



# MELROSE

## Water Service Area Annual Report 2011

Prepared by:



**REGIONAL DISTRICT OF NANAIMO**  
*Water Services Department*  
June 2012



## Table of Contents

1.	Introduction.....	1
2.	Melrose Water Service Area.....	1
2.1	Groundwater Wells .....	1
2.2	Reservoirs.....	1
2.3	Distribution System.....	1
3.	Water Sampling and Testing Program.....	2
4.	Water Quality - Source Water and Distribution System .....	2
5.	Water Quality Inquiries and Complaints .....	2
6.	Groundwater Production and Consumption.....	3
7.	Maintenance Program.....	3
8.	Water System Projects .....	4
8.1	2011 Completed Studies & Projects.....	4
8.2	2012 Proposed Projects & Upgrades .....	4
9.	Emergency Response Plan.....	4
10.	Cross Connection Control.....	4
11.	Closing .....	5

Appendix A - Map of Melrose Water Service Area

Appendix B - Water Quality Testing Results

Appendix C - Emergency Response Plan

**1. Introduction**

The following annual report describes the Melrose Water Service Area and summarizes the water quality and production data from 2011. 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 2012.

**2. Melrose Water Service Area**

The Melrose Water Service Area was established in April 2005 when the RDN acquired the existing Melrose Terrace Strata Plan VIS3747 water system. The water service area is comprised of 28 residential properties on Melrose Road located near the Alberni Highway southwest of Coombs. The water source for the Melrose Water Service Area comes from one groundwater well located nearby. The water is chlorinated and stored in a single reservoir. The water is then filtered through sand and charcoal filters before entering the distribution system. A portable generator is available in the event of a power outage. A map of the Melrose Water Service Area is provided in Appendix A for reference.

**2.1 Groundwater Wells**

One groundwater production well is present at the reservoir site on Melrose Road, west of Coombs, B.C.

Well / Name	Well Depth	Wellhead Protection In Place	Treated/Untreated with Chlorine
#1	26.2 m	Yes	Treated

**2.2 Reservoirs**

One service reservoir (steel structure) is present at 3853 Melrose Road, and has a capacity of 136 m<sup>3</sup> (30,000 imperial gallons).

**2.3 Distribution System**

The water distribution system in Melrose is comprised of 0.3 km of 150mm PVC watermains. There are no fire hydrants located within the system.



**Melrose Pumphouse and Reservoir**

### 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- Iron and Manganese
Monthly	BC Centre for Disease Control	Total coliforms, E.Coli
Annual Source Water Testing (every Fall)	North Island Labs	Complete potability testing of raw well water (including T-Ammonia in 2012)
Annual System Water Testing (every Spring)	North Island Labs	Complete potability testing of distribution system (including T-Ammonia in 2012)

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

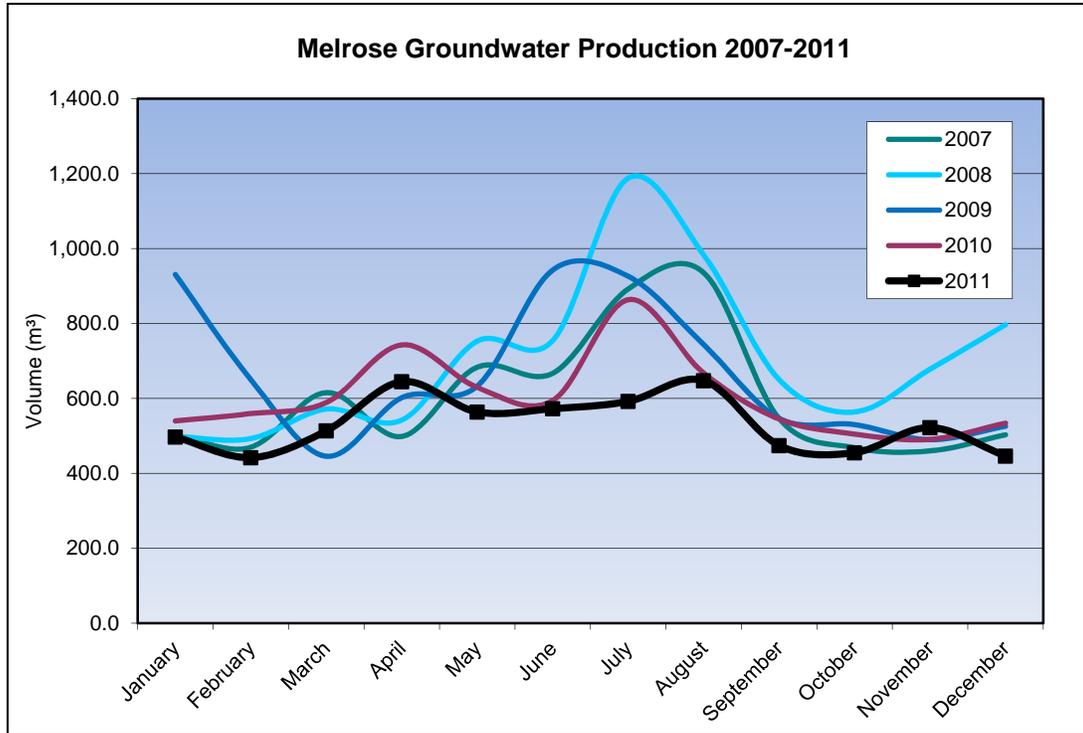
Up-to-date water quality reports and lab data are posted monthly on the RDN website at [www.rdn.bc.ca](http://www.rdn.bc.ca) in the Services section, under “Water & Utility Services” then “WaterSmart Communities”. Tables of water quality testing results for both the source water and distribution system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

### 5. Water Quality Inquiries and Complaints

Very few complaints and inquiries were received from the Melrose water service area, and were typically related to power outages.

## 6. Groundwater Production and Consumption

The monthly groundwater production in the Melrose system for the past 5 years is shown in the chart below. Groundwater production in 2011 was typically lower than previous years.



### Consumption

In the Fall/Winter of 2011, the average usage per home in the Melrose water service area was approximately 0.38 cubic metres per day (83 imperial gallons). In the summer, the average water usage was 0.45 cubic metres per day (99 imperial gallons). Based on these figures, the annual consumption per capita is estimated to be 167 L/day (based on 2.4 people per household). This consumption is 38% less than the RDN system average of 269 L/day/capita in 2011.

## 7. Maintenance Program

Regular maintenance and inspections are completed around the wellhead area 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. There are no fire hydrants on the system.

Twenty-four hour on-call coverage is in place to respond to water system emergencies and alarms.

## 8. Water System Projects

### 8.1 2011 Completed Studies & Projects

- Cleaned the water storage reservoir;
- Enforced the outdoor sprinkling regulations;
- Amalgamated RDN water systems' rates & regulations into one bylaw;
- 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;
- Applied the low-flush toilet incentive;
- Maintained a high level of water quality;
- Maintained excellent customer complaint and service request response times;
- Continued quality control through regular testing and monitoring of our water systems; and,
- Completed additional educational programs.

### 8.2 2012 Proposed Projects & Upgrades

- Complete the Cross-Connection Control Bylaw, and establish a procedure for reviewing commercial and industrial properties for water system risks;
- Replace the activated charcoal media in the filtration system;
- Replace controllers in the pumphouse;
- Update the Standard Operating Procedures; and
- Apply a rainwater harvesting (rain barrel) incentive.

## 9. Emergency Response Plan

The Regional District Emergency Response Plan (ERP) contains procedures and contact information to efficiently respond to water system emergencies such as contamination of water supply, loss of supply, and pump failure. The ERP was reviewed and updated in 2011, 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 cross-connection 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 2012. Additionally, the program in 2012 will include:

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

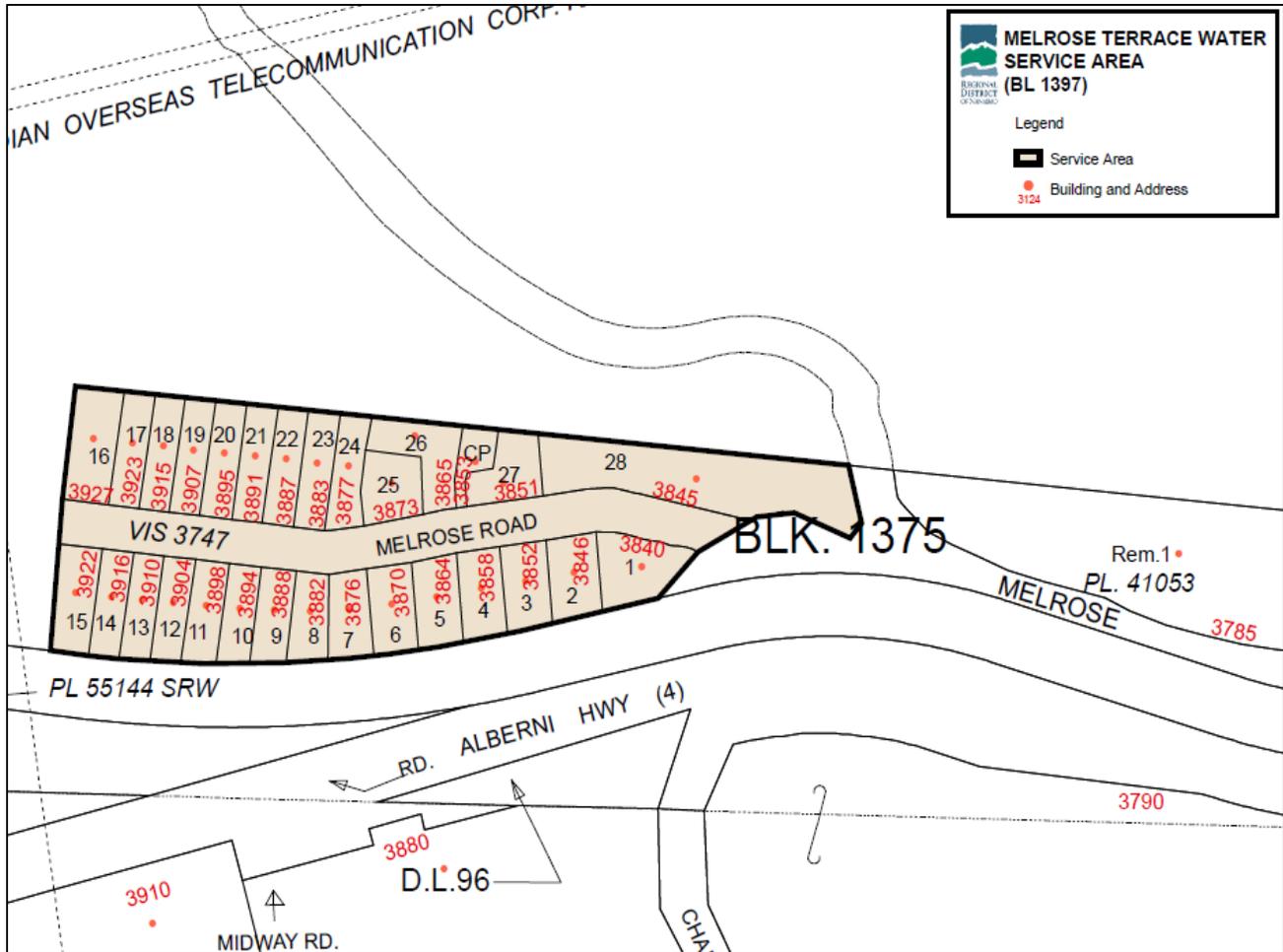
## **11. Closing**

An annual report for the year 2012 will be prepared and submitted to the Vancouver Island Health Authority in the Spring of 2013. Annual reports are also available on our website at [www.rdn.bc.ca](http://www.rdn.bc.ca) in the SERVICES section, under Water & Utility Services then WaterSmart Communities.

**APPENDIX A**

**MAP OF MELROSE  
WATER SERVICE AREA**

MELROSE  
WATER SERVICE AREA



## APPENDIX B

### WATER QUALITY TESTING RESULTS