	166	0.2	349		
26-Jan-10	1597 Haida Way	0	0	0	0	8	7.3	0.10	158	0.2	322		
	<b>Average</b>	0	0	0	0	7.8	7.2	0.12	162.0	0.2	338.8	0.15	0.079
	<b>Maximum</b>	0	0	0	0	8	7.3	0.17	166	0.2	352	0.15	0.079
	<b>Minimum</b>	0	0	0	0	7	7.2	0.08	158	0.2	322	0.15	0.079

**Red font indicates non-compliance with Canadian Drinking Water Guidelines**

Aesthetic Objective for Iron is • 0.3 mg/L

Aesthetic Objective for Manganese is • 0.05mg/L

\*Coliforms are measured in colony forming units (CFU) per 100 millilitres of water (CFU/100mL)

Yellow Column Coliform tests are completed by Health Department

Blue column 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.



# Regional District of Nanaimo - Water Services Department

## Nanoose Water Analysis - 2010 Monthly Report



Date	Sample Location (Address)	Health Department		In-House									
		Fecal Coliform *	Total Coliform *	Fecal Coliform *	Total Coliform *	Temp. (°C)	pH	Free Chlorine Residual (mg/L)	Total Dissolved Solids (mg/L)	Salinity (%)	Conductivity (µS/cm)	Total Iron (mg/L)	Manganese (mg/L)
9-Feb-10	1961 Harlequin	0	0	0	0	8	7.2	0.02	157	0.2	332	0.18	0.177
17-Feb-10	1639 Marina Way	0	0	0	0	9	7.1	0.06	153	0.2	322		
17-Feb-10	1900 Sea Otter PI	0	0	0	0	8	6.7	0.05	159	0.2	335		
23-Feb-10	1270 Sea Dog	0	0	0	0	8	6.9	0.08	156	0.2	328		
	<b>Average</b>	0	0	0	0	8.3	7.0	0.05	156.3	0.2	329.3	0.18	0.177
	<b>Maximum</b>	0	0	0	0	9	7.2	0.08	159	0.2	335	0.18	0.177
	<b>Minimum</b>	0	0	0	0	8	6.7	0.02	153	0.2	322	0.18	0.177

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# Regional District of Nanaimo - Water Services Department

## Nanoose Water Analysis - 2010 Monthly Report



Date	Sample Location (Address)	Health Department		In-House									
		Fecal Coliform *	Total Coliform *	Fecal Coliform *	Total Coliform *	Temp. (°C)	pH	Free Chlorine Residual (mg/L)	Total Dissolved Solids (mg/L)	Salinity (%)	Conductivity (µS/cm)	Total Iron (mg/L)	Manganese (mg/L)
3-Mar-10	1961 Harlequin	0	0	0	0	8	7.2	0.04	160	0.2	337	0.16	0.117
9-Mar-10	1639 Marina Way	0	0	0	0	9	7.2	0.05	156	0.2	329		
17-Mar-10	1900 Sea Otter	0	0	0	0	8	6.9	0.06	163	0.2	343		
24-Mar-10	1270 Sea Dog	0	0	0	0	9	7.2	0.07	156	0.2	327		
30-Mar-10	1900 Sea Otter			0	0	9	7.2	0.04	162	0.2	342		
	<b>Average</b>	0	0	0	0	8.6	7.1	0.05	159.4	0.2	335.6	0.16	0.117
	<b>Maximum</b>	0	0	0	0	9	7.2	0.07	163	0.2	343	0.16	0.117
	<b>Minimum</b>	0	0	0	0	8	6.9	0.04	156	0.2	327	0.16	0.117

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# Regional District of Nanaimo - Water Services Department

## Nanoose Water Analysis - 2010 Monthly Report



Date	Sample Location (Address)	Health Department		In-House									
		Fecal Coliform *	Total Coliform *	Fecal Coliform *	Total Coliform *	Temp. (°C)	pH	Free Chlorine Residual (mg/L)	Total Dissolved Solids (mg/L)	Salinity (%)	Conductivity (µS/cm)	Total Iron (mg/L)	Manganese (mg/L)
7-Apr-10	1639 Marina Way			0	0	9	7.2	0.07	156	0.2	329	0.21	0.137
13-Apr-10	1961 Harlequin	0	0	0	0	9	7.1	0.07	162	0.2	340		
20-Apr-10	1270 Seadog	0	0	0	0	11	6.8	0.07	143	0.1	301		
27-Apr-10	1900 Sea Otter	0	0	0	0	11	7.1	0.04	160	0.2	337		
	<b>Average</b>	0	0	0	0	10.0	7.1	0.06	155.3	0.2	326.8	0.21	0.137
	<b>Maximum</b>	0	0	0	0	11	7.2	0.07	162	0.2	340	0.21	0.137
	<b>Minimum</b>	0	0	0	0	9	6.8	0.04	143	0.1	301	0.21	0.137

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# Regional District of Nanaimo - Water Services Department

## Nanoose Water Analysis - 2010 Monthly Report



Date	Sample Location (Address)	Health Department		In-House									
		Fecal Coliform *	Total Coliform *	Fecal Coliform *	Total Coliform *	Temp. (°C)	pH	Free Chlorine Residual (mg/L)	Total Dissolved Solids (mg/L)	Salinity (%)	Conductivity (µS/cm)	Total Iron (mg/L)	Manganese (mg/L)
4-May-10	1639 Marina Way			0	0	11	7.3	2.2	163	0.2	340	0.39	0.152
12-May-10	1961 Harlequin	0	0	0	0	12	7.1	0.05	170	0.2	358		
19-May-10	1270 Seadog	0	0	0	0	12	7.5	2.01	161	0.2	332		
25-May-10	1909 Sea Otter	0	0	0	0	n/a	7.5	1.2	149	0.1	312		
	<b>Average</b>	0	0	0	0	11.7	7.4	1.37	160.8	0.2	335.5	0.39	0.152
	<b>Maximum</b>	0	0	0	0	12	7.5	2.2	170	0.2	358	0.39	0.152
	<b>Minimum</b>	0	0	0	0	11	7.1	0.05	149	0.1	312	0.39	0.152

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# Regional District of Nanaimo - Water Services Department

## Nanoose Water Analysis - 2010 Monthly Report



Date	Sample Location (Address)	Health Department		In-House									
		Fecal Coliform *	Total Coliform *	Fecal Coliform *	Total Coliform *	Temp. (°C)	pH	Free Chlorine Residual (mg/L)	Total Dissolved Solids (mg/L)	Salinity (%)	Conductivity (µS/cm)	Total Iron (mg/L)	Manganese (mg/L)
9-Jun-10	1639 Marina Way	0	0	0	0		7.6	0.68	135	0.1	284	0.29	0.148
15-Jun-10	1900 Sea Otter	0	0	0	0		7.4	0.02	120	0.1	253		
22-Jun-10	1270 Sea Dog	0	0	0	0		7.4	0.05	109	0.1	229		
29-Jun-10	1961 Harlequin	0	0	0	0		7	0.08	136	0.1	286		
	<b>Average</b>	0	0	0	0	#DIV/0!	7.4	0.21	125.0	0.1	263.0	0.29	0.148
	<b>Maximum</b>	0	0	0	0	0	7.6	0.68	136	0.1	286	0.29	0.148
	<b>Minimum</b>	0	0	0	0	0	7	0.02	109	0.1	229	0.29	0.148

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Aesthetic Objective for Iron is • 0.3 mg/L

Aesthetic Objective for Manganese is • 0.05mg/L

\*Coliforms are measured in colony forming units (CFU) per 100 millilitres of water (CFU/100mL)

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**Comments:**

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



# Regional District of Nanaimo - Water Services Department

## Nanoose Water Analysis - 2010 Monthly Report



Date	Sample Location (Address)	Health Department		In-House									
		Fecal Coliform *	Total Coliform *	Fecal Coliform *	Total Coliform *	Temp. (°C)	pH	Free Chlorine Residual (mg/L)	Total Dissolved Solids (mg/L)	Salinity (%)	Conductivity (µS/cm)	Total Iron (mg/L)	Manganese (mg/L)
6-Jul-10	1639 Marina			0	0		7.6	0.47	109	0.1	161	0.04	0.02
13-Jul-10	1270 Seadog	0	0	0	0		7.5	0.14	113	0.1	239		
21-Jul-10	1900 Sea Otter	0	0	0	6	18	7.6	0.06	113	0.1	238		
27-Jul-10	1961 Harlequin	0	0	0	0	18	7.7	0.05	114	0.1	250		
	<b>Average</b>	0	0	0	1.5	18.0	7.6	0.18	112.3	0.1	222.0	0.04	0.02
	<b>Maximum</b>	0	0	0	6	18	7.7	0.47	114	0.1	250	0.04	0.02
	<b>Minimum</b>	0	0	0	0	18	7.5	0.05	109	0.1	161	0.04	0.02

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\*Coliforms are measured in colony forming units (CFU) per 100 millilitres of water (CFU/100mL)

Yellow Column Coliform tests are completed by Health Department

Blue column 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.

Total coliforms can be an indicator of adverse water quality if the result in the resample is positive (US Environmental Protection Agency). 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. If background bacteria (BG), total or fecal bacteria are detected location is resampled. If the bacteria test is overgrown (OG) location is also resampled.



# Regional District of Nanaimo - Water Services Department

## Nanoose Water Analysis - 2010 Monthly Report



Date	Sample Location (Address)	Health Department		In-House									
		Fecal Coliform *	Total Coliform *	Fecal Coliform *	Total Coliform *	Temp. (°C)	pH	Free Chlorine Residual (mg/L)	Total Dissolved Solids (mg/L)	Salinity (%)	Conductivity (µS/cm)	Total Iron (mg/L)	Manganese (mg/L)
4-Aug-10	1639 Marina Way			0	0	14	7.2	0.09	129	0.1	269	0.32	0.126
9-Aug-10	1900 Sea Otter	0	0	0	BG	18	7.3	0.02	125	0.1	260		
12-Aug-10	1900 Sea Otter			0	0								
17-Aug-10	1270 Sea Dog	0	0	0	0	18	7.2	0.02	129	0.1	272		
23-Aug-10	1961 Harlequin	0	0	0	0	18	7.5	0.13	122	0.1	234		
31-Aug-10	1270 Sea Dog			0	0	15	7.4	0.03	13	0.1	286		
	<b>Average</b>	0	0	0	0	16.6	7.3	0.06	103.6	0.1	264.2	0.32	0.126
	<b>Maximum</b>	0	0	0	0	18	7.5	0.13	129	0.1	286	0.32	0.126
	<b>Minimum</b>	0	0	0	0	14	7.2	0.02	13	0.1	234	0.32	0.126

Red font indicates non-compliance with Canadian Drinking Water Guidelines

Aesthetic Objective for Iron is • 0.3 mg/L

Aesthetic Objective for Manganese is • 0.05mg/L

BG-Background levels of bacteria.

\*Coliforms are measured in colony forming units (CFU) per 100 millilitres of water (CFU/100mL)

Yellow Column Coliform tests are completed by Health Department

Blue column 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.

Total coliforms can be an indicator of adverse water quality if the result in the resample is positive (US Environmental Protection Agency). 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. If background bacteria (BG), total or fecal bacteria are detected location is resampled. If the bacteria test is overgrown (OG) location is also resampled.



# Regional District of Nanaimo - Water Services Department

## Nanoose Water Analysis - 2010 Monthly Report



Date	Sample Location (Address)	Health Department		In-House									
		Fecal Coliform *	Total Coliform *	Fecal Coliform *	Total Coliform *	Temp. (°C)	pH	Free Chlorine Residual (mg/L)	Total Dissolved Solids (mg/L)	Salinity (%)	Conductivity (µS/cm)	Total Iron (mg/L)	Manganese (mg/L)
8-Sep-10	1900 Sea Otter	0	0	0	0	17	7.4	0.06	105	0.1	221	0.06	0.023
15-Sep-10	1639 Marina	0	0	0	0	16	7.2	0.5	159	0.2	334		
21-Sep-10	1961 Harlequin	0	0	0	0	16	7.1	0	141	0.1	297		
28-Sep-10	1270 Seadog	0	0	0	0	16	7.5	0.06	126	0.1	265		
	<b>Average</b>	0	0	0	0	16.3	7.3	0.16	132.8	0.1	279.3	0.06	0.023
	<b>Maximum</b>	0	0	0	0	17	7.5	0.5	159	0.2	334	0.06	0.023
	<b>Minimum</b>	0	0	0	0	16	7.1	0	105	0.1	221	0.06	0.023

**Red font indicates non-compliance with Canadian Drinking Water Guidelines**

Aesthetic Objective for Iron is • 0.3 mg/L

Aesthetic Objective for Manganese is • 0.05mg/L

\*Coliforms are measured in colony forming units (CFU) per 100 millilitres of water (CFU/100mL)

Yellow Column Coliform tests are completed by Health Department

Blue column 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.



# Regional District of Nanaimo - Water Services Department

## Nanoose Water Analysis - 2010 Monthly Report



Date	Sample Location (Address)	Health Department		In-House									
		Fecal Coliform *	Total Coliform *	Fecal Coliform *	Total Coliform *	Temp. (°C)	pH	Free Chlorine Residual (mg/L)	Total Dissolved Solids (mg/L)	Salinity (%)	Conductivity (µS/cm)	Total Iron (mg/L)	Manganese (mg/L)
5-Oct-10	1900 Sea Otter			0	0	15	7	0.01	122	0.1	256	0.08	0.017
13-Oct-10	1639 Marina Way	0	0	0	0	12	7.4	0.02	164	0.2	345		
18-Oct-10	1961 Harlequin	0	0	0	0		7.7	0.02	132	0.1	277		
25-Oct-10	1270 Seadog	0	0	0	0	12	7.8	0.02	140	0.1	296		
	<b>Average</b>	0	0	0	0	13.0	7.5	0.02	139.5	0.1	293.5	0.08	0.017
	<b>Maximum</b>	0	0	0	0	15	7.8	0.02	164	0.2	345	0.08	0.017
	<b>Minimum</b>	0	0	0	0	12	7	0.01	122	0.1	256	0.08	0.017

**Red font indicates non-compliance with Canadian Drinking Water Guidelines**

Aesthetic Objective for Iron is • 0.3 mg/L

Aesthetic Objective for Manganese is • 0.05mg/L

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Yellow Column Coliform tests are completed by Health Department

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# Regional District of Nanaimo - Water Services Department

## Nanoose Water Analysis - 2010 Monthly Report



Date	Sample Location (Address)	Health Department		In-House									
		Fecal Coliform *	Total Coliform *	Fecal Coliform *	Total Coliform *	Temp. (°C)	pH	Free Chlorine Residual (mg/L)	Total Dissolved Solids (mg/L)	Salinity (%)	Conductivity (µS/cm)	Total Iron (mg/L)	Manganese (mg/L)
2-Nov-10	1639 Marina Way	0	0	0	0	11	7.1	0.11	169	0.2	349	0.28	0.152
9-Nov-10	1900 Sea Otter	0	0	0	0	11	7.6	0	166	0.2	351		
16-Nov-10	1270 Seadog Road	0	0	0	0	10	7.6	0.05	171	0.2	359		
24-Nov-10	1961 Harlequin	A	A	0	0	9	7.2	0.02	166	0.2	348		
30-Nov-10	1639 Marina Way			0	1	8	7.6	0.73	166	0.2	349		
	<b>Average</b>	0	0	0	0.2	9.8	7.4	0.18	167.6	0.2	351.2	0.28	0.152
	<b>Maximum</b>	0	0	0	1	11	7.6	0.73	171	0.2	359	0.28	0.152
	<b>Minimum</b>	0	0	0	0	8	7.1	0	166	0.2	348	0.28	0.152

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Aesthetic Objective for Iron is • 0.3 mg/L

Aesthetic Objective for Manganese is • 0.05mg/L

\*Coliforms are measured in colony forming units (CFU) per 100 millilitres of water (CFU/100mL)

Yellow Column Coliform tests are completed by Health Department

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**Comments:**

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

Total coliforms can be an indicator of adverse water quality if the result in the resample is positive (US Environmental Protection Agency). 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. If background bacteria (BG), total or fecal bacteria are detected location is resampled. If the bacteria test is overgrown (OG) location is also resampled.



# Regional District of Nanaimo - Water Services Department

## Nanoose Water Analysis - 2010 Monthly Report



Date	Sample Location (Address)	Health Department		In-House									
		Fecal Coliform *	Total Coliform *	Fecal Coliform *	Total Coliform *	Temp. (°C)	pH	Free Chlorine Residual (mg/L)	Total Dissolved Solids (mg/L)	Salinity (%)	Conductivity (µS/cm)	Total Iron (mg/L)	Manganese (mg/L)
7-Dec-10	1900 Sea Otter	0	0	0	0	8	7.2	0.01	172	0.2	362	1.01	0.149
7-Dec-10	1270 Sea Dog	0	0	0	0			0					
14-Dec-10	1639 Marina Way	0	0	0	0		7.4	0.1	169	0.2	357		
14-Dec-10	1961 Harlequin	0	0	0	0			0.03					
21-Dec-10	1639 Marina Way			0	0		7.8	2.2	165	0.2	347		
30-Dec-10	1639 Marina Way			0	0		7.6	0.52	168	0.2	353		
	<b>Average</b>	0	0	0	0	8.0	7.5	0.48	168.5	0.2	354.8	1.01	0.149
	<b>Maximum</b>	0	0	0	0	8	7.8	2.2	172	0.2	362	1.01	0.149
	<b>Minimum</b>	0	0	0	0	8	7.2	0	165	0.2	347	1.01	0.149

Red font indicates non-compliance with Canadian Drinking Water Guidelines

Aesthetic Objective for Iron is •0.3 mg/L

Aesthetic Objective for Manganese is •0.05mg/L

\*Coliforms are measured in colony forming units (CFU) per 100 millilitres of water (CFU/100mL)

Yellow Column Coliform tests are completed by Health Department

Blue column 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.





# Regional District of Nanaimo - Water Services Department

## Fairwinds Water Analysis - 2010 Monthly Report



Date	Sample Location (Address)	Health Department		In-House									
		Fecal Coliform *	Total Coliform *	Fecal Coliform *	Total Coliform *	Temp. (°C)	pH	Free Chlorine Residual (mg/L)	Total Dissolved Solids (mg/L)	Salinity (%)	Conductivity (µS/cm)	Total Iron (mg/L)	Manganese (mg/L)
5-Jan-10	3465 Cambridge	0	0	0	0	8	7.3	1.50	160	0.2	336	1.15	0.414
12-Jan-10	3429 Redden	0	0	0	0	7	7.0	0.80	160	0.2	337		
20-Jan-10	3500 Fairwinds	0	0	0	0	8		0.54	155	0.2	325		
26-Jan-10	3541 Shelby Lane	0	0	0	0	8	7.1	0.04	156	0.2	328		
26-Jan-10	3730 Fairwinds	0	0	0	0	8	7.1	0.03	156	0.2	328		
	<b>Average</b>	0	0	0	0	7.8	7.1	0.58	157.4	0.2	330.8	1.15	0.414
	<b>Maximum</b>	0	0	0	0	8	7.3	1.5	160	0.2	337	1.15	0.414
	<b>Minimum</b>	0	0	0	0	7	7	0.03	155	0.2	325	1.15	0.414

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Aesthetic Objective for Iron is • 0.3 mg/L

Aesthetic Objective for Manganese is • 0.05mg/L

\*Coliforms are measured in colony forming units (CFU) per 100 millilitres of water (CFU/100mL)

Yellow Column Coliform tests are completed by Health Department

Blue column 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.



# Regional District of Nanaimo - Water Services Department

## Fairwinds Water Analysis - 2010 Monthly Report



Date	Sample Location (Address)	Health Department		In-House									
		Fecal Coliform *	Total Coliform *	Fecal Coliform *	Total Coliform *	Temp. (°C)	pH	Free Chlorine Residual (mg/L)	Total Dissolved Solids (mg/L)	Salinity (%)	Conductivity (µS/cm)	Total Iron (mg/L)	Manganese (mg/L)
9-Feb-10	3465 Cambridge	0	0	0	0	8	7.0	1.36	159	0.2	336	0.41	0.165
9-Feb-10	3429 Redden	0	0	0	0	8	7.0	0.74	158	0.2	334	0.03	0.027
17-Feb-10	3500 Fairwinds	0	0	0	0	8	7.0	0.35	157	0.2	330		
17-Feb-10	3730 Fairwinds	0	0	0	0	9	6.9	0.20	158	0.2	333		
23-Feb-10	3541 Shelby Lane	0	0	0	0	8	7.1	1.38	160	0.2	337		
	<b>Average</b>	0	0	0	0	8.2	7.0	0.81	158.4	0.2	334.0	0.22	0.096
	<b>Maximum</b>	0	0	0	0	9	7.1	1.38	160	0.2	337	0.41	0.165
	<b>Minimum</b>	0	0	0	0	8	6.9	0.2	157	0.2	330	0.03	0.027

**Red font indicates non-compliance with Canadian Drinking Water Guidelines**

Aesthetic Objective for Iron is • 0.3 mg/L

Aesthetic Objective for Manganese is • 0.05mg/L

\*Coliforms are measured in colony forming units (CFU) per 100 millilitres of water (CFU/100mL)

Yellow Column Coliform tests are completed by Health Department

Blue column 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.



# Regional District of Nanaimo - Water Services Department

## Fairwinds Water Analysis - 2010 Monthly Report



Date	Sample Location (Address)	Health Department		In-House									
		Fecal Coliform *	Total Coliform *	Fecal Coliform *	Total Coliform *	Temp. (°C)	pH	Free Chlorine Residual (mg/L)	Total Dissolved Solids (mg/L)	Salinity (%)	Conductivity (µS/cm)	Total Iron (mg/L)	Manganese (mg/L)
3-Mar-10	3465 Cambridge	0	0	0	0	9	7	1.34	159	0.2	334	<3.3	<0.770
4-Mar-10	3500 Fairwinds						6.9	0.77	160	0.2	335	0.56	0.199
9-Mar-10	3429 Redden Road	0	0	0	0	8	7.1	1.08	160	0.2	338		
17-Mar-10	3500 Fairwinds	0	0	0	0	9	7	1.56	159	0.2	333		
24-Mar-10	3541 Shelby Lane	0	0	0	0	9	7	0.77	155	0.2	327		
30-Mar-10	3730 Fairwinds	0	0	0	0	10	7.3	0.12	153	0.2	322		
	<b>Average</b>	0	0	0	0	9.0	7.1	0.94	157.7	0.2	331.5	0.56	0.199
	<b>Maximum</b>	0	0	0	0	10	7.3	1.56	160	0.2	338	0.56	0.199
	<b>Minimum</b>	0	0	0	0	8	6.9	0.12	153	0.2	322	0.56	0.199

Red font indicates non-compliance with Canadian Drinking Water Guidelines

Aesthetic Objective for Iron is • 0.3 mg/L

Aesthetic Objective for Manganese is • 0.05mg/L

\*Coliforms are measured in colony forming units (CFU) per 100 millilitres of water (CFU/100mL)

Yellow Column Coliform tests are completed by Health Department

Blue column 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.



# Regional District of Nanaimo - Water Services Department

## Fairwinds Water Analysis - 2010 Monthly Report



Date	Sample Location (Address)	Health Department		In-House									
		Fecal Coliform *	Total Coliform *	Fecal Coliform *	Total Coliform *	Temp. (°C)	pH	Free Chlorine Residual (mg/L)	Total Dissolved Solids (mg/L)	Salinity (%)	Conductivity (µS/cm)	Total Iron (mg/L)	Manganese (mg/L)
7-Apr-10	3500 Fairwinds Dr	0	0	0	0	9	7.1	1.91	158	0.2	333	0.64	0.255
13-Apr-10	3429 Redden Road	0	0	0	0	10	7.0	0.98	158	0.2	332		
20-Apr-10	3465 Cambridge	0	0	0	0	11	7.0	0.49	154	0.2	324		
27-Apr-10	3541 Shelby Rd	0	0	0	0	n/a	7.2	1.22	156	0.2	320		
27-Apr-10	3730 Fairwinds Rd	0	0	0	0		7.2	0.95	156	0.2	320		
	<b>Average</b>	0	0	0	0	10.0	7.1	1.11	156.4	0.2	325.8	0.64	0.255
	<b>Maximum</b>	0	0	0	0	11	7.2	1.91	158	0.2	333	0.64	0.255
	<b>Minimum</b>	0	0	0	0	9	7	0.49	154	0.2	320	0.64	0.255

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Aesthetic Objective for Iron is • 0.3 mg/L

Aesthetic Objective for Manganese is • 0.05mg/L

\*Coliforms are measured in colony forming units (CFU) per 100 millilitres of water (CFU/100mL)

Yellow Column Coliform tests are completed by Health Department

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**Comments:**

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



# Regional District of Nanaimo - Water Services Department

## Fairwinds Water Analysis - 2010 Monthly Report



Date	Sample Location (Address)	Health Department		In-House									
		Fecal Coliform *	Total Coliform *	Fecal Coliform *	Total Coliform *	Temp. (°C)	pH	Free Chlorine Residual (mg/L)	Total Dissolved Solids (mg/L)	Salinity (%)	Conductivity (µS/cm)	Total Iron (mg/L)	Manganese (mg/L)
4-May-10	3500 Fairwinds Dr	0	0	0	0	12	7.1	1.22	160	0.2	335	0.43	0.19
12-May-10	3429 Redden Rd	0	0	0	0	14	7.1	0.68	165	0.2	346		
19-May-10	3465 Cambridge	0	0	0	0	12	7.3	0.38	162	0.2	341		
25-May-10	3541 Shelby	0	0	0	0	n/a	7.6	0.41	150	0.1	314		
25-May-10	3730 Fairwinds Dr	0	0	0	0	n/a							
	<b>Average</b>	0	0	0	0	12.7	7.3	0.67	159.3	0.2	334.0	0.43	0.19
	<b>Maximum</b>	0	0	0	0	14	7.6	1.22	165	0.2	346	0.43	0.19
	<b>Minimum</b>	0	0	0	0	12	7.1	0.38	150	0.1	314	0.43	0.19

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Aesthetic Objective for Iron is • 0.3 mg/L

Aesthetic Objective for Manganese is • 0.05mg/L

\*Coliforms are measured in colony forming units (CFU) per 100 millilitres of water (CFU/100mL)

Yellow Column Coliform tests are completed by Health Department

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**Comments:**

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



# Regional District of Nanaimo - Water Services Department

## Fairwinds Water Analysis - 2010 Monthly Report



Date	Sample Location (Address)	Health Department		In-House									
		Fecal Coliform *	Total Coliform *	Fecal Coliform *	Total Coliform *	Temp. (°C)	pH	Free Chlorine Residual (mg/L)	Total Dissolved Solids (mg/L)	Salinity (%)	Conductivity (µS/cm)	Total Iron (mg/L)	Manganese (mg/L)
9-Jun-10	3500 Fairwinds Dr	0	0	0	0		7.5	2.04	143	0.1	300	0.44	0.165
15-Jun-10	3429 Redden Rd	0	0	0	0		7.3	0.32	135	0.1	285		
22-Jun-10	3465 Cambridge	0	0	0	0		7.4	0.09	129	0.1	272		
28-Jun-10	3541 Shelby			0	0		7	2.2	144	0.1	301		
29-Jun-10	3730 Fairwinds			0	0								
	<b>Average</b>	0	0	0	0	#DIV/0!	7.3	1.16	137.8	0.1	289.5	0.44	0.165
	<b>Maximum</b>	0	0	0	0	0	7.5	2.2	144	0.1	301	0.44	0.165
	<b>Minimum</b>	0	0	0	0	0	7	0.09	129	0.1	272	0.44	0.165

**Red font indicates non-compliance with Canadian Drinking Water Guidelines**

Aesthetic Objective for Iron is • 0.3 mg/L

Aesthetic Objective for Manganese is • 0.05mg/L

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# Regional District of Nanaimo - Water Services Department

## Fairwinds Water Analysis - 2010 Monthly Report



Date	Sample Location (Address)	Health Department		In-House									
		Fecal Coliform *	Total Coliform *	Fecal Coliform *	Total Coliform *	Temp. (°C)	pH	Free Chlorine Residual (mg/L)	Total Dissolved Solids (mg/L)	Salinity (%)	Conductivity (µS/cm)	Total Iron (mg/L)	Manganese (mg/L)
6-Jul-10	3500 Fairwinds	0	0	0	0		7.5	2.2	138	0.1	288	0.39	0.168
13-Jul-10	3465 Cambridge	0	0	0	0		7.7	2.2	133	0.1	278		
21-Jul-10	3730 Fairwinds	0	0	0	0	17	7.7	2.2	127	0.1	267		
21-Jul-10	3541 Shelby	0	0	0	0	15	7.7						
27-Jul-10	3429 Redden	0	0	0	0	18	7.4	0.42	136	0.1	286		
	<b>Average</b>	0	0	0	0	16.7	7.6	1.76	133.5	0.1	279.8	0.39	0.168
	<b>Maximum</b>	0	0	0	0	18	7.7	2.2	138	0.1	288	0.39	0.168
	<b>Minimum</b>	0	0	0	0	15	7.4	0.42	127	0.1	267	0.39	0.168

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# Regional District of Nanaimo - Water Services Department

## Fairwinds Water Analysis - 2010 Monthly Report



Date	Sample Location (Address)	Health Department		In-House									
		Fecal Coliform *	Total Coliform *	Fecal Coliform *	Total Coliform *	Temp. (°C)	pH	Free Chlorine Residual (mg/L)	Total Dissolved Solids (mg/L)	Salinity (%)	Conductivity (µS/cm)	Total Iron (mg/L)	Manganese (mg/L)
4-Aug-10	3500 Fairwinds	0	0	0	0	15	7.5	0.61	132	0.1	278	0.38	0.154
9-Aug-10	3429 Redden Rd	0	0	0	0	19	7.5	0.67	141	0.1	297		
17-Aug-10	3465 Cambridge	0	0	0	0	15	7.4	0.07	141	0.1	296		
23-Aug-10	3541 Shelby	0	0	0	0	15.5	7.7	1.79	133	0.1	279		
31-Aug-10	3730 Fairwinds	0	0	0	0	16	7.7	2.7	148	0.1	310		
	<b>Average</b>	0	0	0	0	16.1	7.6	1.17	139.0	0.1	292.0	0.38	0.154
	<b>Maximum</b>	0	0	0	0	19	7.7	2.7	148	0.1	310	0.38	0.154
	<b>Minimum</b>	0	0	0	0	15	7.4	0.07	132	0.1	278	0.38	0.154

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# Regional District of Nanaimo - Water Services Department

## Fairwinds Water Analysis - 2010 Monthly Report



Date	Sample Location (Address)	Health Department		In-House									
		Fecal Coliform *	Total Coliform *	Fecal Coliform *	Total Coliform *	Temp. (°C)	pH	Free Chlorine Residual (mg/L)	Total Dissolved Solids (mg/L)	Salinity (%)	Conductivity (µS/cm)	Total Iron (mg/L)	Manganese (mg/L)
8-Sep-10	3500 Fairwinds	0	0	0	0	14	7.4	0.98	134	0.1	281	0.35	0.157
15-Sep-10	3429 Redden	0	0	0	0	16	6.9	1.3	173	0.2	361		
21-Sep-10	3541 Shelby	0	0	0	0	16	7.2	0.22	129	0.1	271		
28-Sep-10	3465 Cambridge	0	0	0	0	16	7.4	0.86	130	0.1	271		
28-Sep-10	3730 Fairwinds	0	0			17	7.5	0.27	126	0.1	266		
	<b>Average</b>	0	0	0	0	15.8	7.3	0.73	138.4	0.1	290.0	0.35	0.157
	<b>Maximum</b>	0	0	0	0	17	7.5	1.3	173	0.2	361	0.35	0.157
	<b>Minimum</b>	0	0	0	0	14	6.9	0.22	126	0.1	266	0.35	0.157

**Red font indicates non-compliance with Canadian Drinking Water Guidelines**

Aesthetic Objective for Iron is • 0.3 mg/L

Aesthetic Objective for Manganese is • 0.05mg/L

\*Coliforms are measured in colony forming units (CFU) per 100 millilitres of water (CFU/100mL)

Yellow Column Coliform tests are completed by Health Department

Blue column 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.



# Regional District of Nanaimo - Water Services Department

## Fairwinds Water Analysis - 2010 Monthly Report



Date	Sample Location (Address)	Health Department		In-House									
		Fecal Coliform *	Total Coliform *	Fecal Coliform *	Total Coliform *	Temp. (°C)	pH	Free Chlorine Residual (mg/L)	Total Dissolved Solids (mg/L)	Salinity (%)	Conductivity (µS/cm)	Total Iron (mg/L)	Manganese (mg/L)
5-Oct-10	3500 Fairwinds			0	0	14	6.9	0.45	112	0.1	235	0.24	0.101
13-Oct-10	3429 Redden Rd	0	0	0	0	16	7.3	0.12	118	0.1	249		
18-Oct-10	3465 Cambridge	0	0	0	0		7.9	0.48	134	0.1	281		
25-Oct-10	3730 Fairwinds	0	0	0	0	12	7.2	0.26	135	0.1	279		
25-Oct-10	3541 Shelby	0	0	0	0	12	7.9	0.99	131	0.1	275		
	<b>Average</b>	0	0	0	0	13.5	7.4	0.46	126.0	0.1	263.8	0.24	0.101
	<b>Maximum</b>	0	0	0	0	16	7.9	0.99	135	0.1	281	0.24	0.101
	<b>Minimum</b>	0	0	0	0	12	6.9	0.12	112	0.1	235	0.24	0.101

**Red font indicates non-compliance with Canadian Drinking Water Guidelines**

Aesthetic Objective for Iron is • 0.3 mg/L

Aesthetic Objective for Manganese is • 0.05mg/L

\*Coliforms are measured in colony forming units (CFU) per 100 millilitres of water (CFU/100mL)

Yellow Column Coliform tests are completed by Health Department

Blue column 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.



# Regional District of Nanaimo - Water Services Department

## Fairwinds Water Analysis - 2010 Monthly Report



Date	Sample Location (Address)	Health Department		In-House									
		Fecal Coliform *	Total Coliform *	Fecal Coliform *	Total Coliform *	Temp. (°C)	pH	Free Chlorine Residual (mg/L)	Total Dissolved Solids (mg/L)	Salinity (%)	Conductivity (µS/cm)	Total Iron (mg/L)	Manganese (mg/L)
2-Nov-10	3429 Redden Rd	0	0	0	0	12	7.5	1.31	179	0.2	375	0.03	0.023
9-Nov-10	3500 Fairwinds	0	0	0	0	10	7.7	1.58	187	0.2	392		
16-Nov-10	3541 Shelby Lane	0	0	0	0	11	7.3	1.08	187	0.2	390		
24-Nov-10	3465 Cambridge	A	A	0	0	9	7.3	1.51	184	0.2	385		
30-Nov-10	3730 Fairwinds	0	0	0	0	8	7.2	0.41	179	0.2	376		
	<b>Average</b>	0	0	0	0	10.0	7.4	1.18	183.2	0.2	383.6	0.03	0.023
	<b>Maximum</b>	0	0	0	0	12	7.7	1.58	187	0.2	392	0.03	0.023
	<b>Minimum</b>	0	0	0	0	8	7.2	0.41	179	0.2	375	0.03	0.023

Red font indicates non-compliance with Canadian Drinking Water Guidelines

A - Transport time was too long to laboratory.

Aesthetic Objective for Iron is • 0.3 mg/L

Aesthetic Objective for Manganese is • 0.05mg/L

\*Coliforms are measured in colony forming units (CFU) per 100 millilitres of water (CFU/100mL)

Yellow Column Coliform tests are completed by Health Department

Blue column 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.



# Regional District of Nanaimo - Water Services Department

## Fairwinds Water Analysis - 2010 Monthly Report



Date	Sample Location (Address)	Health Department		In-House									
		Fecal Coliform *	Total Coliform *	Fecal Coliform *	Total Coliform *	Temp. (°C)	pH	Free Chlorine Residual (mg/L)	Total Dissolved Solids (mg/L)	Salinity (%)	Conductivity (µS/cm)	Total Iron (mg/L)	Manganese (mg/L)
7-Dec-10	3500 Fairwinds	0	0	0	0	7	7.4	>2.2	184	0.2	387	1.48	0.583
7-Dec-10	3541 Shelby Lane	0	0	0	0			>2.2					
14-Dec-10	3429 Redden Rd	0	0	0	0		7.3	0.89	182	0.2	380		
14-Dec-10	3465 Cambridge	0	0	0	0			0.82					
14-Dec-10	3730 Fairwinds	0	0	0	0			1.71					
21-Dec-10	3465 Cambridge			0	0		7.6	0.92	189	0.2	378		
30-Dec-10	3500 Fairwinds			0	0		6.8	0.55	179	0.2	378		
	<b>Average</b>	0	0	0	0	7.0	7.4	0.98	183.0	0.2	383.5	1.48	0.583
	<b>Maximum</b>	0	0	0	0	7	7.4	1.71	184	0.2	387	1.48	0.583
	<b>Minimum</b>	0	0	0	0	7	7.3	0.55	182	0.2	380	1.48	0.583

Red font indicates non-compliance with Canadian Drinking Water Guidelines

Aesthetic Objective for Iron is •0.3 mg/L      Aesthetic Objective for Manganese is •0.05mg/L

\*Coliforms are measured in colony forming units (CFU) per 100 millilitres of water (CFU/100mL)

Yellow Column Coliform tests are completed by Health Department

Blue column 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.



# Regional District of Nanaimo - Water Services Department

## Madrona Water Analysis - 2010 Monthly Report



Date	Sample Location (Address)	Health Department		In-House									
		Fecal Coliform *	Total Coliform *	Fecal Coliform *	Total Coliform *	Temp. (°C)	pH	Free Chlorine Residual (mg/L)	Total Dissolved Solids (mg/L)	Salinity (%)	Conductivity (µS/cm)	Total Iron (mg/L)	Manganese (mg/L)
5-Jan-10	1819 NW Bay Rd	0	0	0	0	9	7.4	0.39	158	0.2	334	0.00	0.035
12-Jan-10	1358 Madrona	0	0	0	0	9	7.4	0.73	152	0.2	320		
20-Jan-10	1566 Arbutus	0	0	0	0	9		0.58	148	0.1	312		
26-Jan-10	1819 NW Bay Rd			0	0	8	7.5	0.02	153	0.2	322		
	<b>Average</b>	0	0	0	0	8.8	7.4	0.43	152.8	0.2	322.0	0.00	0.035
	<b>Maximum</b>	0	0	0	0	9	7.5	0.73	158	0.2	334	0	0.035
	<b>Minimum</b>	0	0	0	0	8	7.4	0.02	148	0.1	312	0	0.035

**Red font indicates non-compliance with Canadian Drinking Water Guidelines**

Aesthetic Objective for Iron is • 0.3 mg/L

Aesthetic Objective for Manganese is • 0.05mg/L

\*Coliforms are measured in colony forming units (CFU) per 100 millilitres of water (CFU/100mL)

Yellow Column Coliform tests are completed by Health Department

Blue column 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.



# Regional District of Nanaimo - Water Services Department

## Madrona Water Analysis - 2010 Monthly Report



Date	Sample Location (Address)	Health Department		In-House									
		Fecal Coliform *	Total Coliform *	Fecal Coliform *	Total Coliform *	Temp. (°C)	pH	Free Chlorine Residual (mg/L)	Total Dissolved Solids (mg/L)	Salinity (%)	Conductivity (µS/cm)	Total Iron (mg/L)	Manganese (mg/L)
9-Feb-10	1358 Madrona Dr	0	0	0	0	8	7.1	0.43	151	0.2	321	0.01	0.05
17-Feb-10	1566 Arbutus	0	0	0	0	9	6.8	0.44	148	0.1	312		
23-Feb-10	1819 NW Bay Rd	0	0	0	0	9	7.3	1.36	161	0.2	339		
	<b>Average</b>	0	0	0	0	8.7	7.1	0.74	153.3	0.2	324.0	0.01	0.05
	<b>Maximum</b>	0	0	0	0	9	7.3	1.36	161	0.2	339	0.01	0.05
	<b>Minimum</b>	0	0	0	0	8	6.8	0.43	148	0.1	312	0.01	0.05

**Red font indicates non-compliance with Canadian Drinking Water Guidelines**

Aesthetic Objective for Iron is • 0.3 mg/L

Aesthetic Objective for Manganese is • 0.05mg/L

\*Coliforms are measured in colony forming units (CFU) per 100 millilitres of water (CFU/100mL)

Yellow Column Coliform tests are completed by Health Department

Blue column 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.



# Regional District of Nanaimo - Water Services Department

## Madrona Water Analysis - 2010 Monthly Report



Date	Sample Location (Address)	Health Department		In-House									
		Fecal Coliform *	Total Coliform *	Fecal Coliform *	Total Coliform *	Temp. (°C)	pH	Free Chlorine Residual (mg/L)	Total Dissolved Solids (mg/L)	Salinity (%)	Conductivity (µS/cm)	Total Iron (mg/L)	Manganese (mg/L)
3-Mar-10	1358 Madrona	0	0	0	0	9	6.9	0.46	152	0.2	321	0.01	0.046
9-Mar-10	1566 Arbutus	0	0	0	0	9	7.2	0.33	153	0.2	323		
17-Mar-10	1819 NW Bay Rd	0	0	0	0	9	6.9	0.02	155	0.2	325		
24-Mar-10	1358 Madrona			0	0	9	6.8	0.32	153	0.2	321		
30-Mar-10	1565 Stonelake			0	0	9	7.0	0.30	155	0.2	326		
	<b>Average</b>	0	0	0	0	9.0	7.0	0.29	153.6	0.2	323.2	0.01	0.046
	<b>Maximum</b>	0	0	0	0	9	7.2	0.46	155	0.2	326	0.01	0.046
	<b>Minimum</b>	0	0	0	0	9	6.8	0.02	152	0.2	321	0.01	0.046

**Red font indicates non-compliance with Canadian Drinking Water Guidelines**

Aesthetic Objective for Iron is • 0.3 mg/L

Aesthetic Objective for Manganese is • 0.05mg/L

\*Coliforms are measured in colony forming units (CFU) per 100 millilitres of water (CFU/100mL)

Yellow Column Coliform tests are completed by Health Department

Blue column 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.



# Regional District of Nanaimo - Water Services Department

## Madrona Water Analysis - 2010 Monthly Report



Date	Sample Location (Address)	Health Department		In-House									
		Fecal Coliform *	Total Coliform *	Fecal Coliform *	Total Coliform *	Temp. (°C)	pH	Free Chlorine Residual (mg/L)	Total Dissolved Solids (mg/L)	Salinity (%)	Conductivity (µS/cm)	Total Iron (mg/L)	Manganese (mg/L)
7-Apr-10	1566 Arbutus Dr	0	0	0	0	10	7.3	0.76	146	0.1	308	0.01	0.070
13-Apr-10	1819 NW Bay Rd	0	0	0	0	9	6.9	0.05	150	0.1	316		
20-Apr-10	1358 Madrona Dr	0	0	0	0	11	7.4	0.43	151	0.1	317		
27-Apr-10	1565 Stonelake			0	0	11	6.9	0.04	152	0.2	320		
	<b>Average</b>	0	0	0	0	10.3	7.1	0.32	149.8	0.1	315.3	0.01	0.07
	<b>Maximum</b>	0	0	0	0	11	7.4	0.76	152	0.2	320	0.01	0.07
	<b>Minimum</b>	0	0	0	0	9	6.9	0.04	146	0.1	308	0.01	0.07

**Red font indicates non-compliance with Canadian Drinking Water Guidelines**

Aesthetic Objective for Iron is • 0.3 mg/L

Aesthetic Objective for Manganese is • 0.05mg/L

\*Coliforms are measured in colony forming units (CFU) per 100 millilitres of water (CFU/100mL)

Yellow Column Coliform tests are completed by Health Department

Blue column 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.





# Regional District of Nanaimo - Water Services Department

## Madrona Water Analysis - 2010 Monthly Report



Date	Sample Location (Address)	Health Department		In-House									
		Fecal Coliform *	Total Coliform *	Fecal Coliform *	Total Coliform *	Temp. (°C)	pH	Free Chlorine Residual (mg/L)	Total Dissolved Solids (mg/L)	Salinity (%)	Conductivity (µS/cm)	Total Iron (mg/L)	Manganese (mg/L)
4-May-10	1566 Arbutus Dr	0	0	0	0	12	7.3	0.42	153	0.2	320	0.03	0.045
12-May-10	1819 NW Bay	0	0	0	0	11	7.2	0.03	162	0.2	339		
19-May-10	1358 Madrona Dr	0	0	0	0	13	7.6	0.39	158	0.2	332		
25-May-10	1565 Stonelake			0	0	n/a	7.4	0.29	159	0.2	334		
	<b>Average</b>	0	0	0	0	12.0	7.4	0.28	158.0	0.2	331.3	0.03	0.045
	<b>Maximum</b>	0	0	0	0	13	7.6	0.42	162	0.2	339	0.03	0.045
	<b>Minimum</b>	0	0	0	0	11	7.2	0.03	153	0.2	320	0.03	0.045

**Red font indicates non-compliance with Canadian Drinking Water Guidelines**

Aesthetic Objective for Iron is • 0.3 mg/L

Aesthetic Objective for Manganese is • 0.05mg/L

\*Coliforms are measured in colony forming units (CFU) per 100 millilitres of water (CFU/100mL)

Yellow Column Coliform tests are completed by Health Department

Blue column 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.



# Regional District of Nanaimo - Water Services Department

## Madrona Water Analysis - 2010 Monthly Report



Date	Sample Location (Address)	Health Department		In-House									
		Fecal Coliform *	Total Coliform *	Fecal Coliform *	Total Coliform *	Temp. (°C)	pH	Free Chlorine Residual (mg/L)	Total Dissolved Solids (mg/L)	Salinity (%)	Conductivity (µS/cm)	Total Iron (mg/L)	Manganese (mg/L)
9-Jun-10	1566 Arbutus Dr	0	0	0	0		7.3	0.22	93	0.1	195	0.02	0.021
15-Jun-10	1358 Madrona	0	0	0	0		7.4	0.32	82	0.1	171.4		
22-Jun-10	1819 NW Bay Rd	0	0	0	0		7.2	0.61	166	0.2	348		
29-Jun-10	1565 Stonelake			0	0		7.2	0.85	151	0.1	316		
	<b>Average</b>	0	0	0	0	#DIV/0!	7.3	0.50	123.0	0.1	257.6	0.02	0.021
	<b>Maximum</b>	0	0	0	0	0	7.4	0.85	166	0.2	348	0.02	0.021
	<b>Minimum</b>	0	0	0	0	0	7.2	0.22	82	0.1	171.4	0.02	0.021

**Red font indicates non-compliance with Canadian Drinking Water Guidelines**

Aesthetic Objective for Iron is • 0.3 mg/L

Aesthetic Objective for Manganese is • 0.05mg/L

\*Coliforms are measured in colony forming units (CFU) per 100 millilitres of water (CFU/100mL)

Yellow Column Coliform tests are completed by Health Department

Blue column 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.



# Regional District of Nanaimo - Water Services Department

## Madrona Water Analysis - 2010 Monthly Report



Date	Sample Location (Address)	Health Department		In-House									
		Fecal Coliform *	Total Coliform *	Fecal Coliform *	Total Coliform *	Temp. (°C)	pH	Free Chlorine Residual (mg/L)	Total Dissolved Solids (mg/L)	Salinity (%)	Conductivity (µS/cm)	Total Iron (mg/L)	Manganese (mg/L)
6-Jul-10	1566 Arbutus	0	0	0	0		7.6	0.41	77	0.1	161	0.04	0.02
13-Jul-10	1358 Madrona	0	0	0	0		7.7	0.36	89	0.1	188		
21-Jul-10	1566 Arbutus			0	0	16	7.7	0.82	135	0.1	285		
27-Jul-10	1819 NWB	0	0	0	0	13	8	0.45	169	0.2	352		
	<b>Average</b>	0	0	0	0	14.5	7.8	0.51	117.5	0.1	246.5	0.04	0.02
	<b>Maximum</b>	0	0	0	0	16	8	0.82	169	0.2	352	0.04	0.02
	<b>Minimum</b>	0	0	0	0	13	7.6	0.36	77	0.1	161	0.04	0.02

**Red font indicates non-compliance with Canadian Drinking Water Guidelines**

Aesthetic Objective for Iron is • 0.3 mg/L

Aesthetic Objective for Manganese is • 0.05mg/L

\*Coliforms are measured in colony forming units (CFU) per 100 millilitres of water (CFU/100mL)

Yellow Column Coliform tests are completed by Health Department

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**Comments:**

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



# Regional District of Nanaimo - Water Services Department

## Madrona Water Analysis - 2010 Monthly Report



Date	Sample Location (Address)	Health Department		In-House									
		Fecal Coliform *	Total Coliform *	Fecal Coliform *	Total Coliform *	Temp. (°C)	pH	Free Chlorine Residual (mg/L)	Total Dissolved Solids (mg/L)	Salinity (%)	Conductivity (µS/cm)	Total Iron (mg/L)	Manganese (mg/L)
4-Aug-10	1566 Arbutus	T	T	0	0	18	7.6	0.24	73	0.1	153	0.04	0.039
9-Aug-10	1358 Madrona	0	0	0	0	17	7.5	0.13	131	0.1	276		
17-Aug-10	1819 NW Bay Rd	0	0	0	0	13	7.5	0.05	169	0.2	355		
23-Aug-10	1565 Stonelake			0	0	17	7.8	0.06	112	0.1	234		
31-Aug-10	1819 NW Bay Rd			0	0	12	7.8	1.75	171	0.2	359		
	<b>Average</b>	0	0	0	0	15.4	7.6	0.45	131.2	0.1	275.4	0.04	0.039
	<b>Maximum</b>	0	0	0	0	18	7.8	1.75	171	0.2	359	0.04	0.039
	<b>Minimum</b>	0	0	0	0	12	7.5	0.05	73	0.1	153	0.04	0.039

Red font indicates non-compliance with Canadian Drinking Water Guidelines

T-Transport time was too long to laboratory.

Aesthetic Objective for Iron is • 0.3 mg/L

Aesthetic Objective for Manganese is • 0.05mg/L

\*Coliforms are measured in colony forming units (CFU) per 100 millilitres of water (CFU/100mL)

Yellow Column Coliform tests are completed by Health Department

Blue column 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.



# Regional District of Nanaimo - Water Services Department

## Madrona Water Analysis - 2010 Monthly Report



Date	Sample Location (Address)	Health Department		In-House									
		Fecal Coliform *	Total Coliform *	Fecal Coliform *	Total Coliform *	Temp. (°C)	pH	Free Chlorine Residual (mg/L)	Total Dissolved Solids (mg/L)	Salinity (%)	Conductivity (µS/cm)	Total Iron (mg/L)	Manganese (mg/L)
8-Sep-10	1566 Arbutus	0	0	0	0	16	7.6	0.56	154	0.2	323	0	0.055
15-Sep-10	1358 Madrona	0	0	0	0	16	7.2	0.5	159	0.2	334		
21-Sep-10	1819 NWB Rd	0	0	0	0	12	7.9	0.01	161	0.2	337		
28-Sep-10	1565 Stonelake			0	0	15	7.1	0.91	154	0.2	325		
	<b>Average</b>	0	0	0	0	14.8	7.5	0.50	157.0	0.2	329.8	0.00	0.055
	<b>Maximum</b>	0	0	0	0	16	7.9	0.91	161	0.2	337	0	0.055
	<b>Minimum</b>	0	0	0	0	12	7.1	0.01	154	0.2	323	0	0.055

**Red font indicates non-compliance with Canadian Drinking Water Guidelines**

Aesthetic Objective for Iron is • 0.3 mg/L

Aesthetic Objective for Manganese is • 0.05mg/L

\*Coliforms are measured in colony forming units (CFU) per 100 millilitres of water (CFU/100mL)

Yellow Column Coliform tests are completed by Health Department

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**Comments:**

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



# Regional District of Nanaimo - Water Services Department

## Madrona Water Analysis - 2010 Monthly Report



Date	Sample Location (Address)	Health Department		In-House									
		Fecal Coliform *	Total Coliform *	Fecal Coliform *	Total Coliform *	Temp. (°C)	pH	Free Chlorine Residual (mg/L)	Total Dissolved Solids (mg/L)	Salinity (%)	Conductivity (µS/cm)	Total Iron (mg/L)	Manganese (mg/L)
5-Oct-10	1566 Arbutus	0	0	0	0	15	6.9	0.6	128	0.1	268	0.06	0.105
13-Oct-10	1358 Madrona Dr	0	0	0	0	15	7.4	0.45	135	0.1	284		
19-Oct-10	1819 NWB Rd	0	0	0	0		8	1.82	171	0.2	359		
25-Oct-10	1565 Stonelake			0	0	13	7.3	0.46	118	0.1	248		
	<b>Average</b>	0	0	0	0	14.3	7.4	0.83	138.0	0.1	289.8	0.06	0.105
	<b>Maximum</b>	0	0	0	0	15	8	1.82	171	0.2	359	0.06	0.105
	<b>Minimum</b>	0	0	0	0	13	6.9	0.45	118	0.1	248	0.06	0.105

**Red font indicates non-compliance with Canadian Drinking Water Guidelines**

Aesthetic Objective for Iron is • 0.3 mg/L

Aesthetic Objective for Manganese is • 0.05mg/L

\*Coliforms are measured in colony forming units (CFU) per 100 millilitres of water (CFU/100mL)

Yellow Column Coliform tests are completed by Health Department

Blue column 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.



# Regional District of Nanaimo - Water Services Department

## Madrona Water Analysis - 2010 Monthly Report



Date	Sample Location (Address)	Health Department		In-House									
		Fecal Coliform *	Total Coliform *	Fecal Coliform *	Total Coliform *	Temp. (°C)	pH	Free Chlorine Residual (mg/L)	Total Dissolved Solids (mg/L)	Salinity (%)	Conductivity (µS/cm)	Total Iron (mg/L)	Manganese (mg/L)
2-Nov-10	1358 Madrona Dr	0	0	0	0	13	7.7	0.68	159	0.2	335	0	0.055
9-Nov-10	1566 Arbutus	0	0	0	0	11	7.6	0.59	159	0.2	334		
16-Nov-10	1819 NW Bay Rd	0	0	0	0	11	7.4	1.94	179	0.2	375		
24-Nov-10	1358 Madrona Dr			0	0	9	7.7	0.61	162	0.2	341		
30-Nov-10	1358 Madrona Dr			0	0	10	7.9	0.13	161	0.2	337		
	<b>Average</b>	0	0	0	0	10.8	7.7	0.79	164.0	0.2	344.4	0.00	0.055
	<b>Maximum</b>	0	0	0	0	13	7.9	1.94	179	0.2	375	0	0.055
	<b>Minimum</b>	0	0	0	0	9	7.4	0.13	159	0.2	334	0	0.055

Red font indicates non-compliance with Canadian Drinking Water Guidelines

Aesthetic Objective for Iron is • 0.3 mg/L

Aesthetic Objective for Manganese is • 0.05mg/L

\*Coliforms are measured in colony forming units (CFU) per 100 millilitres of water (CFU/100mL)

Yellow Column Coliform tests are completed by Health Department

Blue column 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.



# Regional District of Nanaimo - Water Services Department

## Madrona Water Analysis - 2010 Monthly Report



Date	Sample Location (Address)	Health Department		In-House									
		Fecal Coliform *	Total Coliform *	Fecal Coliform *	Total Coliform *	Temp. (°C)	pH	Free Chlorine Residual (mg/L)	Total Dissolved Solids (mg/L)	Salinity (%)	Conductivity (µS/cm)	Total Iron (mg/L)	Manganese (mg/L)
7-Dec-10	1566 Arbutus	0	0	0	0	9	7.4	0.97	158	0.2	335	0	0.056
14-Dec-10	1358 Madrona Dr	0	0	0	0		7.2	0.48	167	0.2	349		
14-Dec-10	1819 NW Bay Rd	0	0	0	0			0.87					
21-Dec-10	1358 Madrona Dr			0	0		7.9	0.67	164	0.2	344		
30-Dec-10	1566 Arbutus			0	0		7.8	0.73	165	0.2	348		
	<b>Average</b>	0	0	0	0	9.0	7.6	0.74	163.5	0.2	344.0	0.00	0.056
	<b>Maximum</b>	0	0	0	0	9	7.9	0.97	167	0.2	349	0	0.056
	<b>Minimum</b>	0	0	0	0	9	7.2	0.48	158	0.2	335	0	0.056

Red font indicates non-compliance with Canadian Drinking Water Guidelines

Aesthetic Objective for Iron is • 0.3 mg/L

Aesthetic Objective for Manganese is • 0.05mg/L

\*Coliforms are measured in colony forming units (CFU) per 100 millilitres of water (CFU/100mL)

Yellow Column Coliform tests are completed by Health Department

Blue column 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.





# Regional District of Nanaimo - Water Services Department

## West Bay Water Analysis - 2010 Monthly Report



Date	Sample Location (Address)	Health Department		In-House									
		Fecal Coliform *	Total Coliform *	Fecal Coliform *	Total Coliform *	Temp. (°C)	pH	Free Chlorine Residual (mg/L)	Total Dissolved Solids (mg/L)	Salinity (%)	Conductivity (µS/cm)	Total Iron (mg/L)	Manganese (mg/L)
5-Jan-10	2315 Ida Lane	0	0	0	0	8	7.4	0.08	151	0.2	320	0.05	0.118
12-Jan-10	2450 Nanoose Rd			0	0	9	7.1	0.14	149	0.1	313		
20-Jan-10	2315 Ida Lane			0	0	9		0.07	156	0.2	330		
26-Jan-10	2450 Nanoose Rd			0	0	8	7.2	0.07	147	0.1	310		
	<b>Average</b>	0	0	0	0	8.5	7.2	0.09	150.8	0.2	318.3	0.05	0.118
	<b>Maximum</b>	0	0	0	0	9	7.4	0.14	156	0.2	330	0.05	0.118
	<b>Minimum</b>	0	0	0	0	8	7.1	0.07	147	0.1	310	0.05	0.118

**Red font indicates non-compliance with Canadian Drinking Water Guidelines**

Aesthetic Objective for Iron is • 0.3 mg/L

Aesthetic Objective for Manganese is • 0.05mg/L

\*Coliforms are measured in colony forming units (CFU) per 100 millilitres of water (CFU/100mL)

Yellow Column Coliform tests are completed by Health Department

Blue column 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.



# Regional District of Nanaimo - Water Services Department

## West Bay Water Analysis - 2010 Monthly Report



Date	Sample Location (Address)	Health Department		In-House									
		Fecal Coliform *	Total Coliform *	Fecal Coliform *	Total Coliform *	Temp. (°C)	pH	Free Chlorine Residual (mg/L)	Total Dissolved Solids (mg/L)	Salinity (%)	Conductivity (µS/cm)	Total Iron (mg/L)	Manganese (mg/L)
9-Feb-10	2315 Ida Lane	0	0	0	0	9	6.8	0.06	151	0.1	319	0.08	0.154
17-Feb-10	2450 Nanoose Rd			0	0	9	7.1	0.06	151	0.1	318		
23-Feb-10	2315 Ida Lane			0	0	9	7	0.08	150	0.1	317		
	<b>Average</b>	0	0	0	0	9.0	7.0	0.07	150.7	0.1	318.0	0.08	0.154
	<b>Maximum</b>	0	0	0	0	9	7.1	0.08	151	0.1	319	0.08	0.154
	<b>Minimum</b>	0	0	0	0	9	6.8	0.06	150	0.1	317	0.08	0.154

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Aesthetic Objective for Iron is • 0.3 mg/L

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# Regional District of Nanaimo - Water Services Department

## West Bay Water Analysis - 2010 Monthly Report



Date	Sample Location (Address)	Health Department		In-House									
		Fecal Coliform *	Total Coliform *	Fecal Coliform *	Total Coliform *	Temp. (°C)	pH	Free Chlorine Residual (mg/L)	Total Dissolved Solids (mg/L)	Salinity (%)	Conductivity (µS/cm)	Total Iron (mg/L)	Manganese (mg/L)
3-Mar-10	2450 Nanoose Rd			0	0	9	7.1	0.3	148	0.1	311	<3.3	<0.770
9-Mar-10	2315 Ida Lane	0	0	0	0	7	7.2	0.05	151	0.2	320		
17-Mar-10	2450 Nanoose Rd			0	0	9	7.0	0.10	150	0.1	316		
24-Mar-10	2315 Ida Lane			0	0	8	7.1	0.07	152	0.2	320		
30-Mar-10	2450 Nanoose Rd			0	0	8	7.2	0.11	153	0.2	323		
	<b>Average</b>	0	0	0	0	8.2	7.1	0.13	150.8	0.2	318.0	#DIV/0!	#DIV/0!
	<b>Maximum</b>	0	0	0	0	9	7.2	0.3	153	0.2	323	0	0
	<b>Minimum</b>	0	0	0	0	7	7	0.05	148	0.1	311	0	0

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# Regional District of Nanaimo - Water Services Department

## West Bay Water Analysis - 2010 Monthly Report



Date	Sample Location (Address)	Health Department		In-House									
		Fecal Coliform *	Total Coliform *	Fecal Coliform *	Total Coliform *	Temp. (°C)	pH	Free Chlorine Residual (mg/L)	Total Dissolved Solids (mg/L)	Salinity (%)	Conductivity (µS/cm)	Total Iron (mg/L)	Manganese (mg/L)
7-Apr-10	2315 Ida Lane	0	0	0	0	10	7.1	0.08	154	0.2	325	0.05	0.126
13-Apr-10	2450 Nanoose			0	0	10	7	0.13	152	0.2	321		
20-Apr-10	2315 Ida Lane			0	0	11	7.1	0.29	153	0.2	323		
27-Apr-10	2450 Nanoose			0	0	11	7.1	0.12	151	0.1	317		
	<b>Average</b>	0	0	0	0	10.5	7.1	0.16	152.5	0.2	321.5	0.05	0.126
	<b>Maximum</b>	0	0	0	0	11	7.1	0.29	154	0.2	325	0.05	0.126
	<b>Minimum</b>	0	0	0	0	10	7	0.08	151	0.1	317	0.05	0.126

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Aesthetic Objective for Iron is • 0.3 mg/L

Aesthetic Objective for Manganese is • 0.05mg/L

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Date	Sample Location (Address)	Health Department		In-House									
		Fecal Coliform *	Total Coliform *	Fecal Coliform *	Total Coliform *	Temp. (°C)	pH	Free Chlorine Residual (mg/L)	Total Dissolved Solids (mg/L)	Salinity (%)	Conductivity (µS/cm)	Total Iron (mg/L)	Manganese (mg/L)
4-May-10	2315 Ida Lane	0	0	0	0	11	7.2	0.41	158	0.2	331	0.07	0.101
12-May-10	2450 Nanoose			0	0	11	7.1	0.1	156	0.2	329		
19-May-10	2315 Ida Lane			0	0	12	7.5	0.61	16	0.2	335		
25-May-10	2254 Armstrong			0	0	n/a	7.5	0.21	143	0.1	301		
	<b>Average</b>	0	0	0	0	11.3	7.3	0.33	118.3	0.2	324.0	0.07	0.101
	<b>Maximum</b>	0	0	0	0	12	7.5	0.61	158	0.2	335	0.07	0.101
	<b>Minimum</b>	0	0	0	0	11	7.1	0.1	16	0.1	301	0.07	0.101

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Aesthetic Objective for Iron is • 0.3 mg/L

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# Regional District of Nanaimo - Water Services Department

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Date	Sample Location (Address)	Health Department		In-House									
		Fecal Coliform *	Total Coliform *	Fecal Coliform *	Total Coliform *	Temp. (°C)	pH	Free Chlorine Residual (mg/L)	Total Dissolved Solids (mg/L)	Salinity (%)	Conductivity (µS/cm)	Total Iron (mg/L)	Manganese (mg/L)
9-Jun-10	2315 Ida Lane	0	0	0	0		7.8	0.64	158	0.2	333	0.09	0.150
15-Jun-10	2450 Nanoose Rd			0	0		7.4	0.17	111	0.1	234		
22-Jun-10	2254 Armstrong			0	0		7.1	0.03	103	0.1	216		
29-Jun-10	2315 Ida Lane			0	0		7	1.08	121	0.1	254		
	<b>Average</b>	0	0	0	0	#DIV/0!	7.3	0.48	123.3	0.1	259.3	0.09	0.15
	<b>Maximum</b>	0	0	0	0	0	7.8	1.08	158	0.2	333	0.09	0.15
	<b>Minimum</b>	0	0	0	0	0	7	0.03	103	0.1	216	0.09	0.15

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Aesthetic Objective for Iron is • 0.3 mg/L

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# Regional District of Nanaimo - Water Services Department

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Date	Sample Location (Address)	Health Department		In-House									
		Fecal Coliform *	Total Coliform *	Fecal Coliform *	Total Coliform *	Temp. (°C)	pH	Free Chlorine Residual (mg/L)	Total Dissolved Solids (mg/L)	Salinity (%)	Conductivity (µS/cm)	Total Iron (mg/L)	Manganese (mg/L)
6-Jul-10	2315 Ida Lane	0	0	0	0		7.4	0.79	152	0.1	319	0.11	0.142
13-Jul-10	2450 Nanoose Rd			0	0		7.5	0.16	71	0.1	150		
21-Jul-10	2315 Ida Lane			0	0	18	7.6	0.76	97	0.1	203		
27-Jul-10	2450 Nanoose Rd			0	0	18	7.7	0.33	119	0.1	250		
	<b>Average</b>	0	0	0	0	18.0	7.6	0.51	109.8	0.1	230.5	0.11	0.142
	<b>Maximum</b>	0	0	0	0	18	7.7	0.79	152	0.1	319	0.11	0.142
	<b>Minimum</b>	0	0	0	0	18	7.4	0.16	71	0.1	150	0.11	0.142

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Aesthetic Objective for Iron is • 0.3 mg/L

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



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## West Bay Water Analysis - 2010 Monthly Report



Date	Sample Location (Address)	Health Department		In-House									
		Fecal Coliform *	Total Coliform *	Fecal Coliform *	Total Coliform *	Temp. (°C)	pH	Free Chlorine Residual (mg/L)	Total Dissolved Solids (mg/L)	Salinity (%)	Conductivity (µS/cm)	Total Iron (mg/L)	Manganese (mg/L)
4-Aug-10	2315 Ida Lane	0	0	0	0	19	7.5	0.08	90	0.1	189	0.1	0.076
9-Aug-10	2254 Armstrong			0	0	17	7.6	0.09	114	0.1	240		
17-Aug-10	2450 Nanoose			0	0	16	7.2	0.06	107	0.1	226		
23-Aug-10	2315 Ida Lane			0	0	19	7.7	0.09	99	0.1	207		
31-Aug-10	2254 Armstrong			0	0	16	7.7	0.18	120	0.1	253		
	<b>Average</b>	0	0	0	0	17.4	7.5	0.10	106.0	0.1	223.0	0.10	0.076
	<b>Maximum</b>	0	0	0	0	19	7.7	0.18	120	0.1	253	0.1	0.076
	<b>Minimum</b>	0	0	0	0	16	7.2	0.06	90	0.1	189	0.1	0.076

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Aesthetic Objective for Iron is • 0.3 mg/L

Aesthetic Objective for Manganese is • 0.05mg/L

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**Comments:**

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





# Regional District of Nanaimo - Water Services Department

## West Bay Water Analysis - 2010 Monthly Report



Date	Sample Location (Address)	Health Department		In-House									
		Fecal Coliform *	Total Coliform *	Fecal Coliform *	Total Coliform *	Temp. (°C)	pH	Free Chlorine Residual (mg/L)	Total Dissolved Solids (mg/L)	Salinity (%)	Conductivity (µS/cm)	Total Iron (mg/L)	Manganese (mg/L)
8-Sep-10	2315 Ida Lane	0	0	0	0	17	7.4	0.05	103	0.1	217	0.08	0.074
15-Sep-10	2450 Nanoose			0	0	16	7.1	0.08	149	0.1	313		
21-Sep-10	2315 Ida Lane			0	0	16	7.6	0.07	106	0.1	226		
28-Sep-10	2254 Armstrong			0	0	16	7.3	0.06	102	0.1	215		
	<b>Average</b>	0	0	0	0	16.3	7.4	0.07	115.0	0.1	242.8	0.08	0.074
	<b>Maximum</b>	0	0	0	0	17	7.6	0.08	149	0.1	313	0.08	0.074
	<b>Minimum</b>	0	0	0	0	16	7.1	0.05	102	0.1	215	0.08	0.074

**Red font indicates non-compliance with Canadian Drinking Water Guidelines**

Aesthetic Objective for Iron is • 0.3 mg/L

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Yellow Column Coliform tests are completed by Health Department

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**Comments:**

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



# Regional District of Nanaimo - Water Services Department

## West Bay Water Analysis - 2010 Monthly Report



Date	Sample Location (Address)	Health Department		In-House									
		Fecal Coliform *	Total Coliform *	Fecal Coliform *	Total Coliform *	Temp. (°C)	pH	Free Chlorine Residual (mg/L)	Total Dissolved Solids (mg/L)	Salinity (%)	Conductivity (µS/cm)	Total Iron (mg/L)	Manganese (mg/L)
5-Oct-10	2315 Ida Lane	0	0	0	0	16	7	0.02	99	0.1	209	0.12	0.072
13-Oct-10	2450 Nanoose			0	0	14	7.2	0.05	140	0.1	295		
18-Oct-10	2254 Armstrong			0	0		7.8	0.03	132	0.1	277		
25-Oct-10	2315 Ida Lane			0	0	14	7.8	0.05	111	0.1	234		
	<b>Average</b>	0	0	0	0	14.7	7.5	0.04	120.5	0.1	253.8	0.12	0.072
	<b>Maximum</b>	0	0	0	0	16	7.8	0.05	140	0.1	295	0.12	0.072
	<b>Minimum</b>	0	0	0	0	14	7	0.02	99	0.1	209	0.12	0.072

**Red font indicates non-compliance with Canadian Drinking Water Guidelines**

Aesthetic Objective for Iron is • 0.3 mg/L

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\*Coliforms are measured in colony forming units (CFU) per 100 millilitres of water (CFU/100mL)

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# Regional District of Nanaimo - Water Services Department

## West Bay Water Analysis - 2010 Monthly Report



Date	Sample Location (Address)	Health Department		In-House									
		Fecal Coliform *	Total Coliform *	Fecal Coliform *	Total Coliform *	Temp. (°C)	pH	Free Chlorine Residual (mg/L)	Total Dissolved Solids (mg/L)	Salinity (%)	Conductivity (µS/cm)	Total Iron (mg/L)	Manganese (mg/L)
2-Nov-10	2315 Ida Lane	0	0	0	0	13	7.5	0.02	177	0.2	371	0.04	0.097
9-Nov-10	2450 Nanoose Rd			0	0	11	7.6	0.15	183	0.2	382		
16-Nov-10	2254 Armstrong			0	0	11	7.7	0.04	175	0.2	369		
24-Nov-10	2315 Ida Lane			0	0	9	7.4	0.05	176	0.2	369		
30-Nov-10	2315 Ida Lane			0	0	10	7.5	0.1	176	0.2	349		
	<b>Average</b>	0	0	0	0	10.8	7.5	0.07	177.4	0.2	368.0	0.04	0.097
	<b>Maximum</b>	0	0	0	0	13	7.7	0.15	183	0.2	382	0.04	0.097
	<b>Minimum</b>	0	0	0	0	9	7.4	0.02	175	0.2	349	0.04	0.097

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# Regional District of Nanaimo - Water Services Department

## West Bay Water Analysis - 2010 Monthly Report



Date	Sample Location (Address)	Health Department		In-House									
		Fecal Coliform *	Total Coliform *	Fecal Coliform *	Total Coliform *	Temp. (°C)	pH	Free Chlorine Residual (mg/L)	Total Dissolved Solids (mg/L)	Salinity (%)	Conductivity (µS/cm)	Total Iron (mg/L)	Manganese (mg/L)
7-Dec-10	2315 Ida Lane	0	0	0	0	10	7.3	0.06	180	0.2	378	0.06	0.049
14-Dec-10	2450 Nanoose			0	0		7.2	0.12	177	0.2	372		
21-Dec-10	2315 Ida Lane			0	0		7.8	0.67	174	0.2	364		
30-Dec-10	2315 Ida Lane			0	0		7.7	0.12	179	0.2	378		
	<b>Average</b>	0	0	0	0	10.0	7.5	0.24	177.5	0.2	373.0	0.06	0.049
	<b>Maximum</b>	0	0	0	0	10	7.8	0.67	180	0.2	378	0.06	0.049
	<b>Minimum</b>	0	0	0	0	10	7.2	0.06	174	0.2	364	0.06	0.049

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\*Coliforms are measured in colony forming units (CFU) per 100 millilitres of water (CFU/100mL)

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**Comments:**

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## **APPENDIX C**

### **EMERGENCY RESPONSE PLAN**

# EMERGENCY RESPONSE PLAN

REGIONAL DISTRICT  
OF  
NANAIMO

WATER SYSTEMS

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## Prime Responsibilities

- Provide safe drinking water.
- Provide potable water for sanitation purposes.
- Provide water for fire suppression.
- Prevent unnecessary loss of stored water.
- Restore the integrity of the entire water system as soon as possible.
- Maintain integrity and quality of supply.

## Emergency Response and Recovery Actions

- Analyze the type and severity of the emergency.
- Provide emergency assistance to save lives.
- Reduce the probabilities of additional injuries or damage.
- Provide situational reporting to appropriate agencies as required.
- Perform emergency repairs based on priority demand.
- Return system to normal levels. (recovery)
- Evaluate response and preparedness plan.
- Revise plan as necessary.
- Provide maps, notices, and direction necessary for water recovery.



## Communication Check List

In an emergency it will be important to contact the key people shown below. This will help reduce confusion and assist in ensuring any important messaging is done so correctly and quickly.

*IF REQUIRED, CONTACT P.E.P or V.I.H.A. BEFORE MAKING THE FOLLOWING CONTACTS AS PER THE EMERGENCY PLANS*

### ***RDN Priority Contacts***

<b>MANAGER OF WATER SERVICES .....</b>	<b>MIKE DONNELLY</b> <i>(250) 390-6560</i>
<b>G.M. REGIONAL &amp; COMMUNITY UTILITIES .....</b>	<b>JOHN FINNIE</b> <i>(250) 390-6560</i>
<b>COMMUNICATIONS COORDINATOR.....</b>	<b>ADRIENNE MERCER</b> <i>(250) 390-4111</i>
<b>EMERGENCY COORDINATOR.....</b>	<b>JANI THOMAS</b> <i>(250) 713-2057(cell)</i>

### ***Key Communication Options***

#### **Management Support**

- Contact Electoral Area Director
- Contact the local radio station and provide a brief message if public health and safety are at risk. Follow up with a press release.

#### **Field Staff Support**

- Post notices on household front doors.
- Attach warning signs to existing Water Sprinkling Regulation signs in each community.
- Put up roadside signage at the entrance to the community.

#### **Administrative Support**

- Provide information message on the RDN web site.
- Review after hours office and voice mail messaging.
- Provide notification to other RDN staff.

## *Emergency Contact Numbers*

### *Personnel Contacts*

<i>Name</i>	<i>Position</i>	<i>Phone</i>
Dave	Chief Operator	(250) 248-4914
Randy	Operator II	(250) 248-4914
Heather	Operator III	(250) 248-4914
Brian	Operator III	(250) 248-4914
Brad	Operator II	(250) 248-4914
Lyndon	Operator II	(250) 248-4914
Mike Donnelly	Manager of Water Services	(250) 390-6560
Deb Churko	Engineering Technologist	(250) 390-6560
Jack Eubank	Bylaw Officer	(250) 390-6560
John Finnie	General Manager	(250) 390-6560

### *Electoral Area Directors*

<i>Electoral Area</i>	<i>Director</i>	<i>Phone</i>	<i>email address</i>
A	Joe Burnett	722-2656	quairlanding@shaw.ca
B	Gisele Rudischer	247-8795	giselerudischer@gmail.com
C	Maureen Young	754-5896	Maureen_young@shaw.ca
E	George Holme	468-7237	gholme@shaw.ca
F	Lou Biggemann	248-9078	lwb@shaw.ca
G	Joe Stanhope	248-6401	jstanhope@shaw.ca
H	Dave Bartram	757-9737	dwbartram@shaw.ca

### *Government Agency Contacts*

Ministry of Environment	Nanaimo	(250) 751-3100
Department of Fisheries and Oceans	Nanaimo	754-0230
Provincial Emergency Preparedness (PEP) and Dangerous Goods Spills	Victoria	1-800-663-3456
Environmental Health Office	Parksville	947-8222
Bill Wrathall, Env. Health Officer	Parksville	947-8222
Environmental Health Office	Nanaimo	755-6215
Murray Sexton, Public Health Engineer	Nanaimo	755-6293
Medical Health Officer	Nanaimo	740-6988
		<i>or after hours</i> 1-800-204-6166
City of Parksville Public Works	Parksville	248-5412
Town of Qualicum Beach Public Works	Qualicum Beach	752-6921
District of Lantzville	Lantzville	390-4006

### *Emergency*

Hospital	- Nanaimo	754-2141
	- Parksville phone number (Nanaimo hospital)	248-2332
Ambulance	- Parksville	911 or 248-3511
	- Nanaimo	911 or 758-8181
Police	- Parksville	911 or 248-6111
	- Nanaimo	911 or 754-2345
Fire Department	- Parksville	911 or 248-3242
	- Nanoose Bay	911 or 468-7141
	- Qualicum Beach	911 or 752-6921
	- Cedar	911 or 722-3122

### ***Priority Services***

BC Hydro (Qualicum Beach number)	(250) 752-8012 or
BC Hydro– Derek Leik 755-4734	1-888-769-3766
Telus	811-2323 or
Telus- Paul McGrath cell 248-0983	741-7713 or 741-7716
Teresen Gas	248-4880
Shaw Cable (Nanaimo)	754-5571
CP Rail	1-800-716-9132
French Creek Pollution Control Centre	248-5794
Chlorine Manufacturer (Brentagg)	1-800-661-1830

### ***Community Contacts***

District 69 School Board Office	248-4241
Nanoose Bay School	468-7414
Nanoose Children's Centre	468-1784
Nanoose Place	468-5339
Nanoose Post Office	468-7722
Naval Base (Department of National Defense)	756-5021 or 468-5004

### ***Excavation Services***

Shoreline Equipment (Doug Penny)	468-7759 or 755-9502 (cell)
Lundine Backhoe Service (Jim Lundine)	752-6808 or 951-1508 (cell)

### ***Electrical Contractors***

Canem Electric	468-1887
East Isle Power (Harvey Sommerfeld)	821-0415 or 954-7463 (cell)
TC Trades (Tom Frenette)	756-0077 or 250-668-0078

### *Other Services*

<b>Plumbing Services (Maci Motor – Pump Repair)</b>	<b>(250) 248-4423</b>
<b>Bulk water supply (BC Water Service)</b>	<b>954-3628</b>
<b>Bottled water supply (Water Pure &amp; Simple)</b>	<b>752-1373</b>
<b>EPCOR (Parksville)</b>	<b>951-2460</b>
<b>Sand and Gravel (Ozero)</b>	<b>752-1482</b>
<b>Sand and Gravel (Luissier &amp; Sons)</b>	<b>468-9994</b>
<b>Pump Trucks (Action Tank Service)</b>	<b>248-3833</b>
<b>Pump Trucks and Toilet Rentals (A-1 Septic)</b>	<b>248-4438</b>
<b>Portable Washrooms (Coast Toilet Rentals)</b>	<b>753-7552</b>
<b>Running Water Enterprises (Water Hauling Service)</b>	<b>947-5197</b>
<b>Woods Water Hauling</b>	<b>758-2677</b>
<b>Fyfe’s Well and Water Services</b>	<b>752-4986 or 248-0830 (cell)</b>

### *Suppliers*

<b>Four Star Waterworks (piping)</b>	<b>954-3546</b>
<b>Hwy Four Rentals (equipment &amp; pumps)</b>	<b>248-1100</b>
<b>Iritex Pumps and Irrigation – (pumps)</b>	<b>248-7028</b>
<b>Windsor Plywood (miscellaneous building supplies)</b>	<b>752-3122</b>
<b>Albertsons Hardware (miscellaneous building supplies)</b>	<b>248-6888</b>
<b>Robinson Rentals</b>	<b>753-2465</b>
<b>United Rentals</b>	<b>758-3911</b>

### *Media Services*

<b>Adrienne Mercer, RDN Communications Coordinator</b>	<b>1-877-607-4111 or 713-1075 (cell)</b>
<b>Radio Station (CKWV) Nanaimo and Parksville</b>	<b>758-1131</b>
<b>TV Station (CHEK)</b>	<b>383-2435</b>
<b>Newspaper (PQ News and The Weekender)</b>	<b>248-4341</b>
<b>The Oceanside Star</b>	<b>954-0600</b>
<b>Nanaimo Daily News / Harbour City Star</b>	<b>729-4212</b>

## Emergency Response Plans

### *Contamination of Source (Spills, Accidents, Vandalism)*

**Actions:** Shut down pump  
Notify Provincial Emergency Program (PEP)  
Notify Health Unit  
Notify all users if necessary under direction of Health Unit  
Contact government agencies for advice and assistance  
Contact local media for public service announcements  
Post signs and deliver notices to homes and businesses. (See attached samples)  
Arrange alternate source if necessary – i.e., bottled or bulk water  
Advise RDN supervisory personnel

**Contacts:** Local Health Unit (Environmental Health Department)  
Provincial Emergency Preparedness, Police, Ministry of Environment  
All schools and community centres – see *“Priority Contacts” List*  
RCMP if there has been vandalism

### *Loss of Source – Loss Of Reservoir or Supply Lines*

**Actions:** Ensure pumps are shut off. (To protect pump)  
Notify all users  
Contact government agencies for advice and assistance  
Arrange alternate source – i.e., bottled water, bulk water, storage tank  
Advise RDN supervisory personnel if necessary

**Contacts:** Local Health Unit (Environmental Health Department) and Ministry of Environment

### *Flood Conditions*

**Actions:** Notify all users regarding the potential for water contamination, loss of pump, power, etc. Users should be advised to store some drinking water in advance, and to boil any suspect water for two minutes or disinfect with chlorine when flood conditions exist  
Phone government contacts  
Contact local media for public service announcement when customers can not be reached by phone  
Post signs or deliver notices if necessary. (See attached samples)  
Arrange alternate source if possible – i.e. bottled water, bulk hauler or storage tank  
Advise RDN supervisory personnel

**Contacts:** Local Health Unit (Environment Health Department), Provincial Emergency Preparedness, and Ministry of Environment

### ***Broken Water Main***

**Actions:** Shut pump off when backflow conditions have been prevented  
Call for repairs as required – i.e. excavator, backhoe  
Notify all users of interruption of service  
Advise local Public Health office  
Arrange alternate source if necessary  
Advise RDN supervisory personnel

**Contacts:** Advise local Public Health office. (Environmental Health Department)

### ***Chlorination Failure***

**Actions:** Advise local Public Health Office  
Shut off well pumps. Monitor reservoir levels.  
Notify all users to boil water for two minutes or take other disinfection procedures in accordance with recommendations of local health officials  
Post signs or deliver notices if necessary. (See attached samples)  
Arrange chlorinator repairs  
Advise RDN supervisory personnel

**Contacts:** Local Health Unit (Environmental Health Officer)  
Chlorinator manufacturer

### ***Pump Failure***

**Actions:** Notify all users of interruption of service  
Call for repairs: pump manufacturer if necessary  
Advise local Public Health office (if interruption not short term)  
Arrange alternate source if necessary – bottled or bulk water, etc.  
Advise RDN supervisory personnel if necessary

**Contacts:** Local Health Unit (Environmental Health Department)

### ***Power Failure***

**Actions:** Call BC Hydro. Find out when power will be restored  
Start back-up generator or arrange to get one  
Notify all users about interruption of service if backup not capable of maintaining supply  
Post signs or deliver notices if necessary. (See attached samples)  
Advise local Public Health Office  
Arrange alternate source if necessary – bottled or bulk water, etc.  
Advise RDN supervisory personnel

**Contacts:** Local Health Unit (Environmental Health Department)

## ***Backflow or Back Siphonage***

**Actions:** Advise Medical Health Officer at local Health unit  
Notify all users to boil water for two minutes or take other disinfection procedures in accordance with recommendations of local health officials  
Purge and disinfect lines as directed, after corrections have been made  
Post signs or deliver notices if necessary. (See attached samples)  
Advise RDN supervisory personnel

**Contacts:** Local Health Unit (Environmental Health Department)

## ***Bacteria Count (RDN Lab)***

**Actions:** Advise Medical Health Officer at local Health unit  
Follow procedures in accordance with recommendations of local health officials  
Post signs or deliver notices if necessary. (See attached samples)  
Advise RDN supervisory personnel

**Contacts:** Local Health Unit (Environment Health Department)



## APPENDICES

Boil Water Advisory Notice	10
Boil Water Order Notice	11
Unfit for Drinking Notice	12
Service Interruption Notice	13

**sample**

# NOTICE

## Boil Water Advisory

Effective date: \_\_\_\_\_

Please note that all water used for domestic purposes (drinking, cooking, etc.) should be boiled before consumption. The boiling should be at a rolling boil and for a minimum of one minute.

RDN Water Services staff are continually monitoring the water supply system and will provide updates as they become available.

Watch for information updates at [www.rdn.bc.ca](http://www.rdn.bc.ca) (WaterSmart) and listen to your local radio station for more information.

This advisory will be in effect until further notice.

For further information contact the

Regional District of Nanaimo at:  
1-877-607-4111 or 1-250-390-4111  
Water Services Field Office: 1-250-248-4914

*Sample* **NOTICE**  
**Boil Water Order**

**Effective date:** \_\_\_\_\_

Please note that all water used for domestic purposes (drinking, cooking, etc.) should be boiled before consumption. The boiling should be at a rolling boil and for a minimum of two minutes.

RDN Water Services staff are continually monitoring the water supply system and will provide updates as they become available.

Watch for information updates at [www.rdn.bc.ca](http://www.rdn.bc.ca) (WaterSmart) and listen to your local radio station for more information.

This order will be in effect until further notice.

For further information contact the

Regional District of Nanaimo at:  
1-877-607-4111 or 1-250-390-4111  
Water Services Field Office: 1-250-248-4914

# WARNING

*sample*

**This Water is  
Considered  
Unfit for Drinking  
or Domestic Use**

**Effective date: \_\_\_\_\_**

For further information contact the

Regional District of Nanaimo at:

1-877-607-4111 or 1-250-390-4111

Water Services Field Office: 1-250-248-4914

*Sample*

# NOTICE

## Water Supply Service Interruption

Effective date: \_\_\_\_\_

Please be advised that your water service may be interrupted or off for periods during the day.

When service is resumed, the water may be discoloured. This is due to disturbed deposits in the pipes and is not harmful.

This advisory will be in effect until further notice.

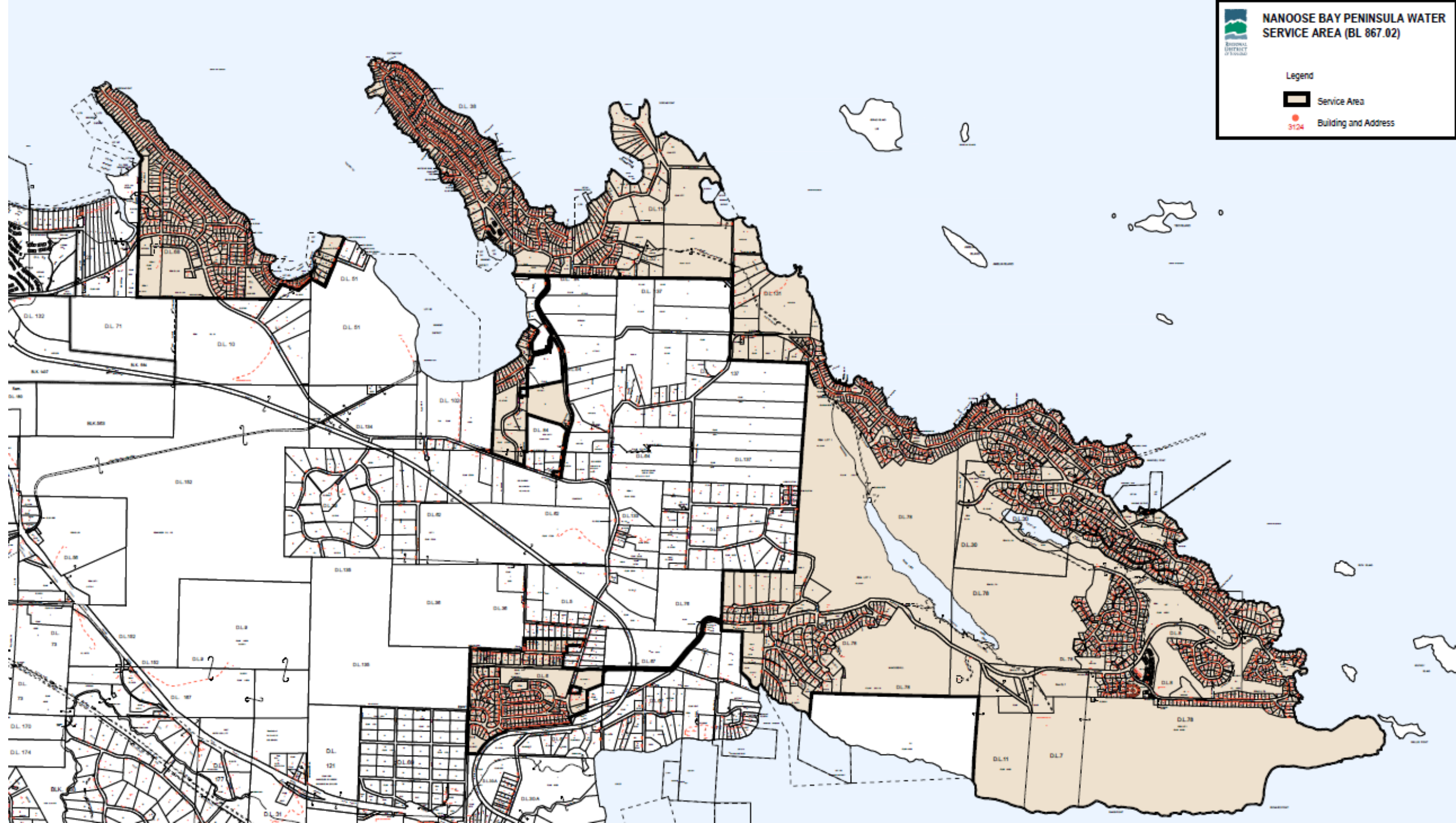
For further information contact the

Regional District of Nanaimo at:  
1-877-607-4111 or 1-250-390-4111  
Water Services Field Office: 1-250-248-4914

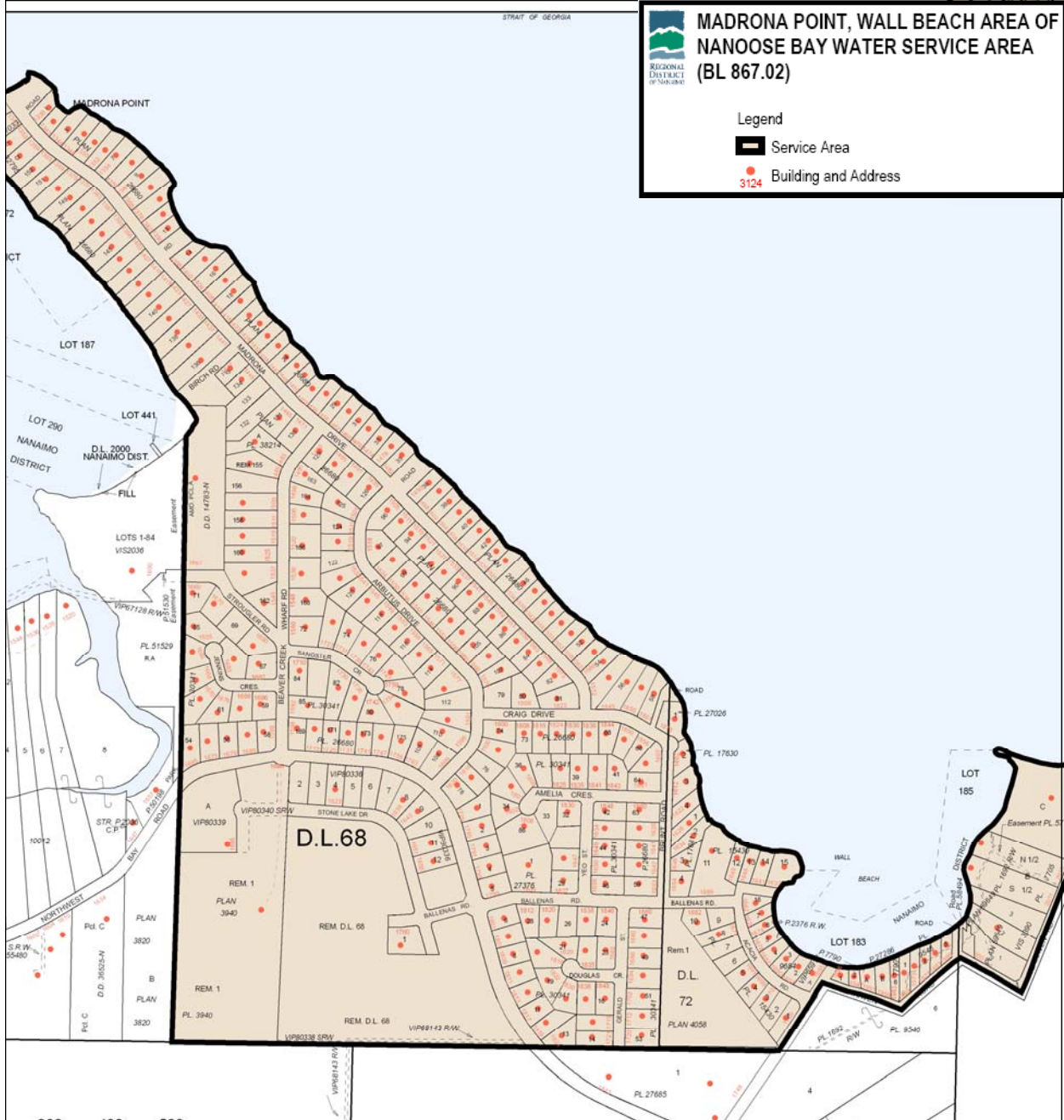
# MAPS

## Water Service Areas


Nanoose Bay Peninsula Water Service Area	Map 1
Neighbourhoods: Madrona/Wall Beach	Map 2
Fairwinds	Map 3
Arbutus Park	Map 4
West Bay	Map 5
Driftwood	Map 6
French Creek Water Service Area	Map 7
Surfside Water Service Area	Map 8
San Pareil Water Service Area	Map 9
Englishman River Water Service Area	Map 10
Melrose Water Service Area	Map 11
Decourcey Water Service Area	Map 12
Whiskey Creek Water Service Area	Map 13



MAP 1 NANOOSE BAY  
PENINSULA







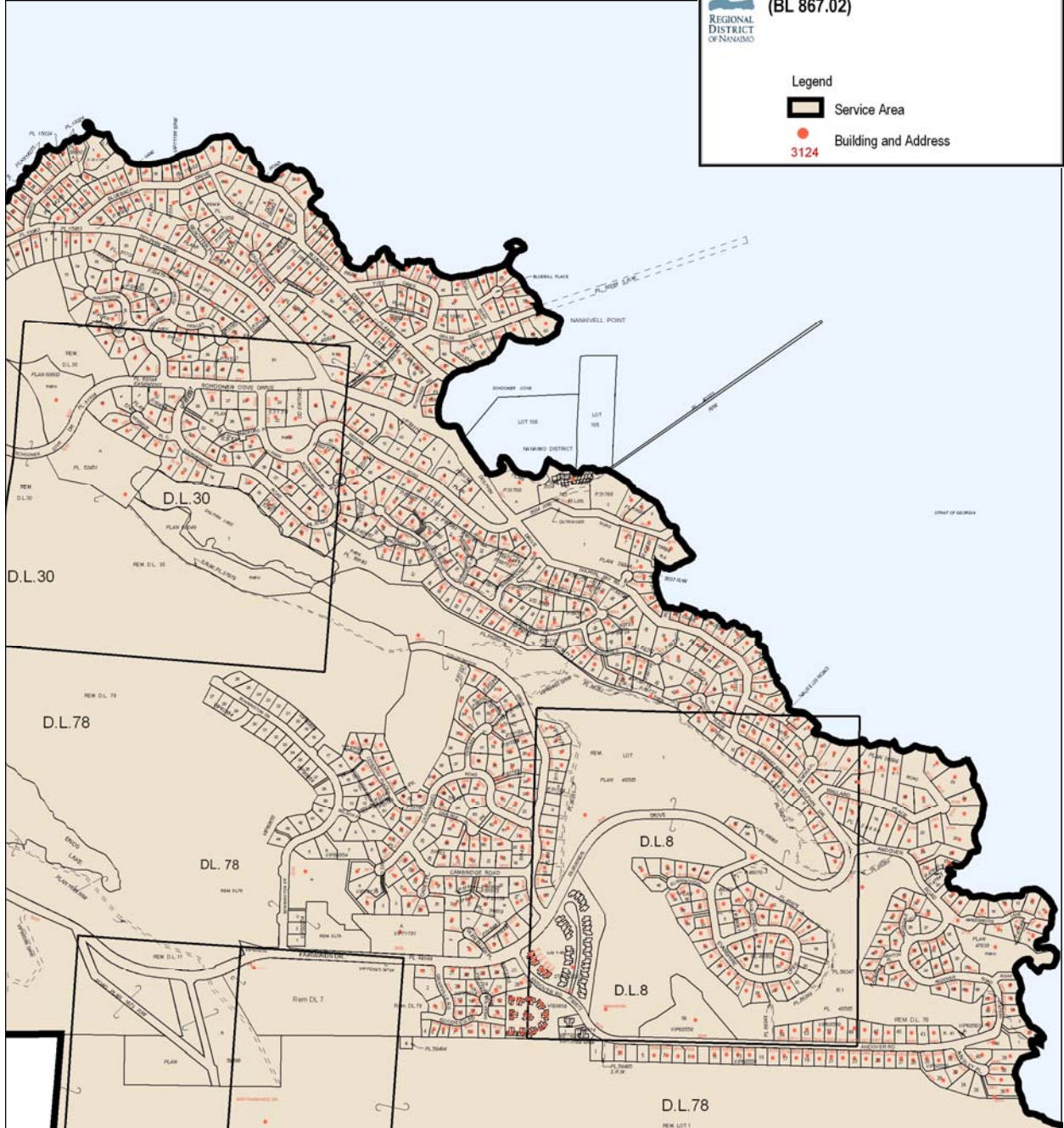


**FAIRWINDS AREA OF NANOOSE BAY  
WATER SERVICE AREA  
(BL 867.02)**

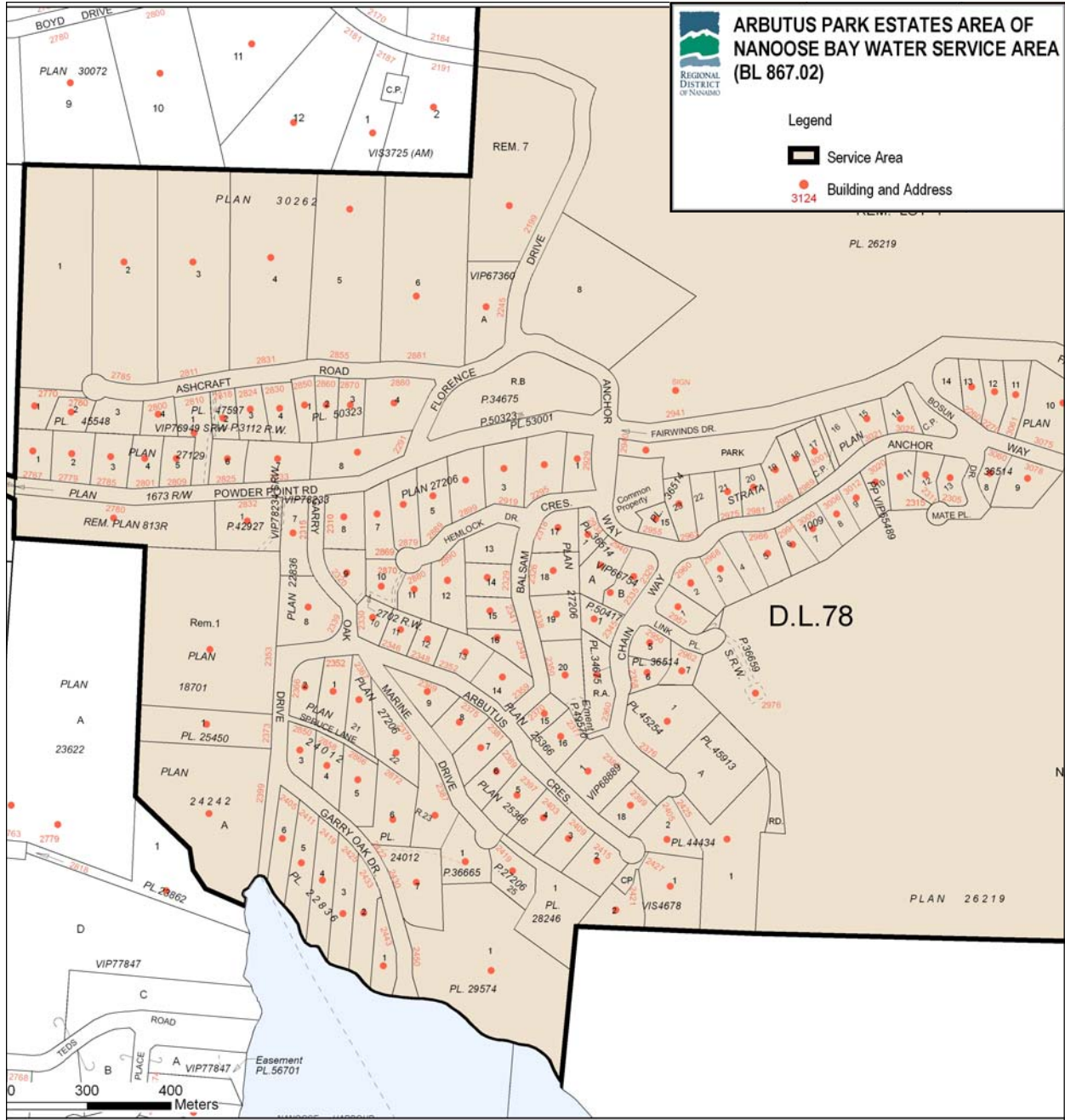
Legend

-  Service Area
-  Building and Address

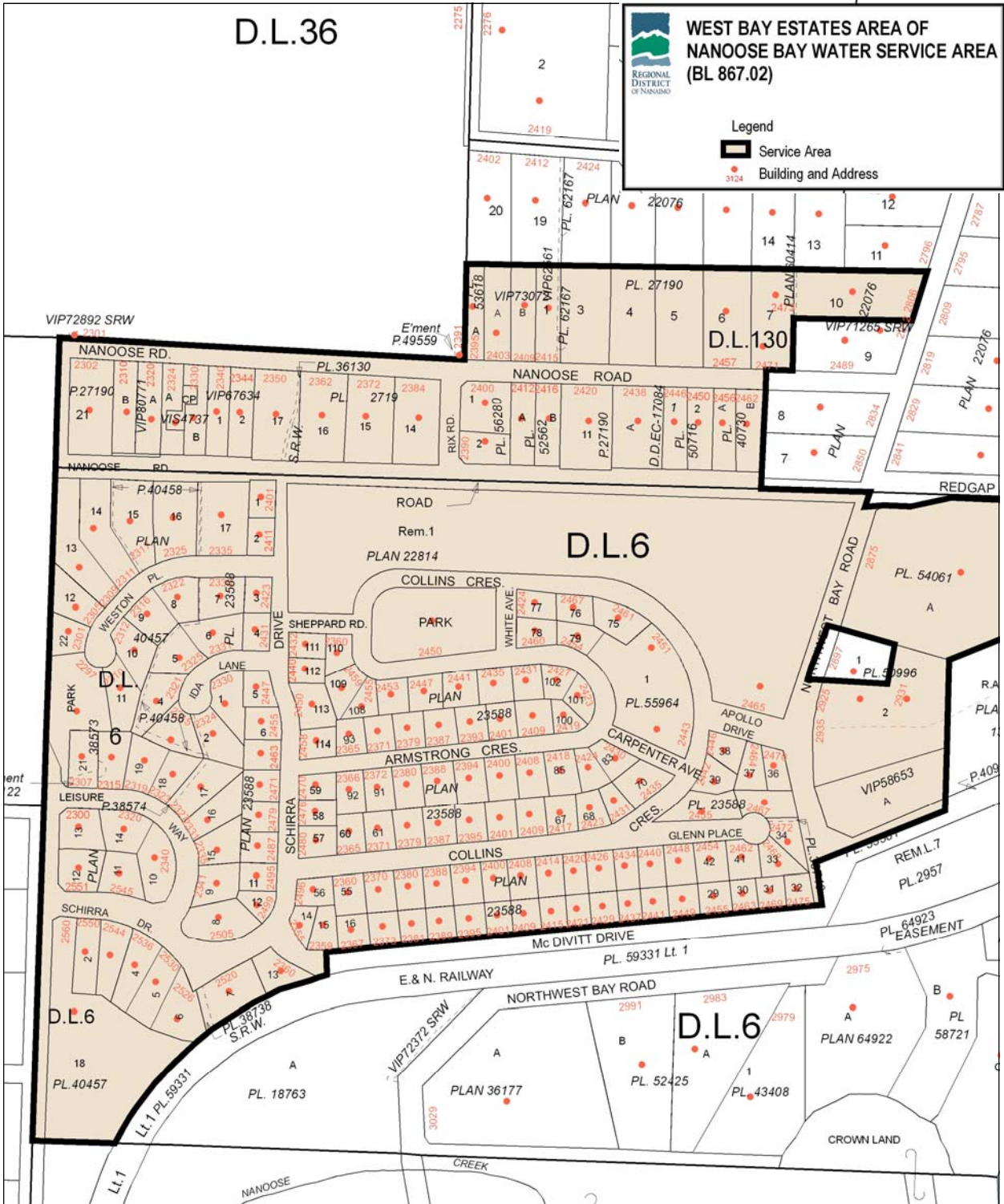
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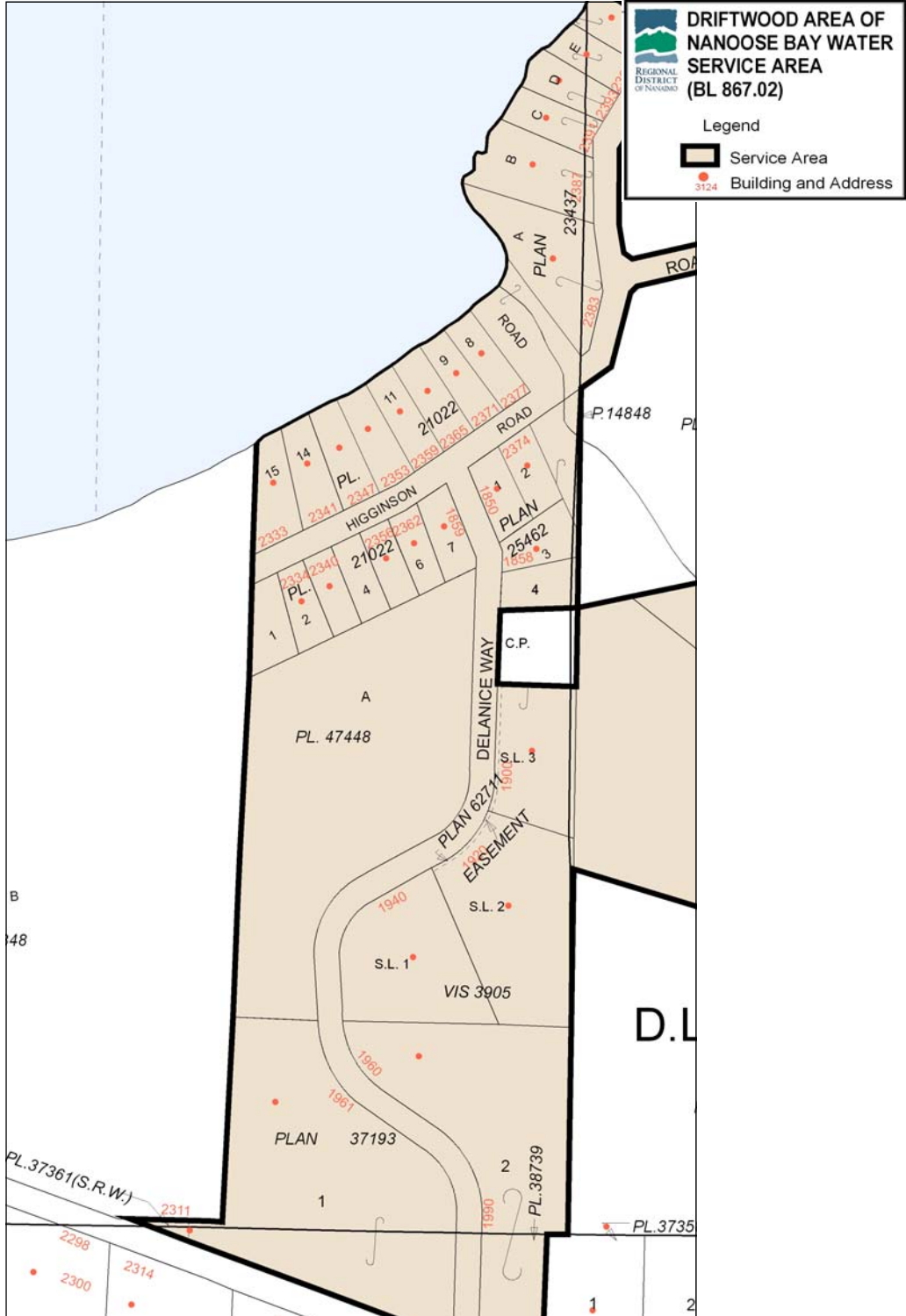


**MAP 3 FAIRWINDS**

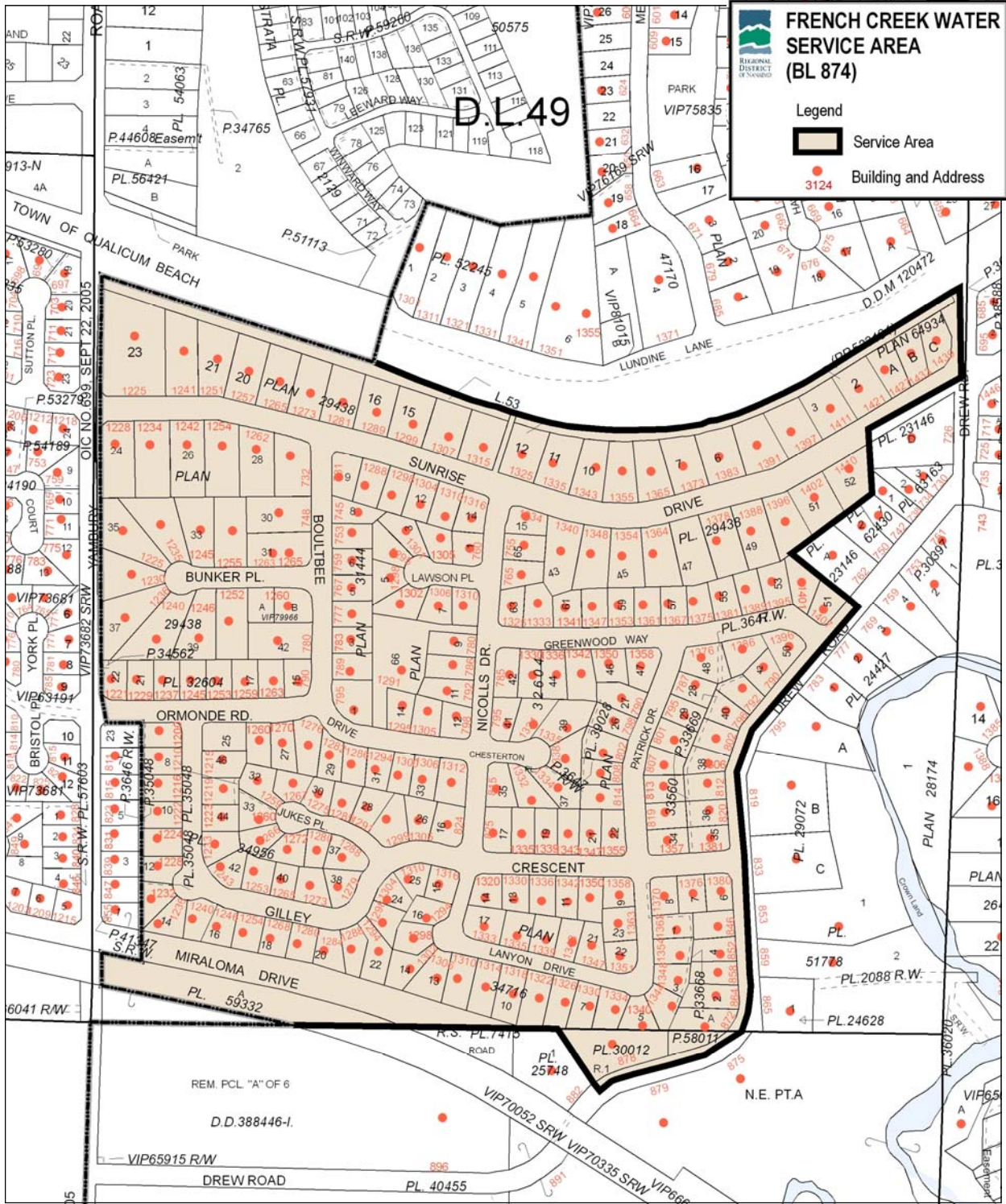


# MAP 4 ARBUS PAK





MAP 6 DRIFTWOOD



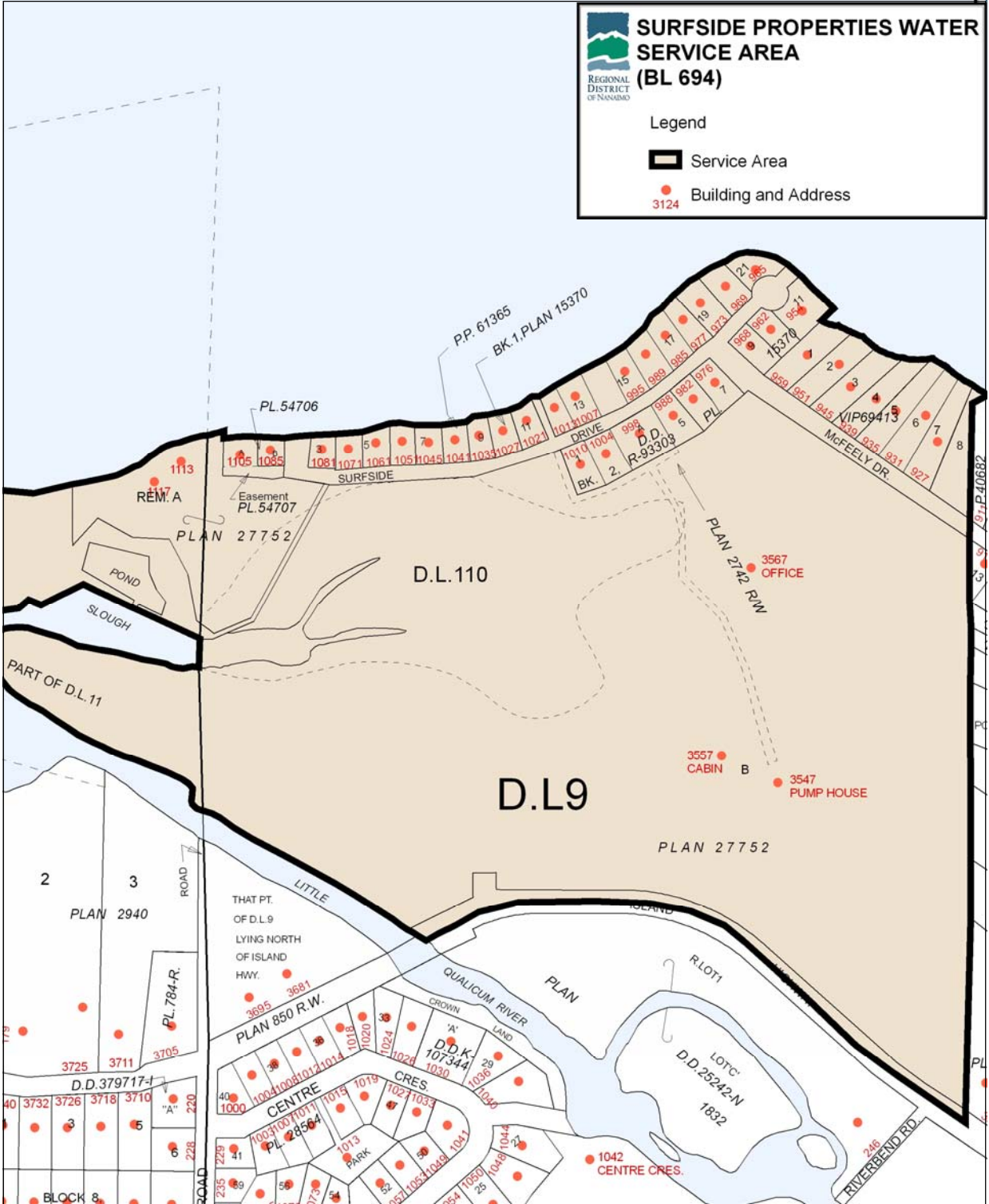
**MAP 7 FRENCH CREEK**

**SURFSIDE PROPERTIES WATER SERVICE AREA (BL 694)**

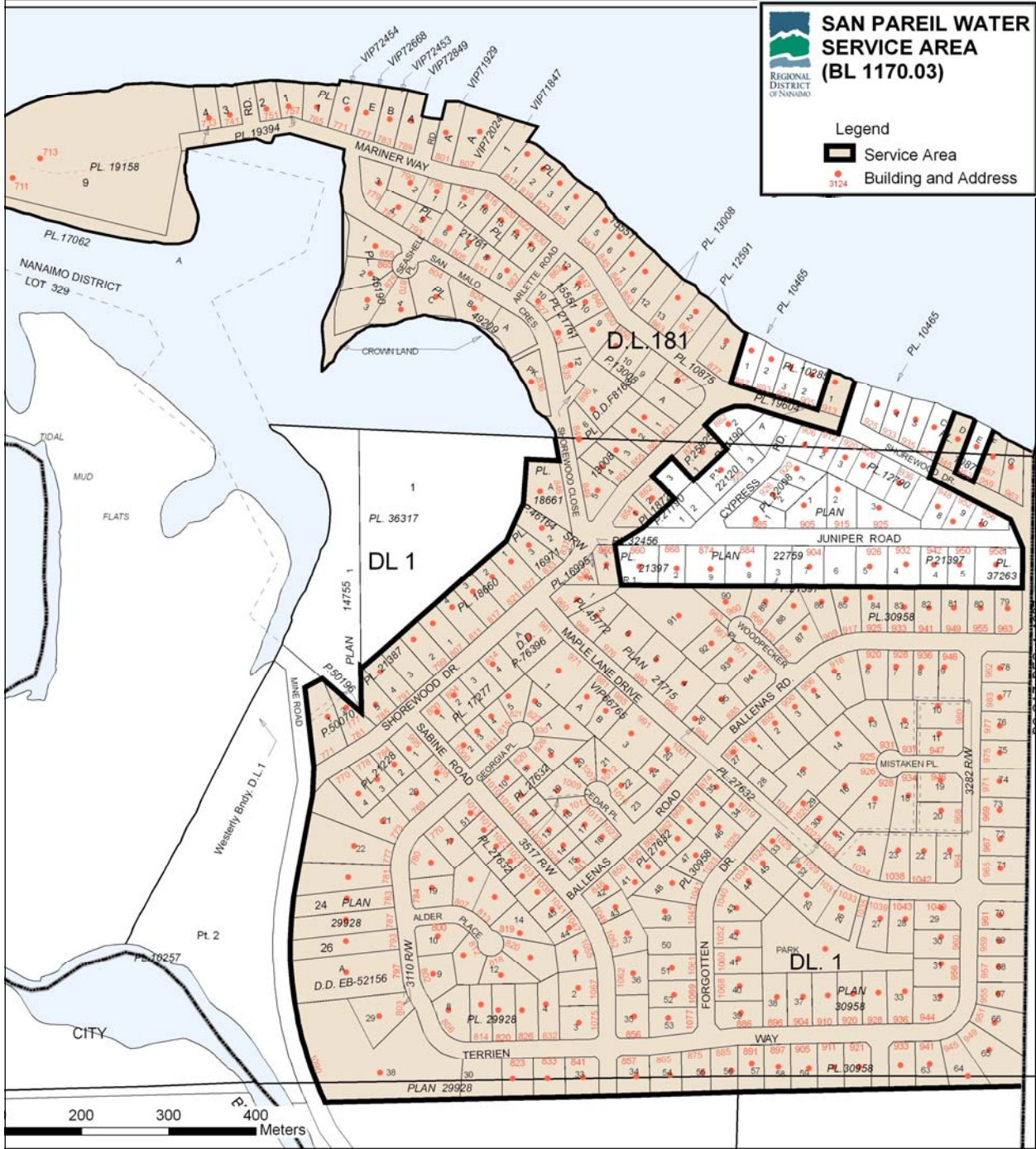
REGIONAL DISTRICT OF NANAIMO

Legend

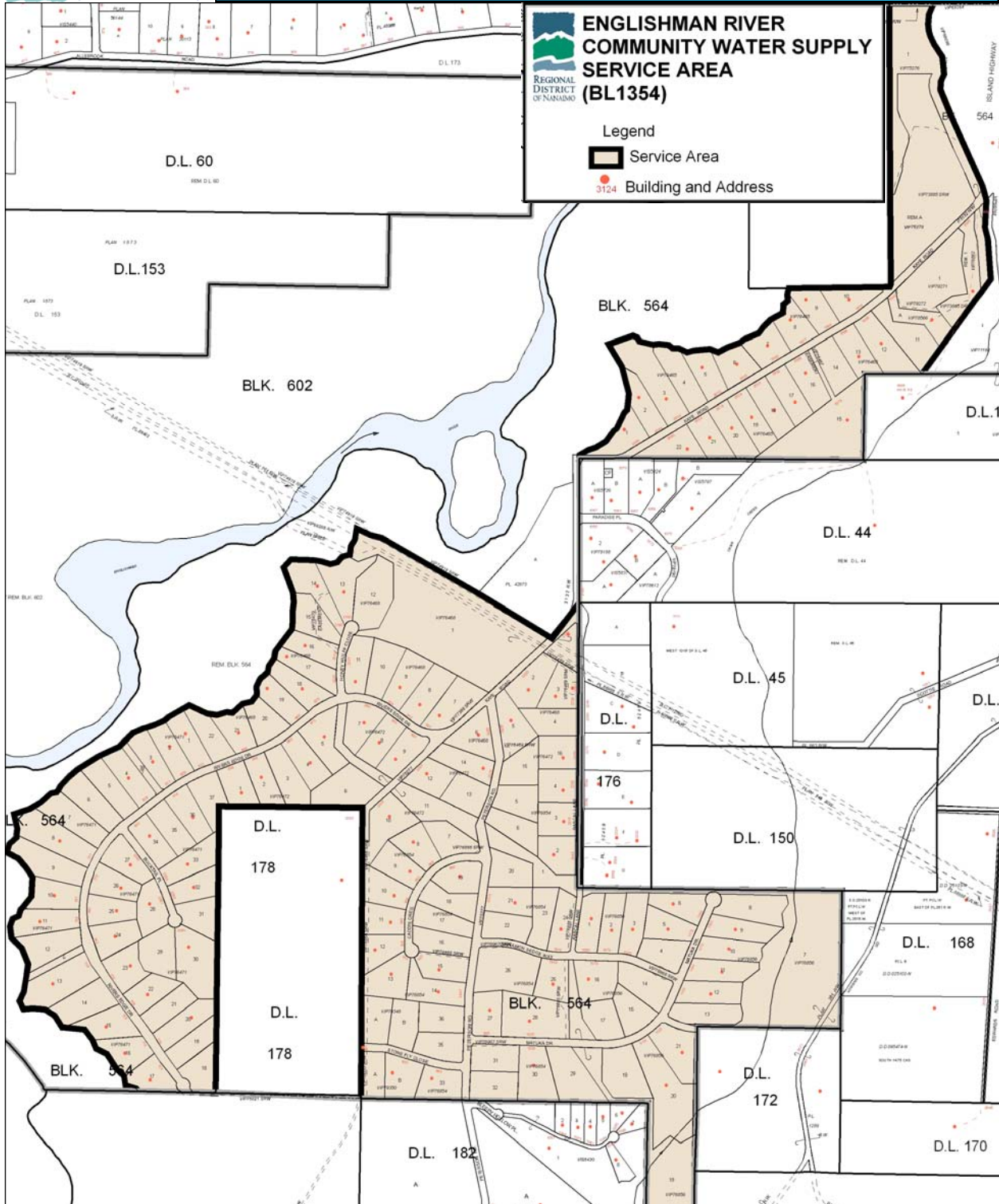
- Service Area
- Building and Address



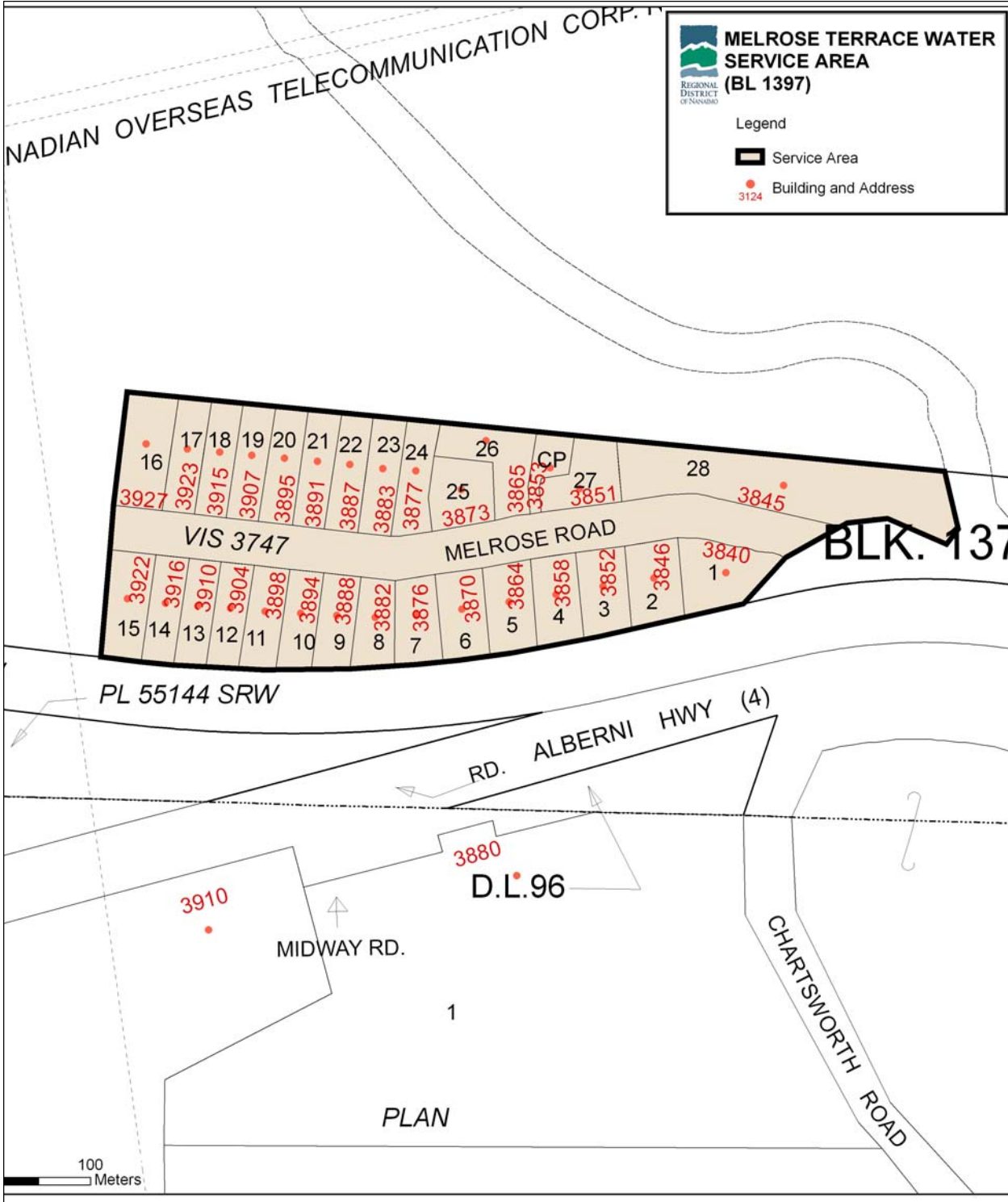
**MAP 8 SURFSIDE**



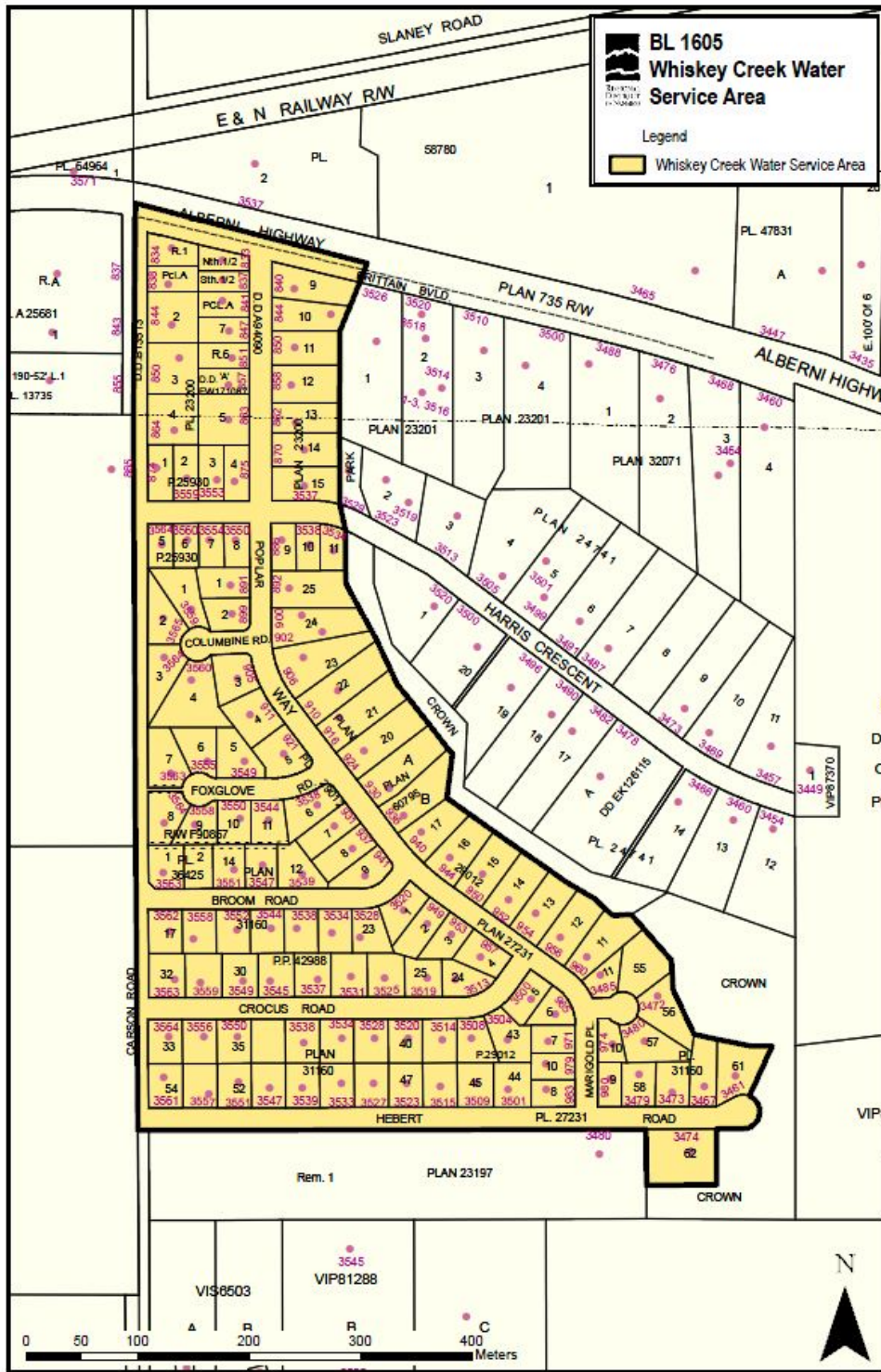
**MAP 9 SAN PAREIL**











MAP 13 WHISKEY CREEK