

REGIONAL DISTRICT OF NANAIMO

Water Service Area Annual Report 2016



Nanoose Bay Peninsula Water Service Area

June 2017

REGIONAL DISTRICT OF NANAIMO

Water & Utility Services Department

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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 2016. This report also includes a summary of inquiries and complaints, completed and proposed maintenance activities, Operator Certification, the Emergency Response Plan, and the Cross Connection Control Program. This report is to be submitted to Island Health by the Spring of 2017.

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 2016, the Nanoose Peninsula Water System was comprised of 2119 residential and 67 commercial water service customers.

The water supply originates from a series of groundwater wells located in the Nanoose Bay Peninsula, 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 drinking water filtration plant is located at 2480 Nanoose Road. This filtration plant has been in operation since November 2011, and its purpose is to filter out iron, manganese, and ammonia from Fairwinds Wells #1, 2, and 3, and West Bay Well #3. A portable back-up generator is available in the event of a power outage. The back-up generator will run the West Bay Well #3 and the West Bay pumphouse controls, but it will not run the filtration plant. In the case of an extended power outage, drinking water will continue to be supplied but it will only be chlorinated, not filtered.

2.1 Groundwater Wells

The water supply originates from 12 groundwater wells located in the area, and is supplemented seasonally (as required) with water from the Englishman River. Nanoose Well #6 hasn't been used since 2010 due to operational challenges with chlorination. Nanoose Well #7 was drilled in 2008, but has not yet been approved for community drinking 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	(Not in use)
Nanoose #7	60.6 m	Yes	(Not in use)
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

Six water storage reservoirs are present in the Nanose Bay Peninsula Water System as follows;

- Madrona (concrete) - 485 m³ (100,000 imperial gallons) capacity
- Eagle Heights (concrete) - 341 m³ (75,000 imperial gallons) capacity
- Dolphin (concrete) - 455 m³ (100,000 imperial gallons) capacity
- Fairwinds Res #1 (concrete) - 701 m³ (154,000 imperial gallons) capacity
- Fairwinds Res #2 (concrete) - 701 m³ (154,000 imperial gallons) capacity
- Arbutus Park (lined concrete, wooden roof) - 568 m³ (125, 000 imp. gallons) capacity

The Beachcomber reservoir was demolished in 2015. The location of a new water storage reservoir is currently being considered.

2.3 Distribution System

The water distribution system in Nanose Bay is summarized in the table below. Fire hydrants (287) 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	9.7 km 2.7 km	12.2% 3.4%
<u>PVC:</u> 150mm or smaller 200mm or larger	23.1 km 33.5 km	29.1% 42.1%
<u>Ductile Iron:</u> 150mm or smaller 200mm or larger	0.2 km 10.3 km	0.2% 13.0%

Note: 'PVC' is poly-vinylchloride (plastic)



**Fairwinds Reservoir
No. 1**

3. Water Sampling and Testing Program

Water sampling and testing is carried out weekly in the distribution system. Notably, the chlorine residual levels are tested weekly to ensure the absence of bacterial regrowth in the watermains. The following table includes a summary of all testing:

Timing	Location	Tests
Weekly	RDN (in-house) Laboratory	Total coliforms, E.Coli, pH, TDS, Temperature, Conductivity, Turbidity, Chlorine residual, Salinity
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)	Maxxam Labs	Complete potability testing of all raw well water, including T-Ammonia
Annual System Water Testing (every Spring)	Maxxam Labs	Complete potability testing of distribution system, including T-Ammonia
Filtration Plant Output Once per month	Maxxam Labs	True colour, Ammonia, Iron, Manganese, and Chloramines

4. Water Quality - Source Water and Distribution System

Up-to-date water quality reports and lab data are posted monthly on the RDN website at www.rdn.bc.ca in the SERVICES section, under “Water 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

The tap water quality has improved with the installation of the Nanoose Bay Peninsula water filtration plant. Filtered groundwater from the Fairwinds and West Bay wells is mixed with treated water from the Englishman River (seasonally, as required) and stored in the same six reservoirs throughout Nanoose Bay.

Several inquiries were received from the Nanoose Bay Peninsula Water Service Area in 2016. Iron and manganese water discolouration was intermittently apparent in the Madrona Drive area. Flushing watermains and water services cleared things up. High water bills were addressed through the RDN’s Leak Policy.

A few inquiries were received about subdividing large lots in Nanoose. No additional water supply was available from RDN water sources to facilitate subdivisions in 2016. However, several property owners purchased water allocations from Maz-Can Investments and were able to proceed with their subdivisions once these private water allocations were secured.

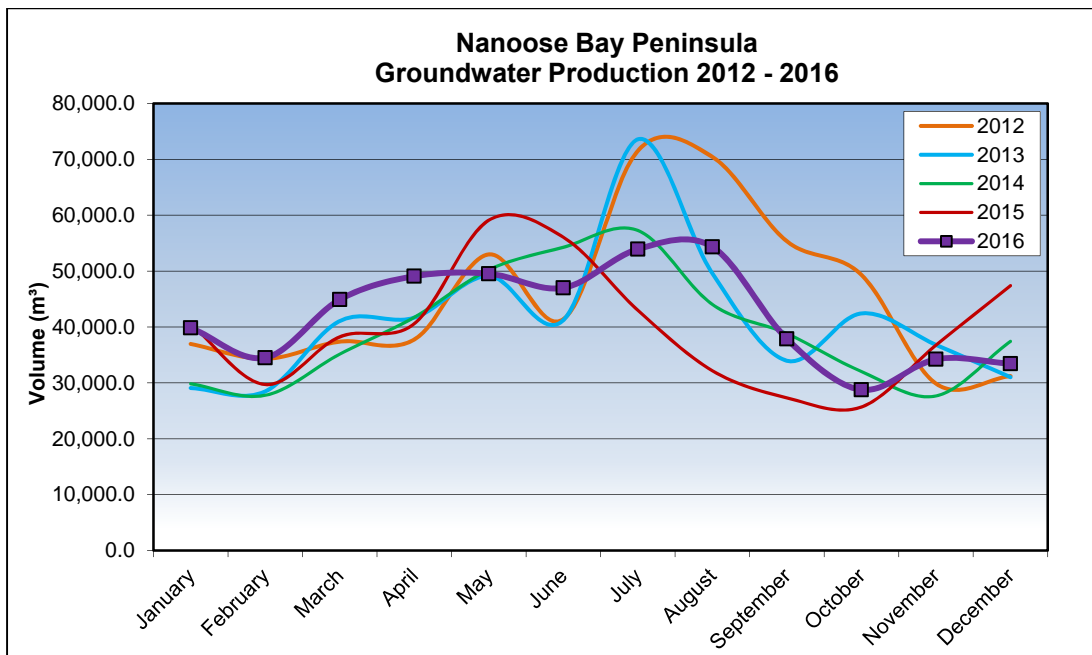
A summary of the water system incidents in 2016 is given in the table below.

Activity in 2016	Date(s)	History/Notes
Boil Water Advisories	None	None
High Turbidity Events	None	None
Equipment Malfunction	Mar, June	PLC, communication fail
Water Main Breaks	None	None
Pump Failures	Jan, Feb, Nov	Temp power outages

6. Groundwater Production and Consumption

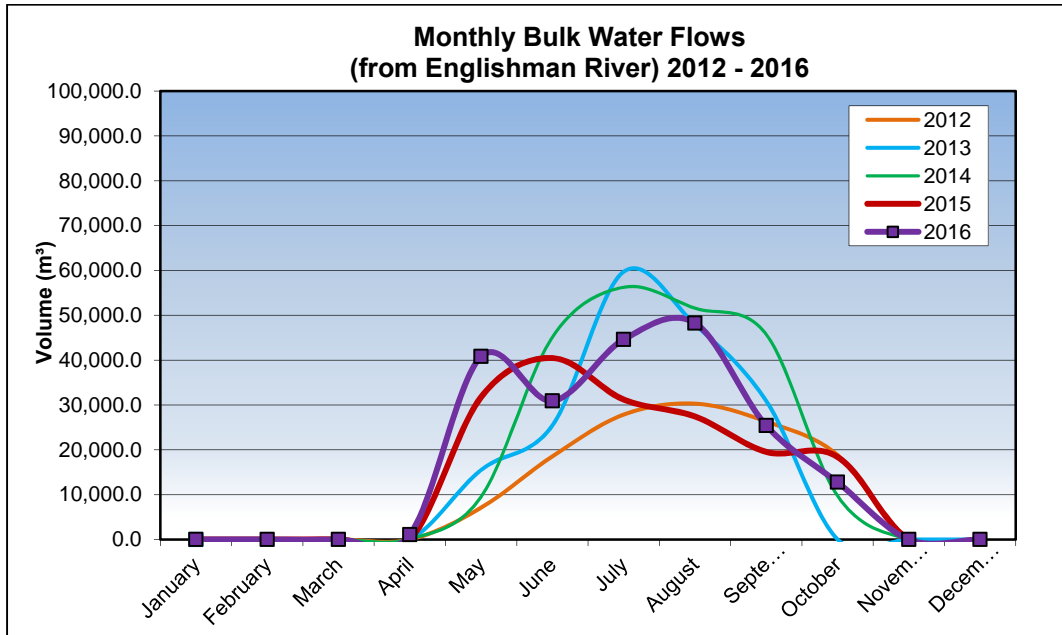
Groundwater Production

The monthly groundwater well production for the past 5 years is shown in the chart below. Groundwater production in 2016 was average in comparison to previous years. The peak usage expected in July-August was curbed, likely due to an effective water conservation campaign.



Surface Water Production

Bulk Water is supplied by the City of Parksville to supplement the RDN’s well water during the high seasonal water use period (May to Sept). The bulk water comes from the Englishman River and is transmitted through the Nanoose Bay Water Service Area via a 16-inch (400mm) water main located along Northwest Bay Road. A comparison of the volume of bulk water supplied to the Nanoose Bay Water Service Area for the past 5 years is shown in the chart below. Bulk Water supply in 2016 appears to be average in comparison to previous years.



Water Consumption

In the Fall/Winter of 2016, water billing records indicate that the average water usage per home in Nanoose Bay was 0.41 cubic metres per day (90 imperial gallons). In the summer, the average water usage was 1.09 cubic metres per day (240 imperial gallons). Based on these figures, the annual consumption per capita is estimated to be 268 L/day (based on 2.4 people/household). This consumption is *1% less* than the RDN system average of 271 L/day/capita in 2016.

7. Maintenance Program

Weekly pump station inspections are carried out to reduce or eliminate the risk of contamination and system failure, and to ensure the consistent application of chlorine for treatment purposes. Watermains are flushed once annually in the Spring. Fire hydrants are serviced once per year (either ‘A-level’ or ‘B-level’ maintenance). Water storage reservoirs are drained and cleaned once every 3-4 years, as required. Twenty-four hour on-call coverage is in place to respond to water system emergencies and alarms.

8. Operator Certification

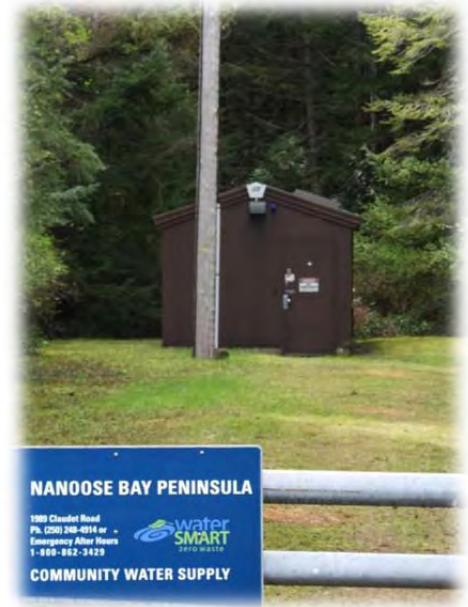
The Regional District Water & Utility Services staff are comprised of one Manager, one Project Engineer, one Engineering Technologist, one Chief Operator, and seven certified Level 2 Water Distribution System Operators. The operators receive ongoing training and certification in:

- ✓ Water Treatment
- ✓ Water Distribution
- ✓ Wastewater Collection
- ✓ Cross Connection Control
- ✓ Asbestos Awareness
- ✓ Chlorine Handling
- ✓ WHMIS (Workplace Hazardous Material Information System)
- ✓ TDG (Transportation of Dangerous Goods)
- ✓ Confined Space Awareness
- ✓ Traffic Control
- ✓ Fall Protection
- ✓ First Aid

9. Water System Projects

9.1 2016 Completed Studies & Projects

- Completed an “Existing Use Groundwater Application” to Ministry of Forests, Lands and Natural Resource Operations (FLNRO);
- Continued the Parker Road well monitoring program;
- Completed the Development Cost Charge (DCC) bylaw;
- Finalized updates to the Capital Charge bylaw;
- Upgraded watermains on Spruce Lane, Hemlock Drive, Florence Drive, Ashcraft Road and part of Balsam Cres;
- Completed annual watermain flushing;
- Authorized water bill rebates under the RDN Leak Policy;
- Updated Standard Operating Procedures;
- Updated the Emergency Response Plan;
- Enforced the outdoor sprinkling regulations;
- Applied a rainwater harvesting incentive (rain barrels);
- Offered free irrigation audits to high water users;
- Carried out a comprehensive water conservation campaign (Team WaterSmart);
- Updated and improved the RDN website at www.rdn.bc.ca;
- Updated the water services asset database to reflect system growth;
- Utilized the Auto E-message service to notify member residents of water service disruptions and upcoming maintenance activities;
- 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.



Nanoose Well #2 and Pumphouse

9.2 2017 Proposed Projects & Upgrades

- Update the Emergency Response Plans for the water system and for the water filtration plant (2 separate documents);
- Complete watermain upgrades on McDivitt Drive, Schirra Drive, Marine Drive, and Anchor Way;
- Complete well rehabilitation of Madrona Well #8;
- Issue RFP for new Craig Bay pump station;
- Finalize the Nanoose Bay Peninsula Water Service Area Capital Charge bylaw;
- Provide status updates to the public on the ERWS (Englishman River Water Service);
- Continue to offer a rainwater harvesting (rain barrel) incentive;
- Continue to offer free irrigation audits to high water users;
- Complete additional educational programs.

10. **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, pump failure, and drought management. The ERP was reviewed and updated in 2016, 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.

A separate Emergency Response Plan has been developed exclusively for the water filtration plant at 2480 Nanoose Road. A copy of this ERP is located at the plant, at each RDN office and on the RDN website.

11. **Cross Connection Control**

In 2012, *Regional District of Nanaimo Water Use Regulation Bylaw No. 1654* was adopted which includes enhanced cross connection control and backflow protection wording. A separate Cross Connection Control bylaw was deemed not to be required. 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. Two RDN Operators achieved their Backflow Assembly Tester re-certification in 2016. The RDN Chief Operator has been designated the Cross Connection Control Manager.

12. Closing

An annual report for the year 2017 will be prepared and submitted to Island Health in the Spring of 2018. Annual reports are also available on our website at www.rdn.bc.ca in the SERVICES section, under “Water Services” then “WaterSmart Communities”.



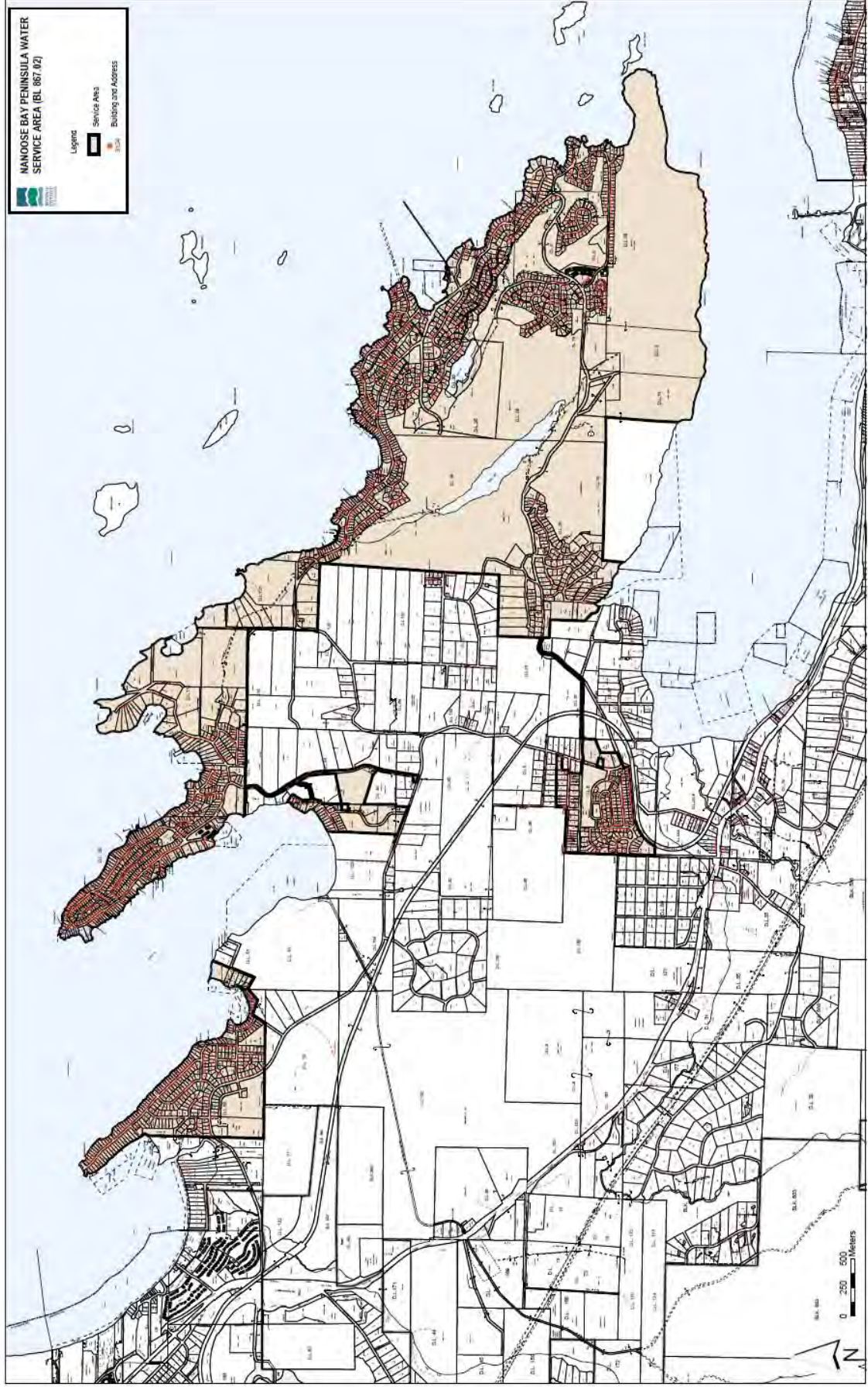
Arrowsmith Dam
April 2014

APPENDIX A

MAP OF NANOOSE BAY PENINSULA

WATER SERVICE AREA

NANOOSE BAY PENINSULA WATER SERVICE AREA



APPENDIX B

WATER QUALITY TESTING RESULTS

NANOOSE BAY PENINSULA WATER SYSTEM



Facility Location:

2330 Garry Oaks Drive
Nanoose Bay

Facility Information:

Facility Type: DWT

Facility Sampling History:

<u>Location</u>	<u>Date</u>	<u>Total Coliform</u>	<u>E. Coli</u>
1565 Stone Lake Drive	13-Dec-2016	L1	L1
1639 Marina Way, Nanoose	13-Dec-2016	L1	L1
2315 Ida Lane, Nanoose Bay	13-Dec-2016	L1	L1
2339 Garry Oak Drive, Nanoose Bay	13-Dec-2016	L1	L1
3465 Cambridge Road, Nanoose Bay	13-Dec-2016	L1	L1
3541 Shelby Lane, Nanoose Bay	13-Dec-2016	L1	L1
1358 Madrona Drive, Nanoose Bay	7-Dec-2016	L1	L1
2329 Chain Way, Nanoose Bay	7-Dec-2016	L1	L1
2359 Higginson Road, Nanoose Bay	7-Dec-2016	L1	L1
3383 Redden Road, Nanoose Bay	7-Dec-2016	L1	L1
3730 Fairwinds Drive, Parkinglot @ Golf Course	7-Dec-2016	L1	L1
Lot 54 Evanshire Crescent, Nanoose Bay	7-Dec-2016	L1	L1
1270 Seadog Road, Nanoose Bay	5-Dec-2016	L1	L1
1566 Arbutus Drive, Nanoose Bay	5-Dec-2016	L1	L1
2454 Armstrong Crescent, Beside (right)	5-Dec-2016	L1	L1
3427 Tye Crescent, Nanoose Bay	5-Dec-2016	L1	L1
3500 Fairwinds Drive, Nanoose Bay	5-Dec-2016	L1	L1
1996 Highland Road, Nanoose Bay	5-Dec-2016	L1	L1
1639 Marina Way, Nanoose	23-Nov-2016	L1	L1
3465 Cambridge Road, Nanoose Bay	23-Nov-2016	L1	L1
1566 Arbutus Drive, Nanoose Bay	16-Nov-2016	L1	L1
2329 Chain Way, Nanoose Bay	15-Nov-2016	L1	L1
3541 Shelby Lane, Nanoose Bay	15-Nov-2016	L1	L1
3730 Fairwinds Drive, Parkinglot @ Golf Course	15-Nov-2016	L1	L1
1565 Stone Lake Drive	9-Nov-2016	L1	L1
2315 Ida Lane, Nanoose Bay	9-Nov-2016	L1	L1
2339 Garry Oak Drive, Nanoose Bay	9-Nov-2016	L1	L1
2359 Higginson Road, Nanoose Bay	9-Nov-2016	L1	L1
3383 Redden Road, Nanoose Bay	9-Nov-2016	L1	L1

Lot 54 Evanshire Crescent, Nanoose Bay	9-Nov-2016	L1	L1
1270 Seadog Road, Nanoose Bay	2-Nov-2016	L1	L1
1358 Madrona Drive, Nanoose Bay	2-Nov-2016	L1	L1
2454 Armstrong Crescent, Beside (right)	2-Nov-2016	L1	L1
3427 Tye Crescent, Nanoose Bay	2-Nov-2016	L1	L1
3500 Fairwinds Drive, Nanoose Bay	2-Nov-2016	L1	L1
1996 Highland Road, Nanoose Bay	2-Nov-2016	L1	L1
1639 Marina Way, Nanoose	25-Oct-2016	L1	L1
3465 Cambridge Road, Nanoose Bay	25-Oct-2016	L1	L1
1565 Stone Lake Drive	19-Oct-2016	L1	L1
2339 Garry Oak Drive, Nanoose Bay	19-Oct-2016	L1	L1
3541 Shelby Lane, Nanoose Bay	19-Oct-2016	L1	L1
3730 Fairwinds Drive, Parkinglot @ Golf Course	19-Oct-2016	L1	L1
1358 Madrona Drive, Nanoose Bay	11-Oct-2016	L1	L1
2359 Higginson Road, Nanoose Bay	11-Oct-2016	L1	L1
2454 Armstrong Crescent, Beside (right)	11-Oct-2016	L1	L1
3383 Redden Road, Nanoose Bay	11-Oct-2016	L1	L1
Lot 54 Evanshire Crescent, Nanoose Bay	11-Oct-2016	L1	L1
1270 Seadog Road, Nanoose Bay	5-Oct-2016	L1	L1
1566 Arbutus Drive, Nanoose Bay	5-Oct-2016	L1	L1
2315 Ida Lane, Nanoose Bay	5-Oct-2016	L1	L1
2329 Chain Way, Nanoose Bay	5-Oct-2016	L1	L1
3427 Tye Crescent, Nanoose Bay	5-Oct-2016	L1	L1
3500 Fairwinds Drive, Nanoose Bay	5-Oct-2016	L1	L1
1996 Highland Road, Nanoose Bay	5-Oct-2016	L1	L1
1639 Marina Way, Nanoose	28-Sep-2016	L1	L1
3465 Cambridge Road, Nanoose Bay	28-Sep-2016	L1	L1
1358 Madrona Drive, Nanoose Bay	21-Sep-2016	L1	L1
3541 Shelby Lane, Nanoose Bay	21-Sep-2016	L1	L1
3730 Fairwinds Drive, Parkinglot @ Golf Course	21-Sep-2016	L1	L1
1566 Arbutus Drive, Nanoose Bay	13-Sep-2016	L1	L1
2315 Ida Lane, Nanoose Bay	13-Sep-2016	L1	L1
2329 Chain Way, Nanoose Bay	13-Sep-2016	L1	L1
2359 Higginson Road, Nanoose Bay	13-Sep-2016	L1	L1
3383 Redden Road, Nanoose Bay	13-Sep-2016	L1	L1
Lot 54 Evanshire Crescent, Nanoose Bay	13-Sep-2016	L1	L1
1270 Seadog Road, Nanoose Bay	7-Sep-2016	L1	L1
1565 Stone Lake Drive	7-Sep-2016	L1	L1
2339 Garry Oak Drive, Nanoose Bay	7-Sep-2016	L1	L1
2454 Armstrong Crescent, Beside (right)	7-Sep-2016	L1	L1

3427 Tye Crescent, Nanoose Bay	7-Sep-2016	L1	L1
3500 Fairwinds Drive, Nanoose Bay	7-Sep-2016	L1	L1
1996 Highland Road, Nanoose Bay	7-Sep-2016	L1	L1
1639 Marina Way, Nanoose	24-Aug-2016	L1	L1
3465 Cambridge Road, Nanoose Bay	24-Aug-2016	L1	L1
1565 Stone Lake Drive	17-Aug-2016	L1	L1
2339 Garry Oak Drive, Nanoose Bay	17-Aug-2016	L1	L1
3541 Shelby Lane, Nanoose Bay	17-Aug-2016	L1	L1
3730 Fairwinds Drive, Parkinglot @ Golf Course	17-Aug-2016	L1	L1
1358 Madrona Drive, Nanoose Bay	10-Aug-2016	L1	L1
2315 Ida Lane, Nanoose Bay	10-Aug-2016	L1	L1
2359 Higginson Road, Nanoose Bay	10-Aug-2016	L1	L1
3383 Redden Road, Nanoose Bay	10-Aug-2016	L1	L1
Lot 54 Evanshire Crescent, Nanoose Bay	10-Aug-2016	L1	L1
1270 Seadog Road, Nanoose Bay	3-Aug-2016	L1	L1
1566 Arbutus Drive, Nanoose Bay	3-Aug-2016	L1	L1
2329 Chain Way, Nanoose Bay	3-Aug-2016	L1	L1
2454 Armstrong Crescent, Beside (right)	3-Aug-2016	L1	L1
3427 Tye Crescent, Nanoose Bay	3-Aug-2016	L1	L1
3500 Fairwinds Drive, Nanoose Bay	3-Aug-2016	L1	L1
1996 Highland Road, Nanoose Bay	3-Aug-2016	L1	L1
1639 Marina Way, Nanoose	27-Jul-2016	L1	L1
3465 Cambridge Road, Nanoose Bay	27-Jul-2016	L1	L1
1358 Madrona Drive, Nanoose Bay	19-Jul-2016	L1	L1
3541 Shelby Lane, Nanoose Bay	19-Jul-2016	L1	L1
3730 Fairwinds Drive, Parkinglot @ Golf Course	19-Jul-2016	L1	L1
1566 Arbutus Drive, Nanoose Bay	13-Jul-2016	L1	L1
2329 Chain Way, Nanoose Bay	13-Jul-2016	L1	L1
2359 Higginson Road, Nanoose Bay	13-Jul-2016	L1	L1
2454 Armstrong Crescent, Beside (right)	13-Jul-2016	L1	L1
3383 Redden Road, Nanoose Bay	13-Jul-2016	L1	L1
Lot 54 Evanshire Crescent, Nanoose Bay	13-Jul-2016	L1	L1
1270 Seadog Road, Nanoose Bay	6-Jul-2016	L1	L1
1565 Stone Lake Drive	6-Jul-2016	L1	L1
2315 Ida Lane, Nanoose Bay	6-Jul-2016	L1	L1
2339 Garry Oak Drive, Nanoose Bay	6-Jul-2016	L1	L1
3427 Tye Crescent, Nanoose Bay	6-Jul-2016	L1	L1
3500 Fairwinds Drive, Nanoose Bay	6-Jul-2016	L1	L1
1996 Highland Road, Nanoose Bay	6-Jul-2016	L1	L1
1639 Marina Way, Nanoose	28-Jun-2016	L1	L1

3465 Cambridge Road, Nanoose Bay	28-Jun-2016	L1	L1
1566 Arbutus Drive, Nanoose Bay	22-Jun-2016	L1	L1
2329 Chain Way, Nanoose Bay	22-Jun-2016	L1	L1
3541 Shelby Lane, Nanoose Bay	22-Jun-2016	L1	L1
3730 Fairwinds Drive, Parkinglot @ Golf Course	22-Jun-2016	L1	L1
1565 Stone Lake Drive	15-Jun-2016	L1	L1
2315 Ida Lane, Nanoose Bay	15-Jun-2016	L1	L1
2339 Garry Oak Drive, Nanoose Bay	15-Jun-2016	L1	L1
2359 Higginson Road, Nanoose Bay	15-Jun-2016	L1	L1
3383 Redden Road, Nanoose Bay	15-Jun-2016	L1	L1
Lot 54 Evanshire Crescent, Nanoose Bay	15-Jun-2016	L1	L1
1270 Seadog Road, Nanoose Bay	8-Jun-2016	L1	L1
1358 Madrona Drive, Nanoose Bay	8-Jun-2016	L1	L1
2454 Armstrong Crescent, Beside (right)	8-Jun-2016	L1	L1
3427 Tye Crescent, Nanoose Bay	8-Jun-2016	L1	L1
3500 Fairwinds Drive, Nanoose Bay	8-Jun-2016	L1	L1
1996 Highland Road, Nanoose Bay	8-Jun-2016	L1	L1
3465 Cambridge Road, Nanoose Bay	30-May-2016	L1	L1
1639 Marina Way, Nanoose	25-May-2016	L1	L1
3465 Cambridge Road, Nanoose Bay	25-May-2016	L1	L1
1358 Madrona Drive, Nanoose Bay	18-May-2016	L1	L1
3427 Tye Crescent, Nanoose Bay	18-May-2016	L1	L1
3541 Shelby Lane, Nanoose Bay	18-May-2016	L1	L1
3730 Fairwinds Drive, Parkinglot @ Golf Course	18-May-2016	L1	L1
1270 Seadog Road, Nanoose Bay	11-May-2016	L1	L1
1566 Arbutus Drive, Nanoose Bay	11-May-2016	L1	L1
2315 Ida Lane, Nanoose Bay	11-May-2016	L1	L1
2329 Chain Way, Nanoose Bay	11-May-2016	L1	L1
3383 Redden Road, Nanoose Bay	11-May-2016	L1	L1
3500 Fairwinds Drive, Nanoose Bay	11-May-2016	L1	L1
1565 Stone Lake Drive	4-May-2016	L1	L1
2339 Garry Oak Drive, Nanoose Bay	4-May-2016	L1	L1
2359 Higginson Road, Nanoose Bay	4-May-2016	L1	L1
2454 Armstrong Crescent, Beside (right)	4-May-2016	L1	L1
Lot 54 Evanshire Crescent, Nanoose Bay	4-May-2016	L1	L1
1996 Highland Road, Nanoose Bay	4-May-2016	L1	L1
1639 Marina Way, Nanoose	26-Apr-2016	L1	L1
3465 Cambridge Road, Nanoose Bay	26-Apr-2016	L1	L1
1566 Arbutus Drive, Nanoose Bay	20-Apr-2016	L1	L1
2329 Chain Way, Nanoose Bay	20-Apr-2016	L1	L1

3541 Shelby Lane, Nanoose Bay	20-Apr-2016	L1	L1
3730 Fairwinds Drive, Parkinglot @ Golf Course	20-Apr-2016	L1	L1
1565 Stone Lake Drive	13-Apr-2016	L1	L1
2339 Garry Oak Drive, Nanoose Bay	13-Apr-2016	L1	L1
2359 Higginson Road, Nanoose Bay	13-Apr-2016	L1	L1
2454 Armstrong Crescent, Beside (right)	13-Apr-2016	L1	L1
3383 Redden Road, Nanoose Bay	13-Apr-2016	L1	L1
Lot 54 Evanshire Crescent, Nanoose Bay	13-Apr-2016	L1	L1
1270 Seadog Road, Nanoose Bay	5-Apr-2016	L1	L1
1358 Madrona Drive, Nanoose Bay	5-Apr-2016	L1	L1
2315 Ida Lane, Nanoose Bay	5-Apr-2016	L1	L1
3427 Tyee Crescent, Nanoose Bay	5-Apr-2016	L1	L1
3500 Fairwinds Drive, Nanoose Bay	5-Apr-2016	L1	L1
1996 Highland Road, Nanoose Bay	5-Apr-2016	L1	L1
1639 Marina Way, Nanoose	23-Mar-2016	L1	L1
3465 Cambridge Road, Nanoose Bay	23-Mar-2016	L1	L1
1358 Madrona Drive, Nanoose Bay	16-Mar-2016	L1	L1
3541 Shelby Lane, Nanoose Bay	16-Mar-2016	L1	L1
3730 Fairwinds Drive, Parkinglot @ Golf Course	16-Mar-2016	L1	L1
1566 Arbutus Drive, Nanoose Bay	9-Mar-2016	L1	L1
2329 Chain Way, Nanoose Bay	9-Mar-2016	L1	L1
2359 Higginson Road, Nanoose Bay	9-Mar-2016	L1	L1
2454 Armstrong Crescent, Beside (right)	9-Mar-2016	L1	L1
3383 Redden Road, Nanoose Bay	9-Mar-2016	L1	L1
Lot 54 Evanshire Crescent, Nanoose Bay	9-Mar-2016	L1	L1
1270 Seadog Road, Nanoose Bay	2-Mar-2016	L1	L1
1565 Stone Lake Drive	2-Mar-2016	L1	L1
2315 Ida Lane, Nanoose Bay	2-Mar-2016	L1	L1
2339 Garry Oak Drive, Nanoose Bay	2-Mar-2016	L1	L1
3427 Tyee Crescent, Nanoose Bay	2-Mar-2016	L1	L1
3500 Fairwinds Drive, Nanoose Bay	2-Mar-2016	L1	L1
1996 Highland Road, Nanoose Bay	2-Mar-2016	L1	L1
1639 Marina Way, Nanoose	24-Feb-2016	L1	L1
3465 Cambridge Road, Nanoose Bay	24-Feb-2016	L1	L1
1566 Arbutus Drive, Nanoose Bay	17-Feb-2016	L1	L1
2329 Chain Way, Nanoose Bay	17-Feb-2016	L1	L1
3541 Shelby Lane, Nanoose Bay	17-Feb-2016	L1	L1
3730 Fairwinds Drive, Parkinglot @ Golf Course	17-Feb-2016	L1	L1
1565 Stone Lake Drive	10-Feb-2016	L1	L1
2315 Ida Lane, Nanoose Bay	10-Feb-2016	L1	L1

2339 Garry Oak Drive, Nanoose Bay	10-Feb-2016	L1	L1
2359 Higginson Road, Nanoose Bay	10-Feb-2016	L1	L1
3383 Redden Road, Nanoose Bay	10-Feb-2016	L1	L1
Lot 54 Evanshire Crescent, Nanoose Bay	10-Feb-2016	L1	L1
1270 Seadog Road, Nanoose Bay	3-Feb-2016	L1	L1
1358 Madrona Drive, Nanoose Bay	3-Feb-2016	L1	L1
2454 Armstrong Crescent, Beside (right)	3-Feb-2016	L1	L1
3427 Tye Crescent, Nanoose Bay	3-Feb-2016	L1	L1
3500 Fairwinds Drive, Nanoose Bay	3-Feb-2016	L1	L1
1996 Highland Road, Nanoose Bay	3-Feb-2016	L1	L1
1639 Marina Way, Nanoose	26-Jan-2016	L1	L1
3465 Cambridge Road, Nanoose Bay	26-Jan-2016	L1	L1
1565 Stone Lake Drive	20-Jan-2016	L1	L1
1961 Harlequin Crescent, Nanoose Bay	20-Jan-2016	L1	L1
2339 Garry Oak Drive, Nanoose Bay	20-Jan-2016	L1	L1
3541 Shelby Lane, Nanoose Bay	20-Jan-2016	L1	L1
3730 Fairwinds Drive, Parkinglot @ Golf Course	20-Jan-2016	L1	L1
1358 Madrona Drive, Nanoose Bay	13-Jan-2016	L1	L1
2359 Higginson Road, Nanoose Bay	13-Jan-2016	L1	L1
2454 Armstrong Crescent, Beside (right)	13-Jan-2016	L1	L1
2940 Fairwinds Drive, Nanoose Bay	13-Jan-2016	L1	L1
3383 Redden Road, Nanoose Bay	13-Jan-2016	L1	L1
Lot 54 Evanshire Crescent, Nanoose Bay	13-Jan-2016	L1	L1
1270 Seadog Road, Nanoose Bay	5-Jan-2016	L1	L1
1566 Arbutus Drive, Nanoose Bay	5-Jan-2016	L1	L1
2315 Ida Lane, Nanoose Bay	5-Jan-2016	L1	L1
2329 Chain Way, Nanoose Bay	5-Jan-2016	L1	L1
3427 Tye Crescent, Nanoose Bay	5-Jan-2016	L1	L1
3500 Fairwinds Drive, Nanoose Bay	5-Jan-2016	L1	L1
1996 Highland Road, Nanoose	5-Jan-2016	L1	L1

Interpreting Sample Reports

In VIHA, the results of drinking water sampling are reported using the following coding system:

- L1 Less than 1 (no detectable bacteria) - Meaning: No bacteria present
- OG Overgrown - Meaning: Too many background bacteria to give an accurate count
- EST Estimated Count
- A Sample not tested; Too long in transit
- C Sample leaked/broken in transit
- D Sample not tested; No collection date given
- T Sample submitted unsatisfactory. Exceeded 30 hours holding time, please resample.
- NS No sample received with requisition

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	Units	CDWG		October 26 2011	October 17 2012	April 23 2014	November 5 2014	October 27 2015	October 26 2016
Miscellaneous Inorganics									
Fluoride	mg/L	1.5	MAC	0.1	0.13	0.1	0.11	0.084	0.088
Alkalinity (total as CaCO ₃)	mg/L			140	140	160	158	143	148
Anions									
Dissolved Sulphate	mg/L	500	AO	9	9.5	17.7	18.6	13.3	14.2
Dissolved Chloride	mg/L	250	AO	6.5	9.6	5	5.4	13	9
Nitrite	mg/L	1	MAC	<0.01	<0.05	<0.05	0.13	<0.0050	<0.0050
Miscellaneous									
Apparent Colour	Colour Unit			<5	13	8	8	10	5
Nutrients									
Total Ammonia	mg/L			0.04	<0.01	0.08	0.07	0.093	0.13
Physical Properties									
Conductivity	µS/cm			308	316	341	335	341	343
pH	pH	6.5:8.5	AO	8.1	8	8.1	8	8.17	8.2
TDS	mg/L	500	AO	210	206	202	236	208	196
Turbidity	NTU			<0.5	0.6	<0.5	<0.5	<0.10	0.11
Microbiological Parameters									
E.coli	MPN/100mL	<1	MAC	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Total Coliforms	MPN/100mL	<1	MAC	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Calculated Parameters									
Total Hardness (CaCO ₃)	mg/L			120	130	160	150	134	142
Nitrate	mg/L	10	MAC	<0.01	<0.05	<0.05	<0.05	<0.020	<0.020
Elements									
Total Mercury	mg/L	0.001	MAC	<0.00001	<0.0001	<0.00001	<0.00001	<0.00001	<0.00001
Total Metals									
Total Aluminum	mg/L	0.1	OG	<0.005	0.005	<0.025	<0.005	<0.003	<0.003
Total Antimony	mg/L	0.006	MAC	<0.0002	<0.0001	<0.0005	<0.0001	<0.0005	<0.0005
Total Arsenic	mg/L	0.01	MAC	0.0032	0.00323	0.0032	0.00297	0.00281	0.003
Total Barium	mg/L	1	MAC	0.014	0.0154	0.0182	0.0172	0.016	0.0158
Total Beryllium	mg/L			<0.00004	<0.00005	<0.00025	<0.00005	<0.0001	<0.0001
Total Bismuth	mg/L			<0.001	<0.0001	<0.0005	<0.0001	<0.001	<0.001
Total Boron	mg/L	5	MAC	0.046	0.051	0.056	0.047	<0.05	<0.050
Total Cadmium	mg/L	0.005	MAC	<0.00001	<0.00001	<0.00005	<0.00001	<0.00001	<0.00001
Total Chromium	mg/L	0.05	MAC	<0.0004	<0.0005	<0.0025	<0.0005	<0.001	<0.001
Total Cobalt	mg/L			0.00004	<0.0001	<0.0005	<0.0001	<0.0005	<0.0005
Total Copper	mg/L	1	AO	0.002	0.006	0.0067	0.0018	0.00247	0.00196
Total Iron	mg/L	0.3	AO	0.017	0.009	0.014	0.016	0.0088	0.011
Total Lead	mg/L	0.01	MAC	0.0004	0.0011	<0.0005	0.0006	<0.0002	<0.0002
Total Manganese	mg/L	0.05	AO	0.093	0.114	0.133	0.129	0.113	0.11
Total Molybdenum	mg/L			0.0011	0.00122	0.00132	0.00109	<0.001	0.0011
Total Nickel	mg/L			<0.001	<0.0002	<0.0010	0.0004	<0.001	<0.001
Total Selenium	mg/L	0.05	MAC	<0.0006	<0.0001	<0.0005	<0.0001	<0.0001	<0.0001
Total Silicon	mg/L			0.05	11.5	11.2	10.6	10.4	10.2
Total Silver	mg/L			<0.00001	<0.00001	<0.00025	<0.00005	<0.00002	<0.00002
Total Strontium	mg/L			0.101	0.109	0.128	0.122	0.114	0.111
Total Thallium	mg/L			<0.00001	<0.00001	<0.00005	<0.00001	<0.00005	<0.00005
Total Tin	mg/L			<0.0001	0.0004	<0.005	<0.0001	<0.005	<0.005
Total Titanium	mg/L			0.006	<0.0005	<0.0025	<0.0005	<0.005	<0.005
Total Uranium	mg/L	0.02	MAC	<0.0004	0.00016	0.00034	0.00026	0.00019	0.00022
Total Vanadium	mg/L			0.0002	0.0002	<0.0005	0.0004	<0.005	<0.005
Total Zinc	mg/L	5	AO	0.006	0.0145	0.0126	0.0079	<0.005	<0.005
Total Zirconium	mg/L							<0.0005	<0.0005
Total Calcium	mg/L			28.4	34.2	39.9	38.3	33.7	36.6
Total Magnesium	mg/L			10.7	11.9	13.7	13	12.1	12.3
Total Potassium	mg/L			0.6	1.4	1.6	1.5	1.35	1.26
Total Sodium	mg/L	200	AO	13.8	21.8	18.8	19.4	17.2	18
Total Sulphur	mg/L							6.1	4.9

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	Units	CDWG		November 14 2011	October 31 2012	October 23 2013	November 5 2014	October 26 2015	October 26 2016
Miscellaneous Inorganics									
Fluoride	mg/L	1.5	MAC	0.18	0.19	0.16	0.11	0.16	0.14
Alkalinity (total as CaCO ₃)	mg/L			140	150	150	144	146	152
Anions									
Dissolved Sulphate	mg/L	500	AO	6.8	7.8	9.1	9.4	9.38	11.8
Dissolved Chloride	mg/L	250	AO	10.9	10.9	10.5	10.7	10	10
Nitrite	mg/L	1	MAC	<0.05	<0.05	<0.05	0.13	<0.0050	<0.0050
Miscellaneous									
Apparent Colour	Colour Unit			22	30	27	27	30	20
Nutrients									
Total Ammonia	mg/L			1.43	1.46	1.24	1.28	1.3	1.4
Physical Properties									
Conductivity	µS/cm			328	330	334	332	331	343
pH	pH	6.5:8.5	AO	7.9	7.8	7.8	8	8.29	8.13
TDS	mg/L	500	AO	174	228	190	208	208	204
Turbidity	NTU			1.4	1.5	1.6	1.4	1	1.04
Microbiological Parameters									
E.coli	MPN/100mL	<1	MAC	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Total Coliforms	MPN/100mL	<1	MAC	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Calculated Parameters									
Total Hardness (CaCO ₃)	mg/L			120	120	130	120	122	120
Nitrate	mg/L	10	MAC	<0.05	<0.05	<0.05	<0.05	<0.020	<0.020
Elements									
Total Mercury	mg/L	0.001	MAC	<0.00001	<0.0001	<0.00001	<0.00001	<0.00001	<0.00001
Total Metals									
Total Aluminum	mg/L	0.1	OG	<0.005	0.07	<0.005	<0.005	<0.003	<0.003
Total Antimony	mg/L	0.006	MAC	<0.0002	<0.0001	<0.0002	<0.0001	<0.0005	<0.0005
Total Arsenic	mg/L	0.01	MAC	0.0019	0.00196	0.0019	0.00167	0.0018	0.00174
Total Barium	mg/L	1	MAC	0.011	0.0105	0.01	0.0106	0.0103	0.0109
Total Beryllium	mg/L			<0.00004	<0.00005	<0.00004	<0.00005	<0.0001	<0.0001
Total Bismuth	mg/L			<0.001	<0.0001	<0.001	<0.0001	<0.001	<0.001
Total Boron	mg/L	5	MAC	0.068	0.068	0.064	0.064	0.061	0.059
Total Cadmium	mg/L	0.005	MAC	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
Total Chromium	mg/L	0.05	MAC	<0.0004	<0.0005	<0.0004	<0.0005	<0.001	<0.001
Total Cobalt	mg/L			0.00002	<0.0001	0.00004	<0.0001	<0.0005	<0.0005
Total Copper	mg/L	1	AO	<0.001	0.0009	<0.001	0.0007	0.00077	0.00022
Total Iron	mg/L	0.3	AO	0.633	0.683	0.688	0.656	0.647	0.632
Total Lead	mg/L	0.01	MAC	<0.0001	0.0003	0.0001	<0.0001	<0.0002	<0.0002
Total Manganese	mg/L	0.05	AO	0.267	0.282	0.3	0.275	0.265	0.275
Total Molybdenum	mg/L			0.0003	0.00041	0.0003	0.00028	<0.001	<0.001
Total Nickel	mg/L			<0.001	<0.0002	<0.001	0.0003	<0.001	<0.001
Total Selenium	mg/L	0.05	MAC	0.0029	<0.0001	<0.0006	<0.0001	<0.0001	<0.0001
Total Silicon	mg/L			14	16.3	15.1	15.3	17	15.5
Total Silver	mg/L			<0.00001	<0.00001	<0.00001	<0.00005	<0.00002	<0.00002
Total Strontium	mg/L			0.094	0.107	0.106	0.105	0.0971	0.108
Total Thallium	mg/L			<0.00001	<0.00001	<0.00001	<0.00001	<0.00005	<0.00005
Total Tin	mg/L			<0.0001	<0.0001	<0.0001	0.0012	<0.005	<0.005
Total Titanium	mg/L			<0.001	<0.0005	<0.0010	0.0006	<0.005	<0.005
Total Uranium	mg/L	0.02	MAC	<0.0004	<0.00001	<0.0004	<0.00001	<0.0001	<0.0001
Total Vanadium	mg/L			0.0006	0.0004	0.0004	0.0005	<0.005	<0.005
Total Zinc	mg/L	5	AO	0.003	0.005	0.016	0.018	<0.005	0.025
Total Zirconium	mg/L							<0.0005	<0.0005
Total Calcium	mg/L			29.7	30.8	30.4	30.8	30.4	29.5
Total Magnesium	mg/L			11.3	11.5	12.3	11.3	11.2	11.3
Total Potassium	mg/L			2.5	2.5	2.65	2.6	2.5	2.44
Total Sodium	mg/L	200	AO	21.5	22.9	24.1	22.9	22.4	20.2
Total Sulphur	mg/L							<3.0	4

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	Units	CDWG		November 14 2011	October 31 2012	October 23 2013	November 5 2014	October 26 2015	October 26 2016
Miscellaneous Inorganics									
Fluoride	mg/L	1.5	MAC	0.19	0.24	0.19	0.14	0.19	0.19
Alkalinity (total as CaCO ₃)	mg/L			140	150	150	146	147	144
Anions									
Dissolved Sulphate	mg/L	500	AO	8.7	8.5	9.3	10	10.4	12.4
Dissolved Chloride	mg/L	250	AO	9.8	14.4	14.7	13.1	14	13
Nitrite	mg/L	1	MAC	<0.05	<0.05	<0.05	0.11	<0.0050	<0.0050
Miscellaneous									
Apparent Colour	Colour Unit			30	28	22	24	20	20
Nutrients									
Total Ammonia	mg/L			2	1.47	1.56	1.53	1.7	1.7
Physical Properties									
Conductivity	µS/cm			324	353	346	341	347	349
pH	pH	6.5:8.5	AO	7.9	7.8	7.9	7.9	8.3	8.09
TDS	mg/L	500	AO	165	228	202	224	214	196
Turbidity	NTU			2	1	0.8	1.1	0.57	0.68
Microbiological Parameters									
E.coli	MPN/100mL	<1	MAC	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Total Coliforms	MPN/100mL	<1	MAC	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Calculated Parameters									
Total Hardness (CaCO ₃)	mg/L			99	110	110	110	105	110
Nitrate	mg/L	10	MAC	<0.05	<0.05	<0.05	<0.05	<0.020	<0.020
Elements									
Total Mercury	mg/L	0.001	MAC	<0.00001	<0.0001	<0.00001	<0.00001	<0.00001	<0.00001
Total Metals									
Total Aluminum	mg/L	0.1	OG	<0.005	0.095	<0.005	<0.005	<0.003	<0.003
Total Antimony	mg/L	0.006	MAC	<0.0002	<0.0001	<0.0002	<0.0001	<0.0005	<0.0005
Total Arsenic	mg/L	0.01	MAC	0.0019	0.00143	0.0012	0.00124	0.00111	0.00121
Total Barium	mg/L	1	MAC	0.01	0.00851	0.008	0.00891	0.0077	0.0077
Total Beryllium	mg/L			<0.00004	<0.00005	<0.00004	<0.00005	<0.0001	<0.0001
Total Bismuth	mg/L			<0.001	0.0001	<0.001	<0.0001	<0.001	<0.001
Total Boron	mg/L	5	MAC	0.084	0.088	0.088	0.085	0.085	0.079
Total Cadmium	mg/L	0.005	MAC	<0.00001	0.00001	<0.00001	<0.00001	<0.00001	<0.00001
Total Chromium	mg/L	0.05	MAC	0.0006	<0.0005	<0.0004	<0.0005	<0.001	<0.001
Total Cobalt	mg/L			0.00002	<0.0001	0.00004	<0.0001	<0.0005	<0.0005
Total Copper	mg/L	1	AO	0.001	0.0013	<0.001	0.0007	0.00036	0.00042
Total Iron	mg/L	0.3	AO	0.96	0.633	0.575	0.581	0.558	0.576
Total Lead	mg/L	0.01	MAC	<0.0001	0.0001	<0.0001	<0.0001	<0.0002	<0.0002
Total Manganese	mg/L	0.05	AO	0.294	0.318	0.326	0.319	0.281	0.282
Total Molybdenum	mg/L			<0.0001	0.00019	0.0001	0.00015	<0.001	<0.001
Total Nickel	mg/L			<0.001	<0.0002	<0.001	0.0002	<0.001	<0.001
Total Selenium	mg/L	0.05	MAC	0.0032	<0.0001	<0.0006	<0.0001	<0.0001	<0.0001
Total Silicon	mg/L			14.8	17.1	16.2	16.4	17.9	15
Total Silver	mg/L			<0.00001	<0.00001	<0.00001	<0.00005	<0.00002	<0.00002
Total Strontium	mg/L			0.1	0.114	0.11	0.111	0.0998	0.104
Total Thallium	mg/L			<0.00001	<0.00001	<0.00001	<0.00001	<0.00005	<0.00005
Total Tin	mg/L			<0.0001	<0.0001	<0.0001	0.0007	<0.005	<0.005
Total Titanium	mg/L			<0.001	<0.0005	<0.0010	0.0006	<0.005	<0.005
Total Uranium	mg/L	0.02	MAC	<0.0004	<0.00001	<0.0004	<0.00001	<0.0001	<0.0001
Total Vanadium	mg/L			0.0008	0.0007	0.0007	0.0008	<0.005	<0.005
Total Zinc	mg/L	5	AO	0.028	0.0031	0.002	0.0064	<0.005	<0.005
Total Zirconium	mg/L							<0.0005	<0.0005
Total Calcium	mg/L			24.5	27.5	26.6	28.1	26.5	27.1
Total Magnesium	mg/L			9.19	10.1	10.8	10.2	9.54	10.3
Total Potassium	mg/L			3.1	3	3.07	3.1	2.86	2.61
Total Sodium	mg/L	200	AO	28.2	31.4	33.2	31.4	30.3	29
Total Sulphur	mg/L							3.6	4.5

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	Units	CDWG		November 14 2011	October 31 2012	October 23 2013	November 5 2014	October 26 2015	October 26 2016
Miscellaneous Inorganics									
Fluoride	mg/L	1.5	MAC	<0.05	0.14	0.12	0.13	0.12	0.12
Alkalinity (total as CaCO ₃)	mg/L			160	160	160	152	147	152
Anions									
Dissolved Sulphate	mg/L	500	AO	1.5	13.1	8.8	11.3	9.08	11
Dissolved Chloride	mg/L	250	AO	4.2	50	67	58	63	61
Nitrite	mg/L	1	MAC	<0.05	<0.05	<0.05	<0.05	<0.0050	<0.0050
Miscellaneous									
Apparent Colour	Colour Unit			26	28	25	27	30	30
Nutrients									
Total Ammonia	mg/L			1.98	1.56	1.75	1.78	1.6	1.9
Physical Properties									
Conductivity	µS/cm			478	511	533	505	525	512
pH	pH	6.5:8.5	AO	7.9	7.8	7.8	7.9	8.28	8.14
TDS	mg/L	500	AO	262	320	292	280	296	284
Turbidity	NTU			2.8	1.3	1.2	1.5	0.93	1.11
Microbiological Parameters									
E.coli	MPN/100mL	<1	MAC	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Total Coliforms	MPN/100mL	<1	MAC	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Calculated Parameters									
Total Hardness (CaCO ₃)	mg/L			140	150	160	150	151	149
Nitrate	mg/L	10	MAC	0.05	<0.05	<0.05	<0.05	<0.020	<0.020
Elements									
Total Mercury	mg/L	0.001	MAC	<0.00001	<0.0001	<0.00001	<0.00001	<0.00001	<0.00001
Total Metals									
Total Aluminum	mg/L	0.1	OG	<0.005	0.099	<0.005	0.005	<0.003	<0.003
Total Antimony	mg/L	0.006	MAC	<0.0002	<0.0001	<0.0002	<0.0001	<0.0005	<0.0005
Total Arsenic	mg/L	0.01	MAC	0.0057	0.00515	0.0043	0.00418	0.00406	0.00395
Total Barium	mg/L	1	MAC	0.009	0.00972	0.01	0.0103	0.0099	0.0095
Total Beryllium	mg/L			<0.00004	<0.00005	<0.00004	<0.00005	<0.0001	<0.0001
Total Bismuth	mg/L			<0.001	<0.0001	<0.001	<0.0001	<0.001	<0.001
Total Boron	mg/L	5	MAC	0.084	0.091	0.086	0.08	0.088	0.077
Total Cadmium	mg/L	0.005	MAC	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
Total Chromium	mg/L	0.05	MAC	0.0007	<0.0005	<0.0004	0.0009	<0.001	<0.001
Total Cobalt	mg/L			0.00005	<0.0001	0.00005	<0.0001	<0.0005	<0.0005
Total Copper	mg/L	1	AO	0.001	0.0012	0.001	0.0015	0.00026	0.00035
Total Iron	mg/L	0.3	AO	0.566	0.516	0.578	0.566	0.572	0.561
Total Lead	mg/L	0.01	MAC	<0.0001	<0.0001	0.0003	<0.0001	<0.0002	<0.0002
Total Manganese	mg/L	0.05	AO	0.21	0.234	0.274	0.253	0.243	0.231
Total Molybdenum	mg/L			0.0001	0.00027	0.0002	0.00027	<0.001	<0.001
Total Nickel	mg/L			<0.001	<0.0002	<0.001	0.0007	<0.001	<0.001
Total Selenium	mg/L	0.05	MAC	0.0034	<0.0001	<0.0006	<0.0001	<0.0001	<0.0001
Total Silicon	mg/L			13.6	15.8	15.3	15.1	17.4	14.5
Total Silver	mg/L			<0.00001	<0.00001	<0.00001	<0.00005	<0.00002	<0.00002
Total Strontium	mg/L			0.218	0.242	0.242	0.237	0.227	0.221
Total Thallium	mg/L			<0.00001	<0.00001	<0.00001	<0.00001	<0.00005	<0.00005
Total Tin	mg/L			<0.0001	<0.0001	<0.0001	<0.0001	<0.005	<0.005
Total Titanium	mg/L			<0.001	<0.0005	<0.0010	0.0006	<0.005	<0.005
Total Uranium	mg/L	0.02	MAC	<0.0004	<0.00001	<0.0004	<0.00001	<0.0001	<0.0001
Total Vanadium	mg/L			0.0013	0.0008	0.0008	0.0009	<0.005	<0.005
Total Zinc	mg/L	5	AO	0.059	0.0217	<0.001	0.0091	<0.005	<0.005
Total Zirconium	mg/L							<0.0005	<0.0005
Total Calcium	mg/L			34.2	37.4	38.8	37.4	37.8	37.1
Total Magnesium	mg/L			12.3	13.3	15.4	13.5	13.8	13.7
Total Potassium	mg/L			3.4	3.6	4.11	3.9	3.79	3.31
Total Sodium	mg/L	200	AO	42.1	47.6	50.2	45.4	45.7	42.2
Total Sulphur	mg/L							4.1	4.1

CDWG=Canadian Drinking Water Guidelines
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	Units	CDWG		November 14 2011	October 31 2012	October 23 2013	November 5 2014	October 26 2015	October 26 2016
Miscellaneous Inorganics									
Fluoride	mg/L	1.5	MAC	<0.05	0.19	0.16	0.25	0.16	0.16
Alkalinity (total as CaCO ₃)	mg/L			140	140	140	140	135	139
Anions									
Dissolved Sulphate	mg/L	500	AO	<0.5	2.3	2.7	3.3	3.67	4.49
Dissolved Chloride	mg/L	250	AO	0.7	7	7.1	7	7.7	7.6
Nitrite	mg/L	1	MAC	<0.05	<0.05	<0.05	<0.05	<0.0050	<0.0050
Miscellaneous									
Apparent Colour	Colour Unit			20	25	21	21	20	20
Nutrients									
Total Ammonia	mg/L			1.23	1	1.1	1.11	1.2	1.2
Physical Properties									
Conductivity	µS/cm			291	299	296	293	296	303
pH	pH	6.5:8.5	AO	8	7.8	7.9	7.9	8.22	8.09
TDS	mg/L	500	AO	163	192	168	240	168	176
Turbidity	NTU			0.8	1.2	0.8	0.9	0.56	1.06
Microbiological Parameters									
E.coli	MPN/100mL	<1	MAC	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Total Coliforms	MPN/100mL	<1	MAC	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Calculated Parameters									
Total Hardness (CaCO ₃)	mg/L			110	110	110	110	105	103
Nitrate	mg/L	10	MAC	<0.05	<0.05	<0.05	<0.05	<0.020	<0.020
Elements									
Total Mercury	mg/L	0.001	MAC	<0.00001	<0.0001	0.00002	<0.00001	<0.00001	<0.00001
Total Metals									
Total Aluminum	mg/L	0.1	OG	<0.005	0.073	<0.005	<0.005	<0.003	0.013
Total Antimony	mg/L	0.006	MAC	<0.0002	<0.0001	<0.0002	<0.0001	<0.0005	<0.0005
Total Arsenic	mg/L	0.01	MAC	0.0004	0.00044	0.0004	0.00043	0.00038	0.00041
Total Barium	mg/L	1	MAC	0.006	0.00588	0.006	0.006	0.0053	0.006
Total Beryllium	mg/L			<0.00004	<0.00005	<0.00004	<0.00005	<0.0001	<0.0001
Total Bismuth	mg/L			<0.001	<0.0001	<0.001	<0.0001	<0.001	<0.001
Total Boron	mg/L	5	MAC	0.07	0.069	0.067	0.066	0.065	0.062
Total Cadmium	mg/L	0.005	MAC	<0.00001	0.00001	<0.00001	<0.00001	<0.00001	<0.00001
Total Chromium	mg/L	0.05	MAC	0.0005	<0.0005	<0.0004	<0.0005	<0.001	<0.001
Total Cobalt	mg/L			0.00003	<0.0001	0.00004	<0.0001	<0.0005	<0.0005
Total Copper	mg/L	1	AO	<0.001	0.0003	0.001	0.0011	0.00051	0.0241
Total Iron	mg/L	0.3	AO	0.528	0.572	0.573	0.533	0.527	0.551
Total Lead	mg/L	0.01	MAC	<0.0001	<0.0001	<0.0001	0.0003	<0.0002	0.00037
Total Manganese	mg/L	0.05	AO	0.205	0.212	0.228	0.209	0.2	0.203
Total Molybdenum	mg/L			0.0002	0.00032	0.0002	0.00022	<0.001	<0.001
Total Nickel	mg/L			<0.001	<0.0002	<0.001	<0.0002	<0.001	<0.001
Total Selenium	mg/L	0.05	MAC	0.004	<0.0001	<0.0006	<0.0001	<0.0001	<0.0001
Total Silicon	mg/L			13.7	15.5	14.6	14.2	16	14.3
Total Silver	mg/L			<0.00001	<0.00001	<0.00001	<0.00005	<0.00002	<0.00002
Total Strontium	mg/L			0.097	0.105	0.101	0.102	0.0929	0.102
Total Thallium	mg/L			<0.00001	<0.00001	<0.00001	<0.00001	<0.00005	<0.00005
Total Tin	mg/L			<0.0001	<0.0001	<0.0001	<0.0001	<0.005	<0.005
Total Titanium	mg/L			<0.001	<0.0005	<0.0010	0.0006	<0.005	<0.005
Total Uranium	mg/L	0.02	MAC	<0.0004	<0.00001	<0.0004	<0.00001	<0.0001	<0.0001
Total Vanadium	mg/L			0.0007	0.0006	0.0006	0.0007	<0.005	<0.005
Total Zinc	mg/L	5	AO	0.004	0.0048	0.002	0.0076	<0.005	0.0134
Total Zirconium	mg/L							<0.0005	<0.0005
Total Calcium	mg/L			27.6	28.2	27.8	27.6	26.9	25.8
Total Magnesium	mg/L			9.83	9.91	10.6	9.53	9.2	9.41
Total Potassium	mg/L			2.5	2.4	2.6	2.4	2.35	2.26
Total Sodium	mg/L	200	AO	20.4	21.3	21.8	20.6	20.5	18.5
Total Sulphur	mg/L							<3.0	<3.0

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	Units	CDWG		October 26 2016				
Miscellaneous Inorganics								
Fluoride	mg/L	1.5	MAC	1.4				
Alkalinity (total as CaCO ₃)	mg/L			143				
Anions								
Dissolved Sulphate	mg/L	500	AO	12.1				
Dissolved Chloride	mg/L	250	AO	5.1				
Nitrite	mg/L	1	MAC	<0.0050				
Miscellaneous								
Apparent Colour	Colour Unit			15				
Nutrients								
Total Ammonia	mg/L			0.31				
Physical Properties								
Conductivity	µS/cm			314				
pH	pH	6.5:8.5	AO	8.24				
TDS	mg/L	500	AO	182				
Turbidity	NTU			9.84				
Microbiological Parameters								
E.coli	MPN/100mL	<1	MAC	<1.0				
Total Coliforms	MPN/100mL	<1	MAC	<1.0				
Calculated Parameters								
Total Hardness (CaCO ₃)	mg/L			82.7				
Nitrate	mg/L	10	MAC	<0.020				
Elements								
Total Mercury	mg/L	0.001	MAC	<0.00001				
Total Metals								
Total Aluminum	mg/L	0.1	OG	0.174				
Total Antimony	mg/L	0.006	MAC	<0.0005				
Total Arsenic	mg/L	0.01	MAC	0.00094				
Total Barium	mg/L	1	MAC	0.139				
Total Beryllium	mg/L			<0.0001				
Total Bismuth	mg/L			<0.001				
Total Boron	mg/L	5	MAC	0.327				
Total Cadmium	mg/L	0.005	MAC	<0.00001				
Total Chromium	mg/L	0.05	MAC	0.0015				
Total Cobalt	mg/L			<0.0005				
Total Copper	mg/L	1	AO	0.00123				
Total Iron	mg/L	0.3	AO	0.346				
Total Lead	mg/L	0.01	MAC	<0.0002				
Total Manganese	mg/L	0.05	AO	0.0173				
Total Molybdenum	mg/L			0.0025				
Total Nickel	mg/L			0.001				
Total Selenium	mg/L	0.05	MAC	<0.0001				
Total Silicon	mg/L			7.75				
Total Silver	mg/L			<0.00002				
Total Strontium	mg/L			0.465				
Total Thallium	mg/L			<0.00005				
Total Tin	mg/L			<0.005				
Total Titanium	mg/L			0.007				
Total Uranium	mg/L	0.02	MAC	<0.0001				
Total Vanadium	mg/L			<0.005				
Total Zinc	mg/L	5	AO	<0.005				
Total Zirconium	mg/L			<0.0005				
Total Calcium	mg/L			23.5				
Total Magnesium	mg/L			5.82				
Total Potassium	mg/L			2.23				
Total Sodium	mg/L	200	AO	33				
Total Sulphur	mg/L			4.1				

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	Units	CDWG		October 26 2011	October 17 2012	October 30 2013	November 5 2014	October 27 2015	October 26 2016
Miscellaneous Inorganics									
Fluoride	mg/L	1.5	MAC	0.1	0.17	0.14	0.19	0.13	0.13
Alkalinity (total as CaCO ₃)	mg/L			130	130	130	126	134	132
Anions									
Dissolved Sulphate	mg/L	500	AO	5.7	6.3	6.2	6.1	6.29	6.38
Dissolved Chloride	mg/L	250	AO	20.2	21.8	20.4	20.9	20	20
Nitrite	mg/L	1	MAC	<0.01	<0.05	<0.05	<0.05	<0.0050	<0.0050
Miscellaneous									
Apparent Colour	Colour Unit			7	8	15	9	10	15
Nutrients									
Total Ammonia	mg/L			0.18	0.19	0.23	0.24	0.26	0.34
Physical Properties									
Conductivity	µS/cm			335	336	333	325	335	334
pH	pH	6.5:8.5	AO	8.6	8.5	8.6	8.4	8.32	8.35
TDS	mg/L	500	AO	224	204	190	196	192	186
Turbidity	NTU			<0.5	<0.5	0.9	<0.5	0.11	5.68
Microbiological Parameters									
E.coli	MPN/100mL	<1	MAC	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Total Coliforms	MPN/100mL	<1	MAC	<1.0	12.4	<1.0	<1.0	<1.0	<1.0
Calculated Parameters									
Total Hardness (CaCO ₃)	mg/L			28	39	41	40	38.5	42.7
Nitrate	mg/L	10	MAC	<0.01	<0.05	<0.05	<0.05	<0.020	<0.020
Elements									
Total Mercury	mg/L	0.001	MAC	<0.00001	<0.0001	<0.00001	<0.00001	<0.00001	<0.00001
Total Metals									
Total Aluminum	mg/L	0.1	OG	<0.005	0.007	0.135	0.006	<0.003	0.203
Total Antimony	mg/L	0.006	MAC	<0.0002	<0.0001	<0.0002	<0.0001	<0.0005	<0.0005
Total Arsenic	mg/L	0.01	MAC	0.0092	0.0101	0.009	0.00963	0.00886	0.00962
Total Barium	mg/L	1	MAC	0.01	0.0119	0.012	0.012	0.0112	0.0135
Total Beryllium	mg/L			<0.00004	<0.00005	<0.00004	<0.00005	<0.0001	<0.0001
Total Bismuth	mg/L			<0.001	<0.0001	<0.0010	<0.0001	<0.001	<0.001
Total Boron	mg/L	5	MAC	0.164	0.167	0.16	0.16	0.16	0.165
Total Cadmium	mg/L	0.005	MAC	<0.00001	<0.00001	0.00001	<0.00001	<0.00001	<0.00001
Total Chromium	mg/L	0.05	MAC	<0.0004	<0.0005	<0.0004	<0.0005	<0.001	<0.001
Total Cobalt	mg/L			0.00002	<0.0001	0.0001	<0.0001	<0.0005	<0.0005
Total Copper	mg/L	1	AO	0.001	0.0005	0.002	0.0004	0.00157	0.00104
Total Iron	mg/L	0.3	AO	0.027	0.009	0.16	0.009	0.0128	0.219
Total Lead	mg/L	0.01	MAC	0.0003	0.0001	0.0002	<0.0001	<0.0002	<0.0002
Total Manganese	mg/L	0.05	AO	0.009	0.0198	0.0215	0.0241	0.0191	0.0257
Total Molybdenum	mg/L			0.0036	0.00402	0.0033	0.00362	0.0031	0.0038
Total Nickel	mg/L			<0.001	<0.0002	<0.001	0.0004	<0.001	<0.001
Total Selenium	mg/L	0.05	MAC	<0.0006	<0.0001	<0.0006	<0.0001	<0.0001	<0.0001
Total Silicon	mg/L			<0.05	7.63	7.23	7.14	7.8	7.12
Total Silver	mg/L			<0.00001	<0.00001	<0.00001	<0.00005	<0.00002	<0.00002
Total Strontium	mg/L			0.068	0.0775	0.079	0.0781	0.0681	0.0751
Total Thallium	mg/L			<0.00001	<0.00001	<0.00001	<0.00001	<0.00005	<0.00005
Total Tin	mg/L			<0.0001	0.0004	0.0001	<0.0001	<0.005	<0.005
Total Titanium	mg/L			0.007	0.0006	0.0105	<0.0005	<0.005	0.0138
Total Uranium	mg/L	0.02	MAC	<0.0004	0.00008	<0.0004	0.00006	<0.0001	<0.0001
Total Vanadium	mg/L			0.0003	0.0003	0.0006	0.0004	<0.005	<0.005
Total Zinc	mg/L	5	AO	0.007	0.004	0.005	0.0076	<0.005	<0.005
Total Zirconium	mg/L							<0.0005	<0.0005
Total Calcium	mg/L			7.26	10.4	10.7	11.1	10.4	11.4
Total Magnesium	mg/L			2.38	3.1	3.34	3.08	3.06	3.46
Total Potassium	mg/L			0.9	1.8	1.89	1.8	1.71	1.57
Total Sodium	mg/L	200	AO	44.1	66.8	67.2	64.2	61.7	59.1
Total Sulphur	mg/L							3.2	<3.0

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	Units	CDWG		October 26 2011	October 17 2012	October 30 2013	November 5 2014	October 27 2015	October 26 2016
Miscellaneous Inorganics									
Fluoride	mg/L	1.5	MAC	<0.1	0.09	0.06	0.09	0.051	0.056
Alkalinity (total as CaCO ₃)	mg/L			170	170	98	194	187	189
Anions									
Dissolved Sulphate	mg/L	500	AO	9.6	10.5	10	11.8	10.8	11.6
Dissolved Chloride	mg/L	250	AO	10.1	9.9	10.1	11	12	13
Nitrite	mg/L	1	MAC	<0.01	<0.05	<0.05	<0.05	<0.0050	<0.0050
Miscellaneous									
Apparent Colour	Colour Unit			<5	<1	<5	<5	5	<5.0
Nutrients									
Total Ammonia	mg/L			<0.01	<0.01	<0.02	<0.02	0.013	0.084
Physical Properties									
Conductivity	µS/cm			371	388	396	422	444	475
pH	pH	6.5:8.5	AO	7.9	7.8	7.7	7.9	8.19	8.16
TDS	mg/L	500	AO	230	226	222	252	246	260
Turbidity	NTU			<0.5	<0.5	<0.5	<0.5	<0.10	0.12
Microbiological Parameters									
E.coli	MPN/100mL	<1	MAC	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Total Coliforms	MPN/100mL	<1	MAC	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Calculated Parameters									
Total Hardness (CaCO ₃)	mg/L			170	200	200	210	217	232
Nitrate	mg/L	10	MAC	1.8	2.19	2.78	3.37	4.56	5.98
Elements									
Total Mercury	mg/L	0.001	MAC	<0.00001	<0.0001	<0.00001	<0.00001	<0.00001	<0.00001
Total Metals									
Total Aluminum	mg/L	0.1	OG	<0.005	0.002	<0.005	<0.005	<0.003	0.003
Total Antimony	mg/L	0.006	MAC	<0.0002	<0.0001	<0.0002	<0.0001	<0.0005	<0.0005
Total Arsenic	mg/L	0.01	MAC	0.0013	0.00144	0.0012	0.00121	0.00122	0.00124
Total Barium	mg/L	1	MAC	0.009	0.0101	0.01	0.0114	0.0109	0.0114
Total Beryllium	mg/L			<0.00004	<0.00005	<0.00004	<0.00005	<0.0001	<0.0001
Total Bismuth	mg/L			<0.001	<0.0001	<0.0010	<0.0001	<0.001	<0.001
Total Boron	mg/L	5	MAC	0.016	0.019	0.019	0.017	<0.05	<0.050
Total Cadmium	mg/L	0.005	MAC	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
Total Chromium	mg/L	0.05	MAC	0.0005	<0.0005	0.0006	0.0007	<0.001	<0.001
Total Cobalt	mg/L			0.00004	<0.0001	0.00005	<0.0001	<0.0005	<0.0005
Total Copper	mg/L	1	AO	0.007	0.0077	0.002	0.0036	0.00464	0.00347
Total Iron	mg/L	0.3	AO	0.013	0.003	<0.010	0.014	0.006	0.006
Total Lead	mg/L	0.01	MAC	0.0006	0.0005	0.0002	0.0003	0.00025	0.00041
Total Manganese	mg/L	0.05	AO	<0.005	0.0016	<0.0050	<0.0010	0.0019	0.0013
Total Molybdenum	mg/L			0.0001	0.00026	0.0002	0.00023	<0.001	<0.001
Total Nickel	mg/L			<0.001	<0.0002	<0.001	<0.0002	<0.001	<0.001
Total Selenium	mg/L	0.05	MAC	<0.0006	0.0002	<0.0006	0.0004	0.00034	0.00043
Total Silicon	mg/L			<0.05	10.6	9.96	9.84	10.6	10.1
Total Silver	mg/L			<0.00001	<0.00001	<0.00001	<0.00005	<0.00002	<0.00002
Total Strontium	mg/L			0.097	0.11	0.114	0.119	0.121	0.12
Total Thallium	mg/L			<0.00001	<0.00001	<0.00001	<0.00001	<0.00005	<0.00005
Total Tin	mg/L			<0.0001	0.0004	0.0001	0.0002	<0.005	<0.005
Total Titanium	mg/L			0.006	<0.0005	<0.0010	<0.0005	<0.005	<0.005
Total Uranium	mg/L	0.02	MAC	<0.0004	0.00013	<0.0004	0.00013	0.00014	0.00015
Total Vanadium	mg/L			0.007	0.0081	0.0071	0.0078	0.0076	0.0069
Total Zinc	mg/L	5	AO	0.006	0.0044	0.005	0.0066	<0.005	<0.005
Total Zirconium	mg/L							<0.0005	<0.0005
Total Calcium	mg/L			46.1	54	53.1	57.4	57.6	63.7
Total Magnesium	mg/L			13.9	14.9	15.4	15.7	17.8	17.6
Total Potassium	mg/L			0.6	0.8	0.79	0.8	0.853	0.768
Total Sodium	mg/L	200	AO	6.7	8.4	11.1	9.1	9.41	9.17
Total Sulphur	mg/L							5.2	3.9

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	Units	CDWG		October 26 2011	October 31 2012	October 30 2013	November 5 2014	October 27 2015	October 26 2016
Miscellaneous Inorganics									
Fluoride	mg/L	1.5	MAC	0.1	0.18	0.14	0.14	0.13	0.14
Alkalinity (total as CaCO ₃)	mg/L			150	150	150	156	138	140
Anions									
Dissolved Sulphate	mg/L	500	AO	23.4	13.2	15.7	0.7	10.8	9.1
Dissolved Chloride	mg/L	250	AO	7.4	9.8	10.7	7.1	10	11
Nitrite	mg/L	1	MAC	<0.01	<0.05	<0.05	<0.05	<0.0050	<0.0050
Miscellaneous									
Apparent Colour	Colour Unit			9	50	16	47	20	15
Nutrients									
Total Ammonia	mg/L			1.17	1.4	0.93	0.88	0.95	1
Physical Properties									
Conductivity	µS/cm			358	347	337	315	322	325
pH	pH	6.5:8.5	AO	8.1	7.8	8.1	7.9	8.18	8.2
TDS	mg/L	500	AO	260	226	192	192	200	176
Turbidity	NTU			0.6	4.4	1.2	3.8	0.35	0.77
Microbiological Parameters									
E.coli	MPN/100mL	<1	MAC	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Total Coliforms	MPN/100mL	<1	MAC	<1.0	<1.0	<1.0	32.4	<1.0	<1.0
Calculated Parameters									
Total Hardness (CaCO ₃)	mg/L			130	140	140	140	128	133
Nitrate	mg/L	10	MAC	<0.01	<0.05	<0.05	<0.05	<0.020	<0.020
Elements									
Total Mercury	mg/L	0.001	MAC	<0.00001	<0.0001	<0.00001	<0.00001	<0.00001	<0.00001
Total Metals									
Total Aluminum	mg/L	0.1	OG	<0.005	0.007	<0.005	0.006	0.0034	<0.003
Total Antimony	mg/L	0.006	MAC	<0.0002	<0.0001	<0.0002	<0.0001	<0.0005	<0.0005
Total Arsenic	mg/L	0.01	MAC	0.0005	0.00155	0.0005	0.00097	0.00049	0.00043
Total Barium	mg/L	1	MAC	0.019	0.0183	0.019	0.0163	0.0197	0.0177
Total Beryllium	mg/L			<0.00004	<0.00005	<0.00004	<0.00005	<0.0001	<0.0001
Total Bismuth	mg/L			<0.001	<0.0001	<0.0010	<0.0001	<0.001	<0.001
Total Boron	mg/L	5	MAC	0.056	0.06	0.057	0.051	0.056	0.058
Total Cadmium	mg/L	0.005	MAC	<0.00001	0.00001	<0.00001	<0.00001	<0.00001	<0.00001
Total Chromium	mg/L	0.05	MAC	<0.0004	<0.0005	<0.0004	<0.0005	<0.001	<0.001
Total Cobalt	mg/L			0.00003	<0.0001	0.00004	<0.0001	<0.0005	<0.0005
Total Copper	mg/L	1	AO	<0.001	0.0002	0.002	0.0015	0.0003	0.00028
Total Iron	mg/L	0.3	AO	0.238	1.22	0.24	1.12	0.185	0.198
Total Lead	mg/L	0.01	MAC	<0.0001	<0.0001	0.0016	<0.0001	<0.0002	<0.0002
Total Manganese	mg/L	0.05	AO	0.132	0.294	0.13	0.275	0.145	0.109
Total Molybdenum	mg/L			0.0004	0.00029	0.0004	0.00023	<0.001	<0.001
Total Nickel	mg/L			<0.001	<0.0002	<0.001	0.0019	<0.001	<0.001
Total Selenium	mg/L	0.05	MAC	<0.0006	<0.0001	<0.0006	<0.0001	<0.0001	<0.0001
Total Silicon	mg/L			9.78	13.4	10.3	13.1	11.4	10.3
Total Silver	mg/L			<0.00001	<0.00001	<0.00001	<0.00005	<0.00002	<0.00002
Total Strontium	mg/L			0.155	0.122	0.158	0.116	0.142	0.137
Total Thallium	mg/L			<0.00001	<0.00001	<0.00001	<0.00001	<0.00005	<0.00005
Total Tin	mg/L			<0.0001	<0.0001	0.0004	<0.0001	<0.005	<0.005
Total Titanium	mg/L			<0.001	<0.0005	<0.0010	<0.0005	<0.005	<0.005
Total Uranium	mg/L	0.02	MAC	<0.0004	<0.00001	<0.0004	<0.00001	0.00015	<0.0001
Total Vanadium	mg/L			0.0003	0.0004	0.0003	0.0006	<0.005	<0.005
Total Zinc	mg/L	5	AO	0.006	0.0008	0.107	0.0086	<0.005	<0.005
Total Zirconium	mg/L							<0.0005	<0.0005
Total Calcium	mg/L			41.8	35.2	39.1	34.6	37.2	37.7
Total Magnesium	mg/L			11	12.3	10.5	12.1	9.42	9.45
Total Potassium	mg/L			2.6	2.3	2.74	2.3	2.47	2.32
Total Sodium	mg/L	200	AO	16	18.5	17.2	19.7	13.7	14.5
Total Sulphur	mg/L							5.5	3.5

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	Units	CDWG		October 26 2011	October 31 2012	October 30 2013	November 5 2014	October 27 2015	October 26 2016
Miscellaneous Inorganics									
Fluoride	mg/L	1.5	MAC	0.1	0.17	0.13	0.19	0.12	0.13
Alkalinity (total as CaCO ₃)	mg/L			150	150	150	140	162	160
Anions									
Dissolved Sulphate	mg/L	500	AO	19.4	21.7	2.3	14	<0.50	<0.50
Dissolved Chloride	mg/L	250	AO	11.1	6.9	7.5	10.4	7.2	7.7
Nitrite	mg/L	1	MAC	<0.01	<0.05	<0.05	<0.05	<0.0050	<0.0050
Miscellaneous									
Apparent Colour	Colour Unit			46	13	51	9	20	30
Nutrients									
Total Ammonia	mg/L			1.56	1.17	0.92	0.94	1	1.1
Physical Properties									
Conductivity	µS/cm			357	357	318	322	325	330
pH	pH	6.5:8.5	AO	7.8	8	7.8	8.1	8.16	8.14
TDS	mg/L	500	AO	226	214	178	188	196	188
Turbidity	NTU			4.7	0.8	1	0.6	2.8	3.75
Microbiological Parameters									
E.coli	MPN/100mL	<1	MAC	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Total Coliforms	MPN/100mL	<1	MAC	<1.0	<1.0	<1.0	<1.0	12.4	4.2
Calculated Parameters									
Total Hardness (CaCO ₃)	mg/L			84	150	130	140	128	133
Nitrate	mg/L	10	MAC	<0.01	<0.05	<0.05	<0.05	<0.020	<0.020
Elements									
Total Mercury	mg/L	0.001	MAC	<0.00001	<0.0001	<0.00001	<0.00001	<0.00001	<0.00001
Total Metals									
Total Aluminum	mg/L	0.1	OG	<0.005	0.006	0.005	<0.005	<0.003	<0.003
Total Antimony	mg/L	0.006	MAC	<0.0002	<0.0001	<0.0002	<0.0001	<0.0005	<0.0005
Total Arsenic	mg/L	0.01	MAC	0.0014	0.00059	0.0012	0.0005	0.00122	0.00113
Total Barium	mg/L	1	MAC	0.019	0.0206	0.016	0.0191	0.0151	0.0149
Total Beryllium	mg/L			<0.00004	<0.00005	<0.00004	<0.00005	<0.0001	<0.0001
Total Bismuth	mg/L			<0.001	0.0002	<0.0010	<0.0001	<0.001	<0.001
Total Boron	mg/L	5	MAC	0.057	0.066	0.048	0.057	0.052	0.05
Total Cadmium	mg/L	0.005	MAC	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
Total Chromium	mg/L	0.05	MAC	<0.0004	<0.0005	<0.0004	<0.0005	<0.001	<0.001
Total Cobalt	mg/L			0.00002	<0.0001	0.00003	<0.0001	<0.0005	<0.0005
Total Copper	mg/L	1	AO	<0.001	0.0008	0.014	0.0004	0.00202	0.00115
Total Iron	mg/L	0.3	AO	0.659	0.26	1.13	0.198	1.07	1.13
Total Lead	mg/L	0.01	MAC	0.0002	<0.0001	0.0007	<0.0001	<0.0002	0.00035
Total Manganese	mg/L	0.05	AO	0.18	0.144	0.269	0.125	0.263	0.249
Total Molybdenum	mg/L			0.0002	0.00044	0.0002	0.00053	<0.001	<0.001
Total Nickel	mg/L			<0.001	<0.0002	<0.001	0.0006	<0.001	<0.001
Total Selenium	mg/L	0.05	MAC	<0.0006	<0.0001	<0.0006	<0.0001	<0.0001	<0.0001
Total Silicon	mg/L			<0.05	11.4	12.2	10.6	13	12.6
Total Silver	mg/L			<0.00001	<0.00001	<0.00001	<0.00005	<0.00002	<0.00002
Total Strontium	mg/L			0.114	0.165	0.111	0.147	0.106	0.107
Total Thallium	mg/L			<0.00001	<0.00001	<0.00001	<0.00001	<0.00005	<0.00005
Total Tin	mg/L			<0.0001	<0.0001	0.0003	<0.0001	<0.005	<0.005
Total Titanium	mg/L			0.008	<0.0005	<0.0010	<0.0005	<0.005	<0.005
Total Uranium	mg/L	0.02	MAC	<0.0004	<0.00001	<0.0004	0.00001	<0.0001	<0.0001
Total Vanadium	mg/L			0.0004	0.0004	0.0005	0.0004	<0.005	<0.005
Total Zinc	mg/L	5	AO	0.004	0.0099	0.007	0.009	0.0445	0.0182
Total Zirconium	mg/L							<0.0005	<0.0005
Total Calcium	mg/L			20.6	42.1	32	39.1	31.7	33.2
Total Magnesium	mg/L			11	12.3	10.5	12.1	11.7	12.1
Total Potassium	mg/L			0.4	2.6	2.22	2.7	2.12	1.96
Total Sodium	mg/L	200	AO	8.42	16.4	20.8	14.9	18.6	18.6
Total Sulphur	mg/L							<3.0	<3.0

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	Units	CDWG		October 26 2011	October 31 2012	October 30 2013	November 5 2014	October 27 2015	October 26 2016
Miscellaneous Inorganics									
Fluoride	mg/L	1.5	MAC	0.2	0.21	0.19	0.22	0.17	0.18
Alkalinity (total as CaCO ₃)	mg/L			160	170	150	158	161	158
Anions									
Dissolved Sulphate	mg/L	500	AO	<0.2	<0.5	1.1	<0.5	<0.50	<0.50
Dissolved Chloride	mg/L	250	AO	3.8	3.5	3.2	3.2	3.5	3.7
Nitrite	mg/L	1	MAC	<0.01	<0.05	<0.05	<0.05	<0.0050	<0.0050
Miscellaneous									
Apparent Colour	Colour Unit			20	26	24	28	15	15
Nutrients									
Total Ammonia	mg/L			1.22	1.2	1.03	1.05	1.2	1.2
Physical Properties									
Conductivity	µS/cm			321	322	317	310	311	313
pH	pH	6.5:8.5	AO	7.9	7.8	7.8	7.9	8.2	8.1
TDS	mg/L	500	AO	214	196	184	196	188	190
Turbidity	NTU			1.3	1.5	1.1	1.9	1.3	1.68
Microbiological Parameters									
E.coli	MPN/100mL	<1	MAC	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Total Coliforms	MPN/100mL	<1	MAC	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Calculated Parameters									
Total Hardness (CaCO ₃)	mg/L			110	120	120	120	116	117
Nitrate	mg/L	10	MAC	<0.01	<0.05	<0.05	<0.05	<0.020	<0.020
Elements									
Total Mercury	mg/L	0.001	MAC	<0.00001	<0.0001	<0.00001	<0.00001	<0.00001	<0.00001
Total Metals									
Total Aluminum	mg/L	0.1	OG	<0.005	0.004	0.005	<0.005	<0.003	<0.003
Total Antimony	mg/L	0.006	MAC	<0.0002	<0.0001	<0.0002	<0.0001	<0.0005	<0.0005
Total Arsenic	mg/L	0.01	MAC	0.0021	0.00208	0.0021	0.00206	0.00216	0.00233
Total Barium	mg/L	1	MAC	0.008	0.00847	0.008	0.00847	0.0082	0.0082
Total Beryllium	mg/L			<0.00004	<0.00005	<0.00004	<0.00005	<0.0001	<0.0001
Total Bismuth	mg/L			<0.001	<0.0001	<0.0010	<0.0001	<0.001	<0.001
Total Boron	mg/L	5	MAC	0.068	0.079	0.066	0.062	0.066	0.062
Total Cadmium	mg/L	0.005	MAC	<0.00001	0.00001	<0.00001	<0.00001	<0.00001	<0.00001
Total Chromium	mg/L	0.05	MAC	<0.0004	<0.0005	<0.0004	<0.0005	<0.001	<0.001
Total Cobalt	mg/L			0.00022	<0.0001	0.00004	<0.0001	<0.0005	<0.0005
Total Copper	mg/L	1	AO	<0.001	0.0008	0.001	0.0029	<0.0002	0.00175
Total Iron	mg/L	0.3	AO	0.473	0.569	0.591	0.567	0.601	0.599
Total Lead	mg/L	0.01	MAC	<0.0001	<0.0001	0.0004	0.0003	<0.0002	0.00022
Total Manganese	mg/L	0.05	AO	0.22	0.252	0.26	0.235	0.243	0.231
Total Molybdenum	mg/L			0.0006	0.0007	0.0006	0.00062	<0.001	<0.001
Total Nickel	mg/L			<0.001	<0.0002	<0.001	0.0003	<0.001	<0.001
Total Selenium	mg/L	0.05	MAC	<0.0006	<0.0001	<0.0006	<0.0001	<0.0001	<0.0001
Total Silicon	mg/L			<0.05	16.6	15.4	15.3	16.5	15.2
Total Silver	mg/L			<0.00001	<0.00001	<0.00001	<0.00005	<0.00002	<0.00002
Total Strontium	mg/L			0.106	0.108	0.113	0.0991	0.0995	0.1
Total Thallium	mg/L			<0.00001	<0.00001	<0.00001	<0.00001	<0.00005	<0.00005
Total Tin	mg/L			<0.0001	<0.0001	<0.0001	0.0005	<0.005	<0.005
Total Titanium	mg/L			0.008	<0.0005	<0.0010	<0.0005	<0.005	<0.005
Total Uranium	mg/L	0.02	MAC	<0.0004	<0.00001	<0.0004	<0.00001	<0.0001	<0.0001
Total Vanadium	mg/L			0.0005	0.0005	0.0005	0.0006	<0.005	<0.005
Total Zinc	mg/L	5	AO	0.005	0.0049	0.009	0.0083	<0.005	0.0084
Total Zirconium	mg/L							<0.0005	<0.0005
Total Calcium	mg/L			24.8	29.8	29.3	29.2	28.2	28.5
Total Magnesium	mg/L			10.5	11.4	11.8	10.9	11	11.1
Total Potassium	mg/L			1.2	2.3	2.34	2.4	2.24	2.05
Total Sodium	mg/L	200	AO	15.8	23.5	24.3	22	21	20.6
Total Sulphur	mg/L							<3.0	<3.0

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	Units	CDWG		October 26 2011	October 31 2012	October 30 2013	November 5 2014	October 27 2015	October 27 2016
Miscellaneous Inorganics									
Fluoride	mg/L	1.5	MAC	0.2	0.22	0.12	0.1	0.1	0.063
Alkalinity (total as CaCO ₃)	mg/L			180	180	190	168	185	172
Anions									
Dissolved Sulphate	mg/L	500	AO	33.5	33	42.5	52.8	35.2	45.5
Dissolved Chloride	mg/L	250	AO	8.9	8.8	8.7	9.5	9.2	8.5
Nitrite	mg/L	1	MAC	<0.01	<0.05	<0.05	<0.05	<0.0050	<0.0050
Miscellaneous									
Apparent Colour	Colour Unit			23	43	30	17	15	10
Nutrients									
Total Ammonia	mg/L			0.05	<0.01	0.02	0.02	0.04	0.069
Physical Properties									
Conductivity	µS/cm			445	441	466	456	453	445
pH	pH	6.5:8.5	AO	7.6	7.6	7.6	7.9	8.1	8.21
TDS	mg/L	500	AO	272	272	280	280	278	258
Turbidity	NTU			4.3	4.2	0.5	2.1	2.39	2.54
Microbiological Parameters									
E.coli	MPN/100mL	<1	MAC	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Total Coliforms	MPN/100mL	<1	MAC	3.1	1	<1.0	27.1	<1.0	<1.0
Calculated Parameters									
Total Hardness (CaCO ₃)	mg/L			180	210	230	230	215	197
Nitrate	mg/L	10	MAC	<0.01	<0.05	<0.05	0.1	<0.020	<0.020
Elements									
Total Mercury	mg/L	0.001	MAC	<0.00001	<0.0001	<0.00001	<0.00001	<0.00001	<0.00001
Total Metals									
Total Aluminum	mg/L	0.1	OG	<0.005	0.009	0.01	0.03	0.0034	0.0429
Total Antimony	mg/L	0.006	MAC	<0.0002	<0.0001	<0.0002	0.0003	<0.0005	<0.0005
Total Arsenic	mg/L	0.01	MAC	0.0006	0.0006	0.0006	0.0019	0.00124	0.00079
Total Barium	mg/L	1	MAC	0.073	0.0827	0.074	0.0664	0.0722	0.0613
Total Beryllium	mg/L			<0.00004	<0.00005	<0.00004	<0.00005	<0.0001	<0.0001
Total Bismuth	mg/L			<0.001	0.0001	<0.0010	<0.0001	<0.001	<0.001
Total Boron	mg/L	5	MAC	0.082	0.112	0.058	0.031	0.06	<0.050
Total Cadmium	mg/L	0.005	MAC	0.00004	0.00002	0.00002	0.00001	0.000019	<0.00001
Total Chromium	mg/L	0.05	MAC	<0.0004	<0.0005	<0.0004	<0.0005	<0.001	<0.001
Total Cobalt	mg/L			0.00026	0.0002	0.00041	0.0004	<0.0005	<0.0005
Total Copper	mg/L	1	AO	0.002	0.0008	0.002	0.0037	0.00852	0.00237
Total Iron	mg/L	0.3	AO	0.354	0.476	0.327	0.348	0.413	0.284
Total Lead	mg/L	0.01	MAC	0.0031	0.0003	0.0004	0.0007	0.00128	0.00049
Total Manganese	mg/L	0.05	AO	0.077	0.0828	0.106	0.116	0.0931	0.094
Total Molybdenum	mg/L			0.0006	0.00061	0.0007	0.00109	<0.001	<0.001
Total Nickel	mg/L			0.001	0.0003	0.002	0.0009	0.0012	<0.001
Total Selenium	mg/L	0.05	MAC	<0.0006	0.0001	<0.0006	<0.0001	<0.0001	<0.0001
Total Silicon	mg/L			5.06	5.95	5.27	5.3	5.62	5.3
Total Silver	mg/L			<0.00001	<0.00001	<0.00001	<0.00005	<0.00002	<0.00002
Total Strontium	mg/L			0.202	0.217	0.226	0.203	0.206	0.195
Total Thallium	mg/L			<0.00001	<0.00001	<0.00001	<0.00001	<0.00005	<0.00005
Total Tin	mg/L			<0.0001	<0.0001	0.0001	<0.0001	<0.005	<0.005
Total Titanium	mg/L			<0.001	<0.0005	0.0015	0.0015	<0.005	<0.005
Total Uranium	mg/L	0.02	MAC	<0.0004	0.00008	<0.0004	0.00012	0.00015	0.00011
Total Vanadium	mg/L			<0.0001	<0.0001	0.0001	0.0002	<0.005	<0.005
Total Zinc	mg/L	5	AO	0.118	0.081	0.054	0.0625	0.121	0.037
Total Zirconium	mg/L							<0.0005	<0.0005
Total Calcium	mg/L			79.4	79.3	84.3	87	80.1	72.9
Total Magnesium	mg/L			3.72	3.6	4.2	3.88	3.75	3.67
Total Potassium	mg/L			0.8	0.9	0.92	0.9	0.859	0.791
Total Sodium	mg/L	200	AO	12.6	14.5	14	9.1	10.9	7.73
Total Sulphur	mg/L							12.1	15.2

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	Units	CDWG		October 31 2012	November 5 2014	October 26 2015	October 26 2016		
Miscellaneous Inorganics									
Fluoride	mg/L	1.5	MAC	0.21	0.18	0.16	0.16		
Alkalinity (total as CaCO ₃)	mg/L			150	140	142	142		
Anions									
Dissolved Sulphate	mg/L	500	AO	5.7	7.3	6.39	8.13		
Dissolved Chloride	mg/L	250	AO	12.3	17.5	15	15		
Nitrite	mg/L	1	MAC	<0.05	<0.05	<0.0050	<0.0050		
Miscellaneous									
Apparent Colour	Colour Unit			23	23	20	20		
Nutrients									
Total Ammonia	mg/L			1.18	1.32	1.4	1.5		
Physical Properties									
Conductivity	µS/cm			339	343	336	344		
pH	pH	6.5:8.5	AO	7.8	8	8.28	8.14		
TDS	mg/L	500	AO	216	206	194	192		
Turbidity	NTU			0.8	1.1	0.65	0.96		
Microbiological Parameters									
E.coli	MPN/100mL	<1	MAC	<1.0	<1.0	<1.0	<1.0		
Total Coliforms	MPN/100mL	<1	MAC	<1.0	<1.0	<1.0	<1.0		
Calculated Parameters									
Total Hardness (CaCO ₃)	mg/L			120	120	114	118		
Nitrate	mg/L	10	MAC	<0.05	<0.05	<0.020	<0.020		
Elements									
Total Mercury	mg/L	0.001	MAC	<0.0001	<0.00001	<0.00001	<0.00001		
Total Metals									
Total Aluminum	mg/L	0.1	OG	0.078	<0.005	<0.003	<0.003		
Total Antimony	mg/L	0.006	MAC	<0.0001	<0.0001	<0.0005	<0.0005		
Total Arsenic	mg/L	0.01	MAC	0.00133	0.00144	0.00134	0.00129		
Total Barium	mg/L	1	MAC	0.00773	0.00765	0.0076	0.0076		
Total Beryllium	mg/L			<0.00005	<0.00005	<0.0001	<0.0001		
Total Bismuth	mg/L			0.0001	<0.0001	<0.001	<0.001		
Total Boron	mg/L	5	MAC	0.078	0.071	0.072	0.065		
Total Cadmium	mg/L	0.005	MAC	0.00001	<0.00001	<0.00001	<0.00001		
Total Chromium	mg/L	0.05	MAC	<0.0005	<0.0005	<0.001	<0.001		
Total Cobalt	mg/L			<0.0001	<0.0001	<0.0005	<0.0005		
Total Copper	mg/L	1	AO	0.0003	0.0008	0.00041	0.00029		
Total Iron	mg/L	0.3	AO	0.529	0.561	0.555	0.588		
Total Lead	mg/L	0.01	MAC	<0.0001	<0.0001	<0.0002	<0.0002		
Total Manganese	mg/L	0.05	AO	0.294	0.247	0.232	0.23		
Total Molybdenum	mg/L			0.0003	0.00023	<0.001	<0.001		
Total Nickel	mg/L			<0.0002	0.0027	<0.001	<0.001		
Total Selenium	mg/L	0.05	MAC	<0.0001	<0.0001	<0.0001	<0.0001		
Total Silicon	mg/L			16.1	14.9	17.1	13.7		
Total Silver	mg/L			<0.00001	<0.00005	<0.00002	<0.00002		
Total Strontium	mg/L			0.12	0.123	0.112	0.113		
Total Thallium	mg/L			<0.00001	<0.00001	<0.00005	<0.00005		
Total Tin	mg/L			<0.0001	0.0015	<0.005	<0.005		
Total Titanium	mg/L			<0.0005	0.0005	<0.005	<0.005		
Total Uranium	mg/L	0.02	MAC	<0.00001	<0.00001	<0.0001	<0.0001		
Total Vanadium	mg/L			0.0006	0.0008	<0.005	<0.005		
Total Zinc	mg/L	5	AO	0.0022	0.006	<0.005	<0.005		
Total Zirconium	mg/L					<0.0005	<0.0005		
Total Calcium	mg/L			30	29.6	28.9	29.7		
Total Magnesium	mg/L			10.7	10.5	10.1	10.7		
Total Potassium	mg/L			2.7	2.8	2.5	2.36		
Total Sodium	mg/L	200	AO	26.4	27.4	25.1	23.9		
Total Sulphur	mg/L					3.3	<3.0		

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	Units	CDWG		May 15 2012	June 5 2013°	May 14 2014	May 20 2015°	May 11 2016°	
Miscellaneous Inorganics									
Fluoride	mg/L	1.5	MAC	0.1	<0.05	0.1	0.044	0.036	
Alkalinity (total as CaCO ₃)	mg/L			150	60	150	70.4	45.8	
Anions									
Dissolved Sulphate	mg/L	500	AO	10.7	4.4	14.1	5.67	3.51	
Dissolved Chloride	mg/L	250	AO	10.5	7.1	7.6	14	7.6	
Nitrite	mg/L	1	MAC	<0.05	<0.05	<0.05	<0.0050	<0.0050	
Miscellaneous									
Apparent Colour	Colour Unit			16	<5	12	5	10	
Nutrients									
Total Ammonia	mg/L			<0.01	0.02	<0.02	0.0072	0.012	
Physical Properties									
Conductivity	µS/cm			334	144	366	199	122	
pH	pH	6.5:8.5	AO	8.1	7.4	7.9	7.9	7.8	
TDS	mg/L	500	AO	188	104	222	100	64	
Turbidity	NTU			0.7	<0.5	<0.5	0.24	0.24	
Microbiological Parameters									
E.coli	MPN/100mL	<1	MAC	<1.0	<1.0	<1.0	<1.0	<1.0	
Total Coliforms	MPN/100mL	<1	MAC	<1.0	<1.0	<1.0	<1.0	<1.0	
Calculated Parameters									
Total Hardness (CaCO ₃)	mg/L			130	57	75	70.9	46	
Nitrate	mg/L	10	MAC	0.1	0.15	0.11	0.301	0.043	
Elements									
Total Mercury	mg/L	0.001	MAC	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	
Total Metals									
Total Aluminum	mg/L	0.1	OG	<0.005	0.011	<0.025	0.0056	0.0075	
Total Antimony	mg/L	0.006	MAC	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	
Total Arsenic	mg/L	0.01	MAC	0.0034	0.0014	0.0036	0.00087	0.00062	
Total Barium	mg/L	1	MAC	0.013	0.008	0.0169	0.0103	0.0073	
Total Beryllium	mg/L			<0.00004	<0.00004	<0.00025	<0.0001	<0.0001	
Total Bismuth	mg/L			<0.001	<0.0010	<0.0005	<0.001	<0.001	
Total Boron	mg/L	5	MAC	0.053	0.027	0.061	<0.050	<0.050	
Total Cadmium	mg/L	0.005	MAC	<0.00001	0.00002	<0.00005	<0.00001	<0.00001	
Total Chromium	mg/L	0.05	MAC	0.0004	<0.0004	<0.0025	<0.001	<0.001	
Total Cobalt	mg/L			0.00004	0.00005	<0.0005	<0.0005	<0.0005	
Total Copper	mg/L	1	AO	0.011	0.009	0.0167	0.0146	0.018	
Total Iron	mg/L	0.3	AO	0.023	0.015	0.023	0.0289	0.0175	
Total Lead	mg/L	0.01	MAC	0.0002	0.0003	<0.0005	<0.0002	0.00026	
Total Manganese	mg/L	0.05	AO	0.063	0.0139	0.0842	0.0131	0.0166	
Total Molybdenum	mg/L			0.0008	0.0006	0.00121	<0.001	<0.001	
Total Nickel	mg/L			<0.001	<0.001	<0.0010	<0.001	<0.001	
Total Selenium	mg/L	0.05	MAC	<0.0006	<0.0006	<0.0005	<0.0001	<0.0001	
Total Silicon	mg/L			10.2	4.49	11.8	6.39	4.41	
Total Silver	mg/L			<0.00001	0.00007	<0.00025	<0.00002	<0.00002	
Total Strontium	mg/L			0.104	0.053	0.122	0.0666	0.0488	
Total Thallium	mg/L			<0.00001	0.00002	<0.00005	<0.00005	<0.00005	
Total Tin	mg/L			<0.0001	0.0005	<0.0005	<0.005	<0.005	
Total Titanium	mg/L			0.003	0.0026	<0.0025	<0.005	<0.005	
Total Uranium	mg/L	0.02	MAC	<0.0004	<0.0004	0.00029	<0.0001	<0.0001	
Total Vanadium	mg/L			0.0009	0.0009	0.001	<0.005	<0.005	
Total Zinc	mg/L	5	AO	0.001	0.003	0.0177	<0.005	<0.005	
Total Zirconium	mg/L						<0.0005	<0.0005	
Total Calcium	mg/L			33.9	15.9	39.2	20	13.4	
Total Magnesium	mg/L			11.4	4.14	13.3	5.08	3.04	
Total Potassium	mg/L			1.4	0.57	1.4	0.518	0.379	
Total Sodium	mg/L	200	AO	20.6	10.3	25.1	8.38	5.99	
Total Sulphur	mg/L						<3.0	<3.0	

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	Units	CDWG		May 23 2012	June 5 2013°	May 14 2014	May 20 2015°	May 11 2016~°	
Miscellaneous Inorganics									
Fluoride	mg/L	1.5	MAC	0.14	<0.05	0.15	0.14	0.11	
Alkalinity (total as CaCO ₃)	mg/L			140	50	140	120	116	
Anions									
Dissolved Sulphate	mg/L	500	AO	10.1	3.9	8	6.45	6.92	
Dissolved Chloride	mg/L	250	AO	13	6.7	41.7	29	26	
Nitrite	mg/L	1	MAC	<0.05	<0.05	<0.05	<0.0050	<0.0050	
Miscellaneous									
Apparent Colour	Colour Unit			16	5	6	<5	10	
Nutrients									
Total Ammonia	mg/L			0.82	0.04	<0.02	0.024	0.011	
Physical Properties									
Conductivity	µS/cm			341	131	415	350	321	
pH	pH	6.5:8.5	AO	7.9	7.3	7.6	8.11	8.05	
TDS	mg/L	500	AO	218	92	270	196	186	
Turbidity	NTU			0.5	<0.5	<0.5	0.12	0.11	
Microbiological Parameters									
E.coli	MPN/100mL	<1	MAC	<1.0	<1.0	<1.0	<1.0	<1.0	
Total Coliforms	MPN/100mL	<1	MAC	<1.0	<1.0	<1.0	<1.0	<1.0	
Calculated Parameters									
Total Hardness (CaCO ₃)	mg/L			130	57	120	98.7	96.2	
Nitrate	mg/L	10	MAC	0.08	0.08	<0.05	<0.020	0.04	
Elements									
Total Mercury	mg/L	0.001	MAC	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	
Total Metals									
Total Aluminum	mg/L	0.1	OG	<0.005	0.009	<0.025	<0.003	<0.003	
Total Antimony	mg/L	0.006	MAC	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	
Total Arsenic	mg/L	0.01	MAC	0.0014	0.0006	0.00149	0.00113	0.00088	
Total Barium	mg/L	1	MAC	0.01	0.007	0.00805	0.0059	0.0049	
Total Beryllium	mg/L			<0.00004	<0.00004	<0.00025	<0.0001	<0.0001	
Total Bismuth	mg/L			<0.001	<0.0010	<0.0005	<0.001	<0.001	
Total Boron	mg/L	5	MAC	0.064	0.019	0.074	0.055	<0.050	
Total Cadmium	mg/L	0.005	MAC	<0.00001	<0.00001	<0.00005	<0.00001	<0.00001	
Total Chromium	mg/L	0.05	MAC	<0.0004	<0.0004	<0.0025	<0.001	<0.001	
Total Cobalt	mg/L			0.00004	<0.00002	<0.0005	<0.0005	<0.0005	
Total Copper	mg/L	1	AO	0.002	0.005	0.0058	0.00951	0.0011	
Total Iron	mg/L	0.3	AO	0.042	<0.010	0.037	0.0434	0.0243	
Total Lead	mg/L	0.01	MAC	0.0002	0.0002	<0.0005	0.00053	<0.0002	
Total Manganese	mg/L	0.05	AO	0.099	<0.0050	0.009	0.0149	0.0065	
Total Molybdenum	mg/L			0.0005	0.0002	0.00033	<0.001	<0.001	
Total Nickel	mg/L			<0.001	<0.001	<0.0010	0.0017	<0.001	
Total Selenium	mg/L	0.05	MAC	<0.0006	<0.0006	<0.0005	<0.0001	<0.0001	
Total Silicon	mg/L			12.2	4.62	14.6	13.6	12.5	
Total Silver	mg/L			<0.00001	<0.00001	<0.00025	<0.00002	<0.00002	
Total Strontium	mg/L			0.132	0.058	0.118	0.102	0.102	
Total Thallium	mg/L			<0.00001	<0.00001	<0.00005	<0.00005	<0.00005	
Total Tin	mg/L			<0.0001	<0.0001	<0.0005	<0.005	<0.005	
Total Titanium	mg/L			0.004	0.0068	<0.0025	<0.005	<0.005	
Total Uranium	mg/L	0.02	MAC	<0.0004	<0.0004	<0.00005	<0.0001	<0.0001	
Total Vanadium	mg/L			0.0004	0.0005	0.0009	<0.005	<0.005	
Total Zinc	mg/L	5	AO	<0.001	0.004	0.0215	0.0059	0.0069	
Total Zirconium	mg/L						<0.0005	<0.0005	
Total Calcium	mg/L			33.2	15.8	29.7	25.6	24.2	
Total Magnesium	mg/L			11.1	4.27	10.8	8.43	8.7	
Total Potassium	mg/L			2.3	0.62	2.5	2.06	1.97	
Total Sodium	mg/L	200	AO	23.1	8.2	44.3	28.1	27.1	
Total Sulphur	mg/L						<3.0	<3.0	

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	Units	CDWG		May 15 2012	June 5 2013°	May 14 2014	May 20 2015°	May 11 2016°	
Miscellaneous Inorganics									
Fluoride	mg/L	1.5	MAC	0.16	<0.05	0.16	0.036	0.03	
Alkalinity (total as CaCO ₃)	mg/L			160	48	140	49.3	48	
Anions									
Dissolved Sulphate	mg/L	500	AO	15.2	3.9	7.1	4.49	3.67	
Dissolved Chloride	mg/L	250	AO	11.9	5.9	43.5	11	7.4	
Nitrite	mg/L	1	MAC	<0.05	<0.05	<0.05	<0.0050	<0.0050	
Miscellaneous									
Apparent Colour	Colour Unit			25	5	6	<5	10	
Nutrients									
Total Ammonia	mg/L			0.91	0.02	<0.02	0.012	0.014	
Physical Properties									
Conductivity	µS/cm			362	119	416	143	124	
pH	pH	6.5:8.5	AO	8	7.3	7.6	7.69	7.75	
TDS	mg/L	500	AO	210	92	278	68	80	
Turbidity	NTU			1	<0.5	<0.5	0.19	0.17	
Microbiological Parameters									
E.coli	MPN/100mL	<1	MAC	<1.0	<1.0	<1.0	<1.0	<1.0	
Total Coliforms	MPN/100mL	<1	MAC	<1.0	<1.0	<1.0	<1.0	<1.0	
Calculated Parameters									
Total Hardness (CaCO ₃)	mg/L			140	50	120	49.2	45.7	
Nitrate	mg/L	10	MAC	<0.05	<0.05	<0.05	0.037	0.053	
Elements									
Total Mercury	mg/L	0.001	MAC	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	
Total Metals									
Total Aluminum	mg/L	0.1	OG	<0.005	0.01	<0.025	0.0043	0.0045	
Total Antimony	mg/L	0.006	MAC	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	
Total Arsenic	mg/L	0.01	MAC	0.0017	0.0005	0.0016	0.00039	0.0004	
Total Barium	mg/L	1	MAC	0.016	0.006	0.00679	0.0067	0.0054	
Total Beryllium	mg/L			<0.00004	<0.00004	<0.00025	<0.0001	<0.0001	
Total Bismuth	mg/L			<0.001	<0.0010	<0.0005	<0.001	<0.001	
Total Boron	mg/L	5	MAC	0.063	0.016	0.083	<0.05	<0.050	
Total Cadmium	mg/L	0.005	MAC	<0.00001	<0.00001	<0.00005	<0.00001	<0.00001	
Total Chromium	mg/L	0.05	MAC	<0.0004	<0.0004	<0.0025	<0.001	<0.001	
Total Cobalt	mg/L			0.00003	<0.00002	<0.0005	<0.0005	<0.0005	
Total Copper	mg/L	1	AO	<0.001	0.004	0.0015	0.00137	0.00131	
Total Iron	mg/L	0.3	AO	0.357	0.027	0.072	0.0358	0.0286	
Total Lead	mg/L	0.01	MAC	0.0001	0.0004	<0.0005	<0.0002	<0.0002	
Total Manganese	mg/L	0.05	AO	0.175	0.006	0.017	0.0063	0.0041	
Total Molybdenum	mg/L			0.0003	0.0002	<0.00025	<0.001	<0.001	
Total Nickel	mg/L			<0.001	<0.001	<0.0010	<0.001	<0.001	
Total Selenium	mg/L	0.05	MAC	<0.0006	<0.0006	<0.0005	<0.0001	<0.0001	
Total Silicon	mg/L			12.1	4.08	15.7	4.28	4.34	
Total Silver	mg/L			<0.00001	<0.00001	<0.00025	<0.00002	<0.00002	
Total Strontium	mg/L			0.132	0.051	0.119	0.0605	0.0483	
Total Thallium	mg/L			<0.00001	<0.00001	<0.00005	<0.00005	<0.00005	
Total Tin	mg/L			<0.0001	<0.0001	<0.0005	<0.005	<0.005	
Total Titanium	mg/L			<0.001	0.0011	<0.0025	<0.005	<0.005	
Total Uranium	mg/L	0.02	MAC	<0.0004	<0.0004	<0.00005	<0.0001	<0.0001	
Total Vanadium	mg/L			0.0004	0.0004	0.0009	<0.005	<0.005	
Total Zinc	mg/L	5	AO	<0.001	0.002	0.0203	<0.005	<0.005	
Total Zirconium	mg/L						<0.0005	<0.0005	
Total Calcium	mg/L			37.1	14	30.2	14.6	12.8	
Total Magnesium	mg/L			11.9	3.69	11	3.08	3.32	
Total Potassium	mg/L			2.4	0.49	2.8	0.358	0.37	
Total Sodium	mg/L	200	AO	22.6	7.42	48.6	6.34	5.82	
Total Sulphur	mg/L						<3.0	<3.0	

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	Units	CDWG		May 15 2012	June 5 2013°	May 14 2014	May 20 2015°	May 11 2016°	
Miscellaneous Inorganics									
Fluoride	mg/L	1.5	MAC	0.15	0.12	0.16	0.088	0.1	
Alkalinity (total as CaCO ₃)	mg/L			140	130	140	85.1	113	
Anions									
Dissolved Sulphate	mg/L	500	AO	5.5	5.4	6.3	5.44	7.13	
Dissolved Chloride	mg/L	250	AO	16.5	39.2	47.4	20	25	
Nitrite	mg/L	1	MAC	<0.05	<0.05	<0.05	<0.0050	<0.0050	
Miscellaneous									
Apparent Colour	Colour Unit			15	6	6	5	10	
Nutrients									
Total Ammonia	mg/L			0.75	0.03	<0.02	0.01	0.023	
Physical Properties									
Conductivity	µS/cm			347	371	430	246	310	
pH	pH	6.5:8.5	AO	8	7.7	7.6	8.02	8.03	
TDS	mg/L	500	AO	204	240	268	128	164	
Turbidity	NTU			0.9	<0.5	<0.5	0.22	0.23	
Microbiological Parameters									
E.coli	MPN/100mL	<1	MAC	<1.0	<1.0	<1.0	<1.0	<1.0	
Total Coliforms	MPN/100mL	<1	MAC	<1.0	<1.0	<1.0	<1.0	<1.0	
Calculated Parameters									
Total Hardness (CaCO ₃)	mg/L			120	110	120	75.3	92.5	
Nitrate	mg/L	10	MAC	<0.05	<0.05	<0.05	0.037	0.049	
Elements									
Total Mercury	mg/L	0.001	MAC	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	
Total Metals									
Total Aluminum	mg/L	0.1	OG	<0.005	<0.005	<0.025	0.0038	<0.003	
Total Antimony	mg/L	0.006	MAC	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	
Total Arsenic	mg/L	0.01	MAC	0.0011	0.0012	0.00122	0.0008	0.0009	
Total Barium	mg/L	1	MAC	0.006	0.006	0.00574	0.0052	0.0062	
Total Beryllium	mg/L			<0.00004	<0.00004	<0.00025	<0.0001	<0.0001	
Total Bismuth	mg/L			<0.001	<0.0010	<0.0005	<0.001	<0.001	
Total Boron	mg/L	5	MAC	0.074	0.068	0.082	<0.05	<0.050	
Total Cadmium	mg/L	0.005	MAC	<0.00001	<0.00001	<0.00005	<0.00001	<0.00001	
Total Chromium	mg/L	0.05	MAC	0.0004	<0.0004	<0.0025	<0.001	<0.001	
Total Cobalt	mg/L			0.00004	0.00002	<0.0005	<0.0005	<0.0005	
Total Copper	mg/L	1	AO	0.003	0.005	0.0041	0.00276	0.00243	
Total Iron	mg/L	0.3	AO	0.073	0.099	0.096	0.0722	0.0781	
Total Lead	mg/L	0.01	MAC	<0.0001	0.0002	<0.0005	<0.0002	0.00023	
Total Manganese	mg/L	0.05	AO	0.11	0.0167	0.017	0.0114	0.0158	
Total Molybdenum	mg/L			0.0002	0.0002	0.00037	<0.001	<0.001	
Total Nickel	mg/L			<0.001	<0.001	0.0024	<0.001	<0.001	
Total Selenium	mg/L	0.05	MAC	<0.0006	<0.0006	<0.0005	<0.0001	<0.0001	
Total Silicon	mg/L			13.9	13.3	15.9	8.91	11.7	
Total Silver	mg/L			<0.00001	<0.00001	<0.00025	<0.00002	<0.00002	
Total Strontium	mg/L			0.109	0.115	0.124	0.0815	0.094	
Total Thallium	mg/L			<0.00001	<0.00001	<0.00005	<0.00005	<0.00005	
Total Tin	mg/L			0.0002	<0.0001	<0.0005	<0.005	<0.005	
Total Titanium	mg/L			0.002	0.0041	<0.0025	<0.005	<0.005	
Total Uranium	mg/L	0.02	MAC	<0.0004	<0.0004	<0.00005	<0.0001	<0.0001	
Total Vanadium	mg/L			0.0006	0.0006	0.0007	<0.005	<0.005	
Total Zinc	mg/L	5	AO	0.002	0.004	0.0159	<0.005	0.0076	
Total Zirconium	mg/L						<0.0005	<0.0005	
Total Calcium	mg/L			32.8	29.5	31.2	21.3	24.5	
Total Magnesium	mg/L			10.1	9.36	10.3	5.35	7.63	
Total Potassium	mg/L			2.6	2.69	2.9	1.4	1.74	
Total Sodium	mg/L	200	AO	27	42.2	51.6	17.2	24.5	
Total Sulphur	mg/L						<3.0	<3.0	

CDWG=Canadian Drinking Water Guidelines
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AO= Asthetic Objective.



Red font indicates non-compliance with Canadian Drinking Water Guidelines

	Units	CDWG		May 15 2012	June 5 2013°	May 14 2014	May 20 2015°	May 11 2016°	
Miscellaneous Inorganics									
Fluoride	mg/L	1.5	MAC	0.16	0.16	0.15	0.14	0.12	
Alkalinity (total as CaCO ₃)	mg/L			140	140	140	118	120	
Anions									
Dissolved Sulphate	mg/L	500	AO	4.2	5.7	6.3	6.75	7.11	
Dissolved Chloride	mg/L	250	AO	23.2	43.9	46	32	27	
Nitrite	mg/L	1	MAC	<0.05	<0.05	<0.05	<0.0050	<0.0050	
Miscellaneous									
Apparent Colour	Colour Unit			36	6	6	<5	15	
Nutrients									
Total Ammonia	mg/L			0.11	0.02	<0.02	0.019	0.027	
Physical Properties									
Conductivity	µS/cm			353	401	426	348	329	
pH	pH	6.5:8.5	AO	7.8	7.7	7.7	8.2	8.09	
TDS	mg/L	500	AO	218	262	276	190	194	
Turbidity	NTU			0.9	<0.5	<0.5	0.17	0.16	
Microbiological Parameters									
E.coli	MPN/100mL	<1	MAC	<1.0	<1.0	<1.0	<1.0	<1.0	
Total Coliforms	MPN/100mL	<1	MAC	<1.0	<1.0	<1.0	<1.0	<1.0	
Calculated Parameters									
Total Hardness (CaCO ₃)	mg/L			120	110	130	92.2	104	
Nitrate	mg/L	10	MAC	<0.05	<0.05	<0.05	0.024	0.047	
Elements									
Total Mercury	mg/L	0.001	MAC	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	
Total Metals									
Total Aluminum	mg/L	0.1	OG	<0.005	<0.005	<0.025	0.0034	<0.003	
Total Antimony	mg/L	0.006	MAC	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	
Total Arsenic	mg/L	0.01	MAC	0.001	0.0013	0.00136	0.00111	0.00106	
Total Barium	mg/L	1	MAC	0.007	0.005	0.00503	0.0053	0.0053	
Total Beryllium	mg/L			<0.00004	<0.00004	<0.00025	<0.0001	<0.0001	
Total Bismuth	mg/L			<0.001	<0.0010	<0.0005	<0.001	<0.001	
Total Boron	mg/L	5	MAC	0.07	0.078	0.089	0.056	0.053	
Total Cadmium	mg/L	0.005	MAC	<0.00001	<0.00001	<0.00005	<0.00001	<0.00001	
Total Chromium	mg/L	0.05	MAC	0.0004	<0.0004	<0.0025	<0.001	<0.001	
Total Cobalt	mg/L			0.00003	0.00003	<0.0005	<0.0005	<0.0005	
Total Copper	mg/L	1	AO	0.002	0.008	0.0179	0.00399	0.00749	
Total Iron	mg/L	0.3	AO	0.52	0.057	0.068	0.0709	0.0752	
Total Lead	mg/L	0.01	MAC	<0.0001	0.0002	<0.0005	<0.0002	0.00086	
Total Manganese	mg/L	0.05	AO	0.163	0.0176	0.016	0.0163	0.021	
Total Molybdenum	mg/L			<0.0001	0.0002	0.00025	<0.001	<0.001	
Total Nickel	mg/L			<0.001	<0.001	<0.0010	<0.001	<0.001	
Total Selenium	mg/L	0.05	MAC	<0.0006	<0.0006	<0.0005	<0.0001	<0.0001	
Total Silicon	mg/L			14.3	14.4	17.1	12.3	12.9	
Total Silver	mg/L			<0.00001	<0.00001	<0.00025	<0.00002	<0.00002	
Total Strontium	mg/L			0.107	0.125	0.131	0.103	0.113	
Total Thallium	mg/L			<0.00001	<0.00001	<0.00005	<0.00005	<0.00005	
Total Tin	mg/L			<0.0001	<0.0001	0.0006	<0.005	<0.005	
Total Titanium	mg/L			0.002	0.0029	<0.0025	<0.005	<0.005	
Total Uranium	mg/L	0.02	MAC	<0.0004	<0.0004	<0.00005	<0.0001	<0.0001	
Total Vanadium	mg/L			0.0006	0.0006	0.001	<0.005	<0.005	
Total Zinc	mg/L	5	AO	0.001	0.006	0.0326	<0.005	0.029	
Total Zirconium	mg/L						<0.0005	<0.0005	
Total Calcium	mg/L			29.6	28.5	31.6	23.7	25.4	
Total Magnesium	mg/L			10.6	10.6	11.6	8	9.98	
Total Potassium	mg/L			2.5	2.76	3.1	1.94	2.34	
Total Sodium	mg/L	200	AO	31	46.2	54	27.2	32.4	
Total Sulphur	mg/L						<3.0	3.2	

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	Units	CDWG		May 15 2012	June 5 2013°	May 14 2014	May 20 2015°	May 11 2016°	
Miscellaneous Inorganics									
Fluoride	mg/L	1.5	MAC	0.16	0.13	0.15	0.14	0.12	
Alkalinity (total as CaCO ₃)	mg/L			140	140	140	116	121	
Anions									
Dissolved Sulphate	mg/L	500	AO	4	5.4	6.4	6.35	7.35	
Dissolved Chloride	mg/L	250	AO	23.2	42.5	46.8	29	27	
Nitrite	mg/L	1	MAC	<0.05	<0.05	<0.05	<0.0050	<0.0050	
Miscellaneous									
Apparent Colour	Colour Unit			81	8	5	5	15	
Nutrients									
Total Ammonia	mg/L			0.13	0.02	<0.02	0.024	0.012	
Physical Properties									
Conductivity	µS/cm			353	399	428	341	337	
pH	pH	6.5:8.5	AO	7.9	7.7	7.6	8.12	8.12	
TDS	mg/L	500	AO	212	252	284	176	204	
Turbidity	NTU			2.2	<0.5	<0.5	0.21	0.18	
Microbiological Parameters									
E.coli	MPN/100mL	<1	MAC	<1.0	<1.0	<1.0	<1.0	<1.0	
Total Coliforms	MPN/100mL	<1	MAC	<1.0	<1.0	<1.0	<1.0	<1.0	
Calculated Parameters									
Total Hardness (CaCO ₃)	mg/L			120	120	120	94.7	99.4	
Nitrate	mg/L	10	MAC	<0.05	<0.05	<0.05	0.024	0.045	
Elements									
Total Mercury	mg/L	0.001	MAC	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	
Total Metals									
Total Aluminum	mg/L	0.1	OG	<0.005	<0.005	<0.025	<0.003	0.0093	
Total Antimony	mg/L	0.006	MAC	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	
Total Arsenic	mg/L	0.01	MAC	0.0013	0.0013	0.00138	0.00112	0.00108	
Total Barium	mg/L	1	MAC	0.009	0.006	0.00472	0.0051	0.0051	
Total Beryllium	mg/L			<0.00004	<0.00004	<0.00025	<0.0001	<0.0001	
Total Bismuth	mg/L			<0.001	<0.0010	<0.0005	<0.001	<0.001	
Total Boron	mg/L	5	MAC	0.069	0.077	0.084	0.052	0.053	
Total Cadmium	mg/L	0.005	MAC	<0.00001	<0.00001	<0.00005	<0.00001	<0.00001	
Total Chromium	mg/L	0.05	MAC	0.0005	<0.0004	<0.0025	<0.001	<0.001	
Total Cobalt	mg/L			0.00004	0.00012	<0.0005	<0.0005	<0.0005	
Total Copper	mg/L	1	AO	0.002	<0.001	0.004	0.00345	0.00117	
Total Iron	mg/L	0.3	AO	1.23	0.07	0.073	0.0816	0.0782	
Total Lead	mg/L	0.01	MAC	0.0002	<0.0001	<0.0005	0.00021	<0.0002	
Total Manganese	mg/L	0.05	AO	0.354	0.0208	0.016	0.0192	0.0205	
Total Molybdenum	mg/L			<0.0001	0.0002	0.00037	<0.001	<0.001	
Total Nickel	mg/L			<0.001	<0.001	<0.0010	<0.001	<0.001	
Total Selenium	mg/L	0.05	MAC	<0.0006	<0.0006	<0.0005	<0.0001	<0.0001	
Total Silicon	mg/L			14.6	14.6	16.5	12.8	13.3	
Total Silver	mg/L			<0.00001	<0.00001	<0.00025	<0.00002	<0.00002	
Total Strontium	mg/L			0.108	0.124	0.127	0.101	0.105	
Total Thallium	mg/L			<0.00001	<0.00001	<0.00005	<0.00005	<0.00005	
Total Tin	mg/L			<0.0001	0.0003	<0.0005	<0.005	<0.005	
Total Titanium	mg/L			0.004	0.0031	<0.0025	<0.005	<0.005	
Total Uranium	mg/L	0.02	MAC	<0.0004	<0.0004	<0.00005	<0.0001	<0.0001	
Total Vanadium	mg/L			0.0007	0.0006	0.001	<0.005	<0.005	
Total Zinc	mg/L	5	AO	0.003	<0.001	0.0482	<0.005	<0.005	
Total Zirconium	mg/L						<0.0005	<0.0005	
Total Calcium	mg/L			29.6	28.7	30.5	25	24.9	
Total Magnesium	mg/L			10.6	10.6	11.2	7.86	9.08	
Total Potassium	mg/L			2.6	2.76	3.1	1.93	2.13	
Total Sodium	mg/L	200	AO	31	46.8	52.8	28.2	29.6	
Total Sulphur	mg/L						<3.0	<3.0	

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	Units	CDWG		May 23 2012	June 5 2013°	May 14 2014	May 20 2015°	May 11 2016°	
Miscellaneous Inorganics									
Fluoride	mg/L	1.5	MAC	0.16	0.13	0.15	0.18	0.12	
Alkalinity (total as CaCO ₃)	mg/L			140	140	140	141	121	
Anions									
Dissolved Sulphate	mg/L	500	AO	3.8	5.7	6.4	7.26	7.19	
Dissolved Chloride	mg/L	250	AO	15.5	46.5	48.9	36	27	
Nitrite	mg/L	1	MAC	<0.05	<0.05	<0.05	<0.0050	<0.0050	
Miscellaneous									
Apparent Colour	Colour Unit			13	8	6	<5.0	10	
Nutrients									
Total Ammonia	mg/L			0.78	0.02	<0.02	0.022	0.012	
Physical Properties									
Conductivity	µS/cm			329	414	431	412	331	
pH	pH	6.5:8.5	AO	7.8	7.6	7.6	8.15	8.13	
TDS	mg/L	500	AO	216	262	284	224	188	
Turbidity	NTU			0.5	<0.5	<0.5	0.15	0.17	
Microbiological Parameters									
E.coli	MPN/100mL	<1	MAC	<1.0	<1.0	<1.0	<1.0	<1.0	
Total Coliforms	MPN/100mL	<1	MAC	<1.0	<1.0	<1.0	<1.0	<1.0	
Calculated Parameters									
Total Hardness (CaCO ₃)	mg/L			120	110	130	102	98.9	
Nitrate	mg/L	10	MAC	<0.05	<0.05	<0.05	<0.020	0.055	
Elements									
Total Mercury	mg/L	0.001	MAC	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	
Total Metals									
Total Aluminum	mg/L	0.1	OG	<0.005	<0.005	<0.025	<0.003	<0.003	
Total Antimony	mg/L	0.006	MAC	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	
Total Arsenic	mg/L	0.01	MAC	0.0013	0.0018	0.00214	0.00128	0.0013	
Total Barium	mg/L	1	MAC	0.002	0.005	0.00537	0.0052	0.0048	
Total Beryllium	mg/L			<0.00004	<0.00004	<0.00025	<0.0001	<0.0001	
Total Bismuth	mg/L			<0.001	<0.0010	<0.0005	<0.001	<0.001	
Total Boron	mg/L	5	MAC	0.068	0.077	0.081	0.066	0.051	
Total Cadmium	mg/L	0.005	MAC	<0.00001	<0.00001	<0.00005	<0.00001	<0.00001	
Total Chromium	mg/L	0.05	MAC	0.0009	<0.0004	<0.0025	<0.001	<0.001	
Total Cobalt	mg/L			0.00005	<0.00002	<0.0005	<0.0005	<0.0005	
Total Copper	mg/L	1	AO	<0.001	0.002	0.0047	0.00265	0.0022	
Total Iron	mg/L	0.3	AO	0.169	0.081	0.082	0.0706	0.0788	
Total Lead	mg/L	0.01	MAC	<0.0001	0.0001	<0.0005	<0.0002	<0.0002	
Total Manganese	mg/L	0.05	AO	0.157	0.0212	0.021	0.0154	0.0252	
Total Molybdenum	mg/L			0.0003	0.0002	<0.00025	<0.001	<0.001	
Total Nickel	mg/L			<0.001	<0.001	<0.0010	<0.001	<0.001	
Total Selenium	mg/L	0.05	MAC	<0.0006	<0.0006	<0.0005	<0.0001	<0.0001	
Total Silicon	mg/L			14	14.7	17.2	14.6	13	
Total Silver	mg/L			<0.00001	<0.00001	<0.00025	<0.00002	<0.00002	
Total Strontium	mg/L			0.113	0.124	0.131	0.112	0.103	
Total Thallium	mg/L			<0.00001	<0.00001	<0.00005	<0.00005	<0.00005	
Total Tin	mg/L			<0.0001	<0.0001	<0.0005	<0.005	<0.005	
Total Titanium	mg/L			<0.001	<0.0010	<0.0025	<0.005	<0.005	
Total Uranium	mg/L	0.02	MAC	<0.0004	<0.0004	<0.00005	<0.0001	<0.0001	
Total Vanadium	mg/L			0.0005	0.0006	0.0009	<0.005	<0.005	
Total Zinc	mg/L	5	AO	<0.001	0.002	0.0236	<0.005	<0.005	
Total Zirconium	mg/L						<0.0005	<0.0005	
Total Calcium	mg/L			29.1	28.5	31.9	26.3	25.3	
Total Magnesium	mg/L			10.6	10.6	11.5	8.86	8.64	
Total Potassium	mg/L			2.4	2.84	3.2	2.39	2.07	
Total Sodium	mg/L	200	AO	26.4	47.4	56.9	35.4	28.7	
Total Sulphur	mg/L						<3.0	<3.0	

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	Units	CDWG		October 31 2012	June 5 2013	May 14 2014	May 25 2015	May 11 2016	
Miscellaneous Inorganics									
Fluoride	mg/L	1.5	MAC	0.2	0.15	0.16	0.15	0.15	
Alkalinity (total as CaCO ₃)	mg/L			180	140	140	136	156	
Anions									
Dissolved Sulphate	mg/L	500	AO	5.8	5.6	6.4	7.29	8.2	
Dissolved Chloride	mg/L	250	AO	27.7	45.4	45.8	39	30	
Nitrite	mg/L	1	MAC	<0.05	<0.05	<0.05	<0.050	<0.0050	
Miscellaneous									
Apparent Colour	Colour Unit			5	7	6	<5	10	
Nutrients									
Total Ammonia	mg/L			0.2	0.1	<0.02	0.062	0.023	
Physical Properties									
Conductivity	µS/cm			407	409	424	413	403	
pH	pH	6.5:8.5	AO	9.1	7.6	7.6	8.02	8.11	
TDS	mg/L	500	AO	258	266	272	238	216	
Turbidity	NTU			<0.5	<0.5	<0.5	0.26	0.23	
Microbiological Parameters									
E.coli	MPN/100mL	<1	MAC	<1.0	<1.0	<1.0	<1.0	<1.0	
Total Coliforms	MPN/100mL	<1	MAC	<1.0	<1.0	<1.0	<1.0	<1.0	
Calculated Parameters									
Total Hardness (CaCO ₃)	mg/L			150	120	120	120	111	
Nitrate	mg/L	10	MAC	<0.05	<0.05	<0.05	<0.050	<0.020	
Elements									
Total Mercury	mg/L	0.001	MAC	<0.0001	<0.00001	<0.00001	<0.00001	<0.00001	
Total Metals									
Total Aluminum	mg/L	0.1	OG	0.077	<0.005	<0.025	<0.003	<0.003	
Total Antimony	mg/L	0.006	MAC	<0.0001	<0.0002	<0.0005	<0.0005	<0.0005	
Total Arsenic	mg/L	0.01	MAC	0.0012	0.0014	0.00136	0.00138	0.00112	
Total Barium	mg/L	1	MAC	0.00538	0.005	0.00534	0.0049	0.0049	
Total Beryllium	mg/L			<0.00005	<0.00004	<0.00025	<0.0001	<0.0001	
Total Bismuth	mg/L			0.0001	<0.0010	<0.0005	<0.001	<0.001	
Total Boron	mg/L	5	MAC	0.073	0.083	0.084	0.066	0.062	
Total Cadmium	mg/L	0.005	MAC	0.00001	<0.00001	<0.00005	<0.00001	<0.00001	
Total Chromium	mg/L	0.05	MAC	<0.0005	<0.0004	<0.0025	<0.001	<0.001	
Total Cobalt	mg/L			<0.0001	0.00005	<0.0005	<0.0005	<0.0005	
Total Copper	mg/L	1	AO	0.0004	0.002	0.0083	0.00322	0.00258	
Total Iron	mg/L	0.3	AO	0.032	0.09	0.103	0.16	0.107	
Total Lead	mg/L	0.01	MAC	<0.0001	<0.0001	0.0006	0.00197	0.00121	
Total Manganese	mg/L	0.05	AO	0.0091	0.0258	0.025	0.0413	0.0292	
Total Molybdenum	mg/L			0.00031	0.0003	0.00038	<0.001	<0.001	
Total Nickel	mg/L			0.0006	<0.001	<0.0010	<0.001	<0.001	
Total Selenium	mg/L	0.05	MAC	<0.0001	<0.0006	<0.0005	<0.0001	<0.0001	
Total Silicon	mg/L			15.6	14.9	16.8	16.1	16.6	
Total Silver	mg/L			<0.00001	<0.00001	<0.00025	<0.00002	<0.00002	
Total Strontium	mg/L			0.121	0.132	0.13	0.121	0.124	
Total Thallium	mg/L			<0.00001	<0.00001	<0.00005	<0.00005	<0.00005	
Total Tin	mg/L			<0.0001	<0.0001	<0.0005	<0.005	<0.005	
Total Titanium	mg/L			<0.0005	0.0029	<0.0025	<0.005	<0.005	
Total Uranium	mg/L	0.02	MAC	<0.00001	<0.0004	<0.00005	<0.0001	<0.0001	
Total Vanadium	mg/L			0.0012	0.0006	0.0008	<0.005	<0.005	
Total Zinc	mg/L	5	AO	<0.0005	0.005	0.0281	0.0055	<0.005	
Total Zirconium	mg/L						<0.0005	<0.0005	
Total Calcium	mg/L			29	29.3	31.2	29.6	27.7	
Total Magnesium	mg/L			18.7	10.8	11.4	11.1	10.3	
Total Potassium	mg/L			2.6	3.03	3.1	2.7	2.65	
Total Sodium	mg/L	200	AO	35.3	48.2	53.5	39.6	35.3	
Total Sulphur	mg/L						3.1	<3.0	



Regional District of Nanaimo - Water Services Department

Nanoose Bay Peninsula Water Analysis - 2016 Monthly Report



Date	Sample Location (Address)	Health Department		In-House									
		E. coli *	Total Coliform *	E.coli *	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-Dec-16	1566 Arbutus	0	0	0	0	9	7.36	0.36	212.2	0.21	442.0	0.06	0.023
5-Dec-16	3427 Tyee	0	0	0	0	7	7.35	0.09	208.0	0.21	430.0	0.08	0.031
5-Dec-16	1270 Sea Dog	0	0	0	0	7	7.30	0.67	210.7	0.21	437.0	0.21	0.051
5-Dec-16	2454 Armstrong	0	0	0	0	9	7.30	0.91	213.0	0.21	439.0	0.16	0.030
5-Dec-16	3500 Fairwinds	0	0	0	0	8	7.47	1.05	211.1	0.21	438.0	0.10	0.025
5-Dec-16	1996 Highland	0	0	0	0	9	7.42	0.52	210.0	0.21	434.0	0.02	0.011
5-Dec-16	Florence & Anchor	0	0	0	0	7	7.46	0.20	207.7	0.21	431.0	0.08	0.013
7-Dec-16	1358 Madrona	0	0	0	0	8	7.50	0.31	213.7	0.21	443.0		
7-Dec-16	Lot 51 Swallow	0	0	0	0	7	7.35	0.04	208.0	0.21	432.0		
7-Dec-16	2359 Higginson	0	0	0	0	7	7.41	0.77	211.6	0.21	439.0		
7-Dec-16	Lot 54 Evanshire	0	0	0	0	8	7.41	0.81	212.0	0.21	439.0		
7-Dec-16	3730 Fairwinds	0	0	0	0	7	7.35	0.82	210.7	0.21	437.0		
7-Dec-16	3383 Redden	0	0	0	0	7	7.33	0.30	210.0	0.21	436.0		
7-Dec-16	2329 Chain	0	0	0	0	7	7.39	0.32	207.8	0.21	431.0		
13-Dec-16	1565 Stonelake	0	0	0	0	8	7.35	0.63	213.0	0.21	440.0		
13-Dec-16	1639 Marina	0	0	0	0	7	7.40	0.14	211.8	0.21	439.0		
13-Dec-16	2315 Ida Lane	0	0	0	0	8	7.45	0.58	223.0	0.22	461.0		
13-Dec-16	3465 Cambridge	0	0	0	0	6	7.46	0.77	216.3	0.21	450.0		
13-Dec-16	3541 Shelby Lane	0	0	0	0	7	7.44	0.74	217.0	0.22	448.0		
13-Dec-16	2339 Garry Oak	0	0	0	0	7	7.31	1.16	215.7	0.21	447.0		
Average		0	0	0	0	7.5	7.4	0.56	212.2	0.2	439.7	0.10	0.026
Maximum		0	0	0	0	9	7.5	1.16	223	0.22	461	0.21	0.051
Minimum		0	0	0	0	6	7.3	0.04	207.7	0.21	430	0.02	0.011

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 Bay Peninsula Water Analysis - 2016 Monthly Report



Date	Sample Location (Address)	Health Department		In-House									
		E. coli *	Total Coliform *	E.coli *	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-16	1358 Madrona	0	0	0	0	14	7.34	1.18	181.1	0.18	372.0	0.01	0.073
2-Nov-16	3427 Tye	0	0	0	0	12	7.35	0.24	202.7	0.20	422.0	0.07	0.032
2-Nov-16	1270 Sea Dog	0	0	0	0	12	7.18	0.98	170.9	0.17	356.0	0.12	0.048
2-Nov-16	2454 Armstrong	0	0	0	0	13	7.24	0.51	209.5	0.21	434.0	0.13	0.036
2-Nov-16	3500 Fairwinds	0	0	0	0	11	7.31	0.98	206.0	0.21	428.0	0.12	0.034
2-Nov-16	1996 Highland	0	0	0	0	12	7.29	0.45	207.5	0.21	430.0	0.05	0.017
2-Nov-16	Florence & Anchor	0	0	0	0	12	7.35	0.25	193.9	0.19	403.0	0.16	0.027
9-Nov-16	1565 Stonelake	0	0	0	0	13	7.31	0.59	183.6	0.18	381.0		
9-Nov-16	2359 Higginson	0	0	0	0	12	7.35	0.44	175.3	0.17	365.0		
9-Nov-16	2315 Ida Lane	0	0	0	0	14	7.27	0.40	215.0	0.21	446.0		
9-Nov-16	lot 54 Evanshire	0	0	0	0	12	7.36	0.85	209.3	0.21	434.0		
9-Nov-16	3383 Redden	0	0	0	0	12	7.27	0.59	209.6	0.21	434.0		
9-Nov-16	2339 Garry Oak	0	0	0	0	12	7.22	1.10	209.9	0.21	435.0		
15-Nov-16	1566 Arbutus	0	0	0	0		7.31	0.32	183.1	0.18	380.0		
15-Nov-16	Lot 51 Swallow	0	0	0	0		7.20	0.31	209.2	0.21	434.0		
15-Nov-16	NB Elementary			0	0		7.20	1.59	209.0	0.21	433.0		
15-Nov-16	3730 Fairwinds	0	0	0	0		7.26	1.11	210.0	0.21	435.0		
15-Nov-16	3541 Shelby	0	0	0	0		7.29	1.15	209.0	0.21	434.0		
15-Nov-16	2329 Chain	0	0	0	0		7.24	0.39	201.7	0.20	419.0		
23-Nov-16	1358 Madrona			0	0	10	7.50	0.49	213.2	0.21	442.0		
23-Nov-16	1639 Marina	0	0	0	0	9	7.21	1.22	210.0	0.21	43.5		
23-Nov-16	2454 Armstrong			0	0	10	7.21	0.77	211.0	0.21	438.0		
23-Nov-16	3465 Cambridge	0	0	0	0	10	7.30	1.03	207.0	0.21	430.0		
23-Nov-16	Florence & Anchor			0	0	9	7.26	1.01	207.0	0.21	429.0		
28-Nov-16	1565 Stonelake			0	0	11	7.05	0.87	211.9	0.21	440.0		
28-Nov-16	2359 Higginson			0	0	10	7.05	0.81	210.0	0.21	435.0		
28-Nov-16	2315 Ida Lane			0	0	12	7.15	0.42	212.5	0.21	441.0		
28-Nov-16	3383 Redden			0	0	11	7.16	0.36	210.0	0.21	435.0		
28-Nov-16	2339 Garry Oak			0	0	11	7.10	1.13	210.7	0.21	437.0		
	Average	0	0	0	0	11.5	7.3	0.74	203.4	0.2	408.5	0.09	0.038
	Maximum	0	0	0	0	14	7.5	1.59	215	0.21	446	0.16	0.073
	Minimum	0	0	0	0	9	7.05	0.24	170.9	0.17	43.5	0.01	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

*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 Bay Peninsula Water Analysis - 2016 Monthly Report



Date	Sample Location (Address)	Health Department		In-House									
		E. coli *	Total Coliform *	E.coli *	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-16	1566 Arbutus	0	0	0	0	13	7.11	0.38	87.2	0.09	182.9	0.03	0.022
5-Oct-16	3427 Tyee	0	0	0	0	13	7.18	0.02	113.8	0.11	239.0	0.09	0.037
5-Oct-16	1270 Sea Dog	0	0	0	0	12	6.98	0.31	75.3	0.07	158.6	0.05	0.000
5-Oct-16	2315 Ida Lane	0	0	0	0	14	7.27	0.20	141.2	0.14	295.0	0.07	0.028
5-Oct-16	3500 Fairwinds	0	0	0	0	11	7.22	0.67	154.0	0.15	321.0	0.06	0.012
5-Oct-16	1996 Highland	0	0	0	0	14.5	7.25	0.43	163.8	0.16	341.0	0.03	0.009
5-Oct-16	2329 Chain	0	0	0	0	10	7.16	1.09	164.6	0.16	343.0	0.07	0.010
11-Oct-16	1358 Madrona	0	0	0	0	16	7.29	0.20	143.0	0.14	299.0		
11-Oct-16	2359 Higginson	0	0	0	0	14	6.95	0.17	102.8	0.10	216.1		
11-Oct-16	2454 Armstrong	0	0	0	0	16	7.19	0.06	120.0	0.12	251.0		
11-Oct-16	Lot 54 Evanshire	0	0	0	0	14	7.21	0.63	172.1	0.17	359.0		
11-Oct-16	3383 Redden	0	0	0	0	15	7.23	0.27	157.1	0.16	328.0		
11-Oct-16	Florence & Anchor	0	0	0	0	13	7.16	0.83	180.6	0.18	376.0		
19-Oct-16	1565 Stonelake	0	0	0	0	12	7.16	0.64	180.8	0.18	376.0		
19-Oct-16	Lot 51 Swallow	0	0	0	0	10	7.11	0.38	168.3	0.17	350.0		
19-Oct-16	NB Elementary			0	0	10	7.22	1.43	205.6	0.20	427.0		
19-Oct-16	3730 Fairwinds	0	0	0	0	12	7.28	0.80	198.5	0.20	412.0		
19-Oct-16	3541 Shelby	0	0	0	0	11	7.35	0.87	199.7	0.20	415.0		
19-Oct-16	2339 Garry Oak	0	0	0	0	10	7.25	1.26	204.0	0.20	422.0		
25-Oct-16	1566 Arbutus			0	0	11	7.08	0.79	175.7	0.17	366.0		
25-Oct-16	1639 Marina	0	0	0	0	10	7.01	0.82	172.3	0.17	359.0		
25-Oct-16	2315 Ida Lane			0	0	13	7.21	0.24	190.9	0.19	397.0		
25-Oct-16	3465 Cambridge	0	0	0	0	10	7.28	1.03	204.0	0.20	422.0		
25-Oct-16	2329 Chain			0	0	9	7.21	0.34	185.1	0.18	385.0		
	Average	0	0	0	0	12.2	7.2	0.58	160.9	0.16	335.0	0.06	0.017
	Maximum	0	0	0	0	16	7.35	1.43	205.6	0.20	427	0.09	0.037
	Minimum	0	0	0	0	9	6.95	0.02	75.3	0.07	158.6	0.03	0.000

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 Bay Peninsula Water Analysis - 2016 Monthly Report



Date	Sample Location (Address)	Health Department		In-House									
		E. coli *	Total Coliform *	E.coli *	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-Sep-16	1565 Stonelake	0	0	0	0	17	7.15	0.38	103.8	0.10	218.0	0.03	0.013
7-Sep-16	3427 Tyee	0	0	0	0	18	7.19	0.03	74.1	0.07	156.2	0.04	0.018
7-Sep-16	1270 Sea Dog	0	0	0	0	17	7.29	0.47	77.2	0.08	162.9	0.02	0.018
7-Sep-16	2454 Armstrong	0	0	0	0	18	7.15	0.56	150.8	0.15	315.0	0.06	0.008
7-Sep-16	3500 Fairwinds	0	0	0	0	15	7.37	0.94	180.1	0.18	375.0	0.07	0.016
7-Sep-16	1996 Highland	0	0	0	0	18	7.40	0.70	187.7	0.18	387.0	0.03	0.011
7-Sep-16	2339 Garry Oak	0	0	0	0	14	7.09	1.54	203.0	0.20	421.0	0.12	0.013
13-Sep-16	1566 Arbutus	0	0	0	0	16	7.11	0.54	73.8	0.07	155.7		
13-Sep-16	2359 Higginson	0	0	0	0	17	7.03	0.55	69.7	0.07	147.1		
13-Sep-16	2315 Ida Lane	0	0	0	0	18	7.29	0.31	119.5	0.12	250.0		
13-Sep-16	Lot 54 Evanshire	0	0	0	0	14	7.34	1.09	179.1	0.18	373.0		
13-Sep-16	3383 Redden	0	0	0	0	17	7.37	0.88	162.5	0.16	339.0		
13-Sep-16	2329 Chain	0	0	0	0	14	7.37	0.40	168.1	0.17	350.0		
21-Sep-16	1358 Madrona	0	0	0	0	14	7.26	0.38	95.2	0.09	199.8		
21-Sep-16	Lot 51 Swallow	0	0	0	3	15	7.29	0.00	167.3	0.17	349.0		
21-Sep-16	NB Elementary			0	0	9	7.21	1.79	204.0	0.20	423.0		
21-Sep-16	3730 Fairwinds	0	0	0	0	14	7.30	0.92	190.7	0.19	396.0		
21-Sep-16	3541 Shelby	0	0	0	0	12	7.34	1.06	194.4	0.19	404.0		
21-Sep-16	Florence & Anchor	0	0	0	0	12	7.29	0.57	173.0	0.17	360.0		
28-Sep-16	1565 Stonelake			0	0	14	7.09	0.57	113.4	0.11	238.0		
28-Sep-16	1639 Marina	0	0	0	0	13	6.94	0.76	72.1	0.07	151.9		
28-Sep-16	2454 Armstrong			0	0	14	7.11	0.48	148.7	0.15	310.0		
28-Sep-16	3465 Cambridge	0	0	0	0	11	7.23	0.99	159.2	0.16	330.0		
28-Sep-16	2339 Garry Oak			0	0	11	7.23	1.39	173.7	0.17	362.0		
	Average	0	0	0	0.13	14.7	7.2	0.72	143.4	0.14	298.9	0.05	0.014
	Maximum	0	0	0	3	18	7.4	1.79	204	0.20	423	0.12	0.018
	Minimum	0	0	0	0	9	6.94	0.00	69.7	0.07	147.1	0.02	0.008

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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

Nanoose Bay Peninsula Water Analysis - 2016 Monthly Report



Date	Sample Location (Address)	Health Department		In-House									
		E. coli *	Total Coliform *	E.coli *	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-Aug-16	1566 Arbutus	0	0	0	0	17	6.87	0.75	70.8	0.07	148.9	0.02	0.013
3-Aug-16	3427 Tyee	0	0	0	0	20	7.08	0.35	158.4	0.16	330.0	0.04	0.010
3-Aug-16	1270 Sea Dog	0	0	0	0	19	7.02	0.65	71.5	0.07	151.0	0.04	0.000
3-Aug-16	2454 Armstrong	0	0	0	0	17	7.13	0.40	130.5	0.13	273.0	0.13	0.010
3-Aug-16	3500 Fairwinds	0	0	0	0	16	7.06	1.02	146.1	0.14	305.0	0.07	0.013
3-Aug-16	1996 Highland	0	0	0	0	20	7.22	0.68	166.3	0.16	346.0	0.28	0.083
3-Aug-16	2329 Chain Way	0	0	0	0	15	7.22	0.48	173.0	0.17	360.0	0.08	0.016
10-Aug-16	1358 Madrona	0	0	0	0	18	7.10	0.61	92.9	0.09	195.4		
10-Aug-16	2359 Higginson	0	0	0	0	17	7.13	0.58	71.8	0.07	151.5		
10-Aug-16	2315 Ida Lane	0	0	0	0	18	7.11	0.53	119.8	0.12	251.0		
10-Aug-16	Lot 54 Evanshire	0	0	0	0	17	7.14	0.75	154.4	0.15	323.0		
10-Aug-16	3383 Redden	0	0	0	0	20	7.04	0.86	157.4	0.16	328.0		
10-Aug-16	Florence & Anchor	0	0	0	0	16	7.18	1.39	187.7	0.19	390.0		
17-Aug-16	1565 Stonelake	0	0	0	0	18	7.33	0.39	99.4	0.10	208.2		
17-Aug-16	Lot 51 Swallow	0	0	0	0	19	7.16	0.04	162.7	0.16	333.0		
17-Aug-16	NB Elementary			0	0	13	7.18	1.10	160.9	0.16	335.0		
17-Aug-16	3730 Fairwinds	0	0	0	0	16	7.22	0.79	170.6	0.17	355.0		
17-Aug-16	3541 Shelby	0	0	0	0	16	7.25	0.81	170.3	0.17	354.0		
17-Aug-16	2339 Garry Oak	0	0	0	0	14	7.20	1.09	198.8	0.20	413.0		
24-Aug-16	1566 Arbutus			0	0	19	6.96	0.68	68.8	0.07	145.3		
24-Aug-16	1639 Marina Way	0	0	0	0	19	7.06	0.82	65.2	0.06	137.8		
24-Aug-16	2454 Armstong			0	0	19	6.97	0.34	123.2	0.12	258.0		
24-Aug-16	3465 Cambridge	0	0	0	0	18	7.21	0.92	157.7	0.16	239.0		
24-Aug-16	2329 Chain Way			0	0	17	6.94	0.47	158.4	0.16	330.0		
29-Aug-16	1358 Madrona			0	0	15	6.88	0.55	80.5	0.08	169.3		
29-Aug-16	Lot 51 Swallow			0	0	16.5	6.99	0.05	167.0	0.17	348.0		
29-Aug-16	2315 Ida Lane			0	0	16.5	7.15	0.50	122.7	0.12	256.0		
29-Aug-16	3383 Redden			0	0	15.5	7.16	0.94	162.9	0.16	339.0		
29-Aug-16	Florence & Anchor			0	0	14.5	7.16	0.43	157.6	0.16	328.0		
	Average	0	0	0	0	17.1	7.1	0.65	135.4	0.1	279.4	0.09	0.021
	Maximum	0	0	0	0	20	7.33	1.39	198.8	0.2	413	0.28	0.083
	Minimum	0	0	0	0	13	6.87	0.04	65.2	0.06	137.8	0.02	0

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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

Nanoose Bay Peninsula Water Analysis - 2016 Monthly Report



Date	Sample Location (Address)	Health Department		In-House									
		E. coli *	Total Coliform *	E.coli *	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-16	1565 Stonelake	0	0	0	0	17	6.93	1.18	90.5	0.09	190.5	0.03	0.007
6-Jul-16	3427 Tyee	0	0	0	0	17	7.17	0.33	173.6	0.17	361.0	0.05	0.023
6-Jul-16	1273 Sea Dog	0	0	0	0	17	7.03	1.11	57.6	0.06	122.1	0.04	0.000
6-Jul-16	2315 Ida Lane	0	0	0	0	17	7.14	0.58	132.5	0.13	277.0	0.18	0.026
6-Jul-16	3500 Fairwinds	0	0	0	0	14	7.26	0.90	169.9	0.17	354.0	0.14	0.029
6-Jul-16	1996 Highlands	0	0	0	0	17	7.30	0.67	176.0	0.17	365.0	0.06	0.004
6-Jul-16	2339 Garry Oak	0	0	0	0	14	7.29	1.29	194.6	0.19	404.0	0.13	0.025
13-Jul-16	1566 Arbutus	0	0	0	4	16.5	6.84	0.42	56.8	0.06	123.8		
13-Jul-16	2359 Higginson	0	0	0	14	15.5	6.97	0.23	54.3	0.05	114.9		
13-Jul-16	2454 Armstrong	0	0	0	0	16	6.98	0.20	88.4	0.09	186.8		
13-Jul-16	Lot 54 Evanshire	0	0	0	0	14.5	7.15	0.97	164.2	0.16	342.0		
13-Jul-16	3383 Redden	0	0	0	0	17.5	7.15	0.46	147.3	0.15	307.0		
13-Jul-16	2329 Chain	0	0	0	0	14.5	7.02	0.35	139.8	0.14	304.0		
19-Jul-16	1358 Madrona	0	0	0	0		7.14	0.51	115.2	0.11	242.0		
19-Jul-16	Lot 51 Swallow	0	0	0	0		7.19	0.06	168.2	0.17	350.0		
19-Jul-16	NB Elementary			0	0		7.20	1.25	151.7	0.15	317.0		
19-Jul-16	3730 Fairwinds	0	0	0	0		7.42	1.01	178.8	0.18	372.0		
19-Jul-16	3541 Shelby	0	0	0	0		7.40	1.08	177.6	0.18	369.0		
19-Jul-16	Florence & Anchor	0	0	0	0		7.33	0.55	149.9	0.15	313.0		
27-Jul-16	1565 Stonelake			0	0	18	7.02	0.47	99.9	0.10	209.9		
27-Jul-16	1639 Marina	0	0	0	0	18	6.95	0.76	77.5	0.05	163.3		
27-Jul-16	2315 Ida Lane			0	0	18	7.14	0.66	144.8	0.14	302.0		
27-Jul-16	3465 Cambridge	0	0	0	0	15	7.25	0.93	165.4	0.16	344.0		
27-Jul-16	Garry Oak			0	0	14	7.20	1.49	197.1	0.20	410.0		
	Average	0	0	0	0.75	16.1	7.1	0.73	136.3	0.1	285.2	0.09	0.016
	Maximum	0	0	0	14	18	7.42	1.49	197.1	0.2	410	0.18	0.029
	Minimum	0	0	0	0	14	6.84	0.06	54.3	0.05	114.9	0.03	0

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.

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 E.coli coliform bacteria at the same time as total coliforms to rule out the presence of harmful pathogens. If background bacteria (BG), total or E.coli 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 Bay Peninsula Water Analysis - 2016 Monthly Report



Date	Sample Location (Address)	Health Department		In-House									
		E. coli *	Total Coliform *	E.coli *	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-Jun-16	1358 Madrona	0	0	0	0	15	7.16	0.45	68.1	0.07	143.7	0.02	0.027
8-Jun-16	3427 Tyee	0	0	0	0	16	7.36	0.57	156.7	0.16	327.0	0.04	0.036
8-Jun-16	1270 Sea Dog	0	0	0	0	17	7.30	0.40	59.5	0.06	125.8	0.04	0.010
8-Jun-16	2454 Armstrong	0	0	0	0	14	7.23	0.41	96.2	0.10	202.1	0.09	0.024
8-Jun-16	3500 Fairwinds	0	0	0	0	15	7.32	0.93	159.9	0.16	333.0	0.07	0.025
8-Jun-16	1996 Highland	0	0	0	0	17	7.34	0.69	160.3	0.16	334.0	0.07	0.022
8-Jun-16	Florence & Anchor	0	0	0	0	15	7.30	0.34	157.5	0.16	328.0	0.07	0.031
15-Jun-16	1565 Stonelake	0	0	0	0	15	6.94	0.57	95.6	0.09	201.9		
15-Jun-16	2359 Higginson	0	0	0	0	15	7.01	0.36	63.5	0.06	134.3		
15-Jun-16	2315 Ida Lane	0	0	0	0	16	7.39	0.34	116.5	0.12	244.0		
15-Jun-16	Lot 54 Evanshire	0	0	0	0	14	7.37	0.92	156.0	0.15	326.0		
15-Jun-16	3383 Redden	0	0	0	0	17	7.31	0.68	162.4	0.16	338.0		
15-Jun-16	2339 Garry Oak	0	0	0	0	14	7.27	0.99	150.6	0.15	314.0		
22-Jun-16	1566 Arbutus	0	0	0	0	16	7.14	0.53	75.0	0.07	157.9		
22-Jun-16	Lot 51, Swallow	0	0	0	4	16	7.41	0.02	174.2	0.17	362.0		
22-Jun-16	NB Elementary			0	0	14	7.32	1.14	131.7	0.13	275.0		
22-Jun-16	3730 Fairwinds	0	0	0	0	14	7.29	1.08	189.6	0.19	394.0		
22-Jun-16	3541 Shelby	0	0	0	0	14	7.34	0.96	187.4	0.19	390.0		
22-Jun-16	2329 Chain Way	0	0	0	0	14	7.12	1.01	139.8	0.14	292.0		
28-Jun-16	1358 Madrona			0	0	17	7.03	0.59	87.8	0.09	184.9		
28-Jun-16	1639 Marina	0	0	0	0	16	6.96	0.59	65.1	0.06	137.5		
28-Jun-16	2454 Armstrong			0	0	17	7.09	0.84	162.1	0.16	338.0		
28-Jun-16	3465 Cambridge	0	0	0	0	16	7.17	0.98	159.5	0.16	333.0		
28-Jun-16	Florence & Anchor			0	0	14	7.17	1.15	168.5	0.17	351.0		
	Average	0	0	0	0.17	15.3	7.2	0.69	131.0	0.1	273.6	0.06	0.025
	Maximum	0	0	0	4	17	7.41	1.15	189.6	0.19	394	0.09	0.036
	Minimum	0	0	0	0	14	6.94	0.02	59.5	0.06	125.8	0.02	0.010

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.

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 E.coli coliform bacteria at the same time as total coliforms to rule out the presence of harmful pathogens. If background bacteria (BG), total or E.coli 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 Bay Peninsula Water Analysis - 2016 Monthly Report



Date	Sample Location (Address)	Health Department		In-House									
		E. coli *	Total Coliform *	E.coli *	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-May-16	1565 Stonelake	0	0	0	0	13	7.15	0.42	143.2	0.14	297.0		
3-May-16	2359 Higginson	0	0	0	0	13	7.10	0.35	79.9	0.08	169.1		
3-May-16	2454 Armstrong	0	0	0	0	12	7.18	0.27	119.4	0.12	250.0		
3-May-16	Lot 54 Evanshire	0	0	0	0	14	7.32	0.78	180.0	0.18	375.0		
3-May-16	1996 Highland	0	0	0	0	14	7.32	0.68	182.1	0.18	378.0		
3-May-16	2339 Garry Oak	0	0	0	0	13	7.31	0.48	197.4	0.20	410.0		
11-May-16	1566 Arbutus	0	0	0	0	13	7.12	0.70	61.1	0.06	129.3	0.03	0.046
11-May-16	Lot 51 Swallow	0	0	0	0	12	7.19	0.04	165.7	0.16	335.0	0.04	0.014
11-May-16	1270 Sea Dog	0	0	0	0	13	7.13	0.30	60.9	0.06	128.7	0.07	0.029
11-May-16	2315 Ida Lane	0	0	0	0	13	7.23	0.57	164.8	0.16	342.0	0.09	0.046
11-May-16	3500 Fairwinds	0	0	0	0	13	7.34	0.80	164.4	0.16	342.0	0.07	0.029
11-May-16	3383 Redden	0	0	0	0	13	7.35	0.74	168.0	0.17	350.0	0.07	0.052
11-May-16	2329 Chain	0	0	0	0	12	7.32	0.38	167.6	0.17	349.0	0.08	0.038
18-May-16	1358 Madrona	0	0	0	0	14	7.09	0.59	107.2	0.11	224.0		
18-May-16	3427 Tyee	0	0	0	0	15	7.30	0.51	163.3	0.16	340.0		
18-May-16	NB Elementary			0	0	11	7.20	1.28	153.8	0.15	321.0		
18-May-16	3730 Fairwinds	0	0	0	0	14	7.30	0.82	164.4	0.16	343.0		
18-May-16	3541 Shelby	0	0	0	0	13	7.31	0.87	163.8	0.16	343.0		
18-May-16	Florence & Anchor	0	0	0	0	14	7.36	0.62	165.1	0.16	344.0		
25-May-16	1565 Stonelake			0	0	14	7.22	0.63	78.5	0.08	165.0		
25-May-16	1639 Marina	0	0	0	0	14	7.21	0.65	62.0	0.06	131.0		
25-May-16	2454 Armstrong			0	0	13	7.27	0.50	95.8	0.09	201.5		
25-May-16	3465 Cambridge	0	0	0	0	13	7.28	0.85	157.5	0.16	328.0		
25-May-16	2339 Garry Oak			0	0	12	7.38	0.97	153.4	0.15	320.0		
30-May-16	1566 Arbutus			0	0	14	7.47	0.27	47.8	0.05	101.4		
30-May-16	1270 Sea Dog			0	0	16	7.33	0.04	152.7	0.15	318.0		
30-May-16	2315 Ida Lane			0	0	16	7.18	0.42	129.3	0.13	271.0		
30-May-16	3465 Cambridge	0	0	0	0	15	7.32	0.79	114.3	0.11	241.0		
30-May-16	3500 Fairwinds			0	0	14	7.31	0.84	115.1	0.11	243.0		
30-May-16	2329 Chain Way			0	0	14	6.97	0.33	155.3	0.15	323.0		
	Average	0	0	0	0	13.5	7.3	0.58	134.5	0.1	280.4	0.06	0.036
	Maximum	0	0	0	0	16	7.47	1.28	197.4	0.2	410	0.09	0.052
	Minimum	0	0	0	0	11	6.97	0.04	47.8	0.05	101.4	0.03	0.014

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 Bay Peninsula Water Analysis - 2016 Monthly Report



Date	Sample Location (Address)	Health Department		In-House									
		E. coli *	Total Coliform *	E.coli *	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-Apr-16	1358 Madrona	0	0	0	0	10	7.54	0.74	181.4	0.18	377.0	0.00	0.078
5-Apr-16	3427 Tyee	0	0	0	0	11	7.36	0.46	202.5	0.20	422.0	0.10	0.015
5-Apr-16	1270 Sea Dog	0	0	0	0	10	7.39	0.75	191.0	0.19	396.0	0.07	0.042
5-Apr-16	2315 Ida Lane	0	0	0	0	10	7.44	0.65	207.2	0.21	432.0	0.11	0.020
5-Apr-16	3500 Fairwinds	0	0	0	0	10	7.42	1.17	203.0	0.20	420.0	0.28	0.096
5-Apr-16	1996 Highland	0	0	0	0	10	7.45	0.65	203.1	0.20	422.0	0.03	0.022
5-Apr-16	Florence & Anchor	0	0	0	0	10	7.45	0.96	205.0	0.20	423.0	0.09	0.017
13-Apr-16	1565 Stonelake	0	0	0	0	11	7.66	0.77	186.8	0.19	389.0		
13-Apr-16	2359 Higginson	0	0	0	0	10	7.63	0.35	206.0	0.21	423.0		
13-Apr-16	2454 Armstrong	0	0	0	0	10	7.50	0.85	205.0	0.20	426.0		
13-Apr-16	Lot 54 Evanshire	0	0	0	0	11	7.51	1.11	203.0	0.20	420.0		
13-Apr-16	3383 Redden	0	0	0	0	11	7.53	0.91	202.7	0.20	421.0		
13-Apr-16	2339 Garry Oak	0	0	0	0	10	7.46	1.17	203.0	0.20	421.0		
20-Apr-16	1566 Arbutus	0	0	0	0	11	7.50	0.83	186.6	0.19	388.0		
20-Apr-16	Lot 51 Swallow	0	0	0	0	10	7.38	0.07	204.3	0.20	423.0		
20-Apr-16	NB Elementary			0	0	10	7.34	1.56	205.0	0.20	423.0		
20-Apr-16	3730 Fairwinds	0	0	0	0	12	7.47	0.98	204.1	0.20	424.0		
20-Apr-16	3451 Shelby	0	0	0	0	11	7.50	1.03	204.0	0.24	424.0		
20-Apr-16	2329 Chain	0	0	0	0	10	7.45	0.51	204.7	0.20	424.0		
26-Apr-16	1358 Madrona			0	0	12	7.61	0.83	182.9	0.18	380.0		
26-Apr-16	1639 Marina	0	0	0	0	11	7.40	0.87	205.1	0.20	426.0		
26-Apr-16	2315 Ida Lane			0	0	12	7.40	0.53	207.0	0.21	429.0		
26-Apr-16	3465 Cambridge	0	0	0	0	11	7.42	0.88	203.3	0.20	421.0		
26-Apr-16	Florence & Anchor			0	0	12	7.38	0.92	205.0	0.20	425.0		
	Average	0	0	0	0	10.7	7.5	0.81	200.5	0.2	415.8	0.10	0.041
	Maximum	0	0	0	0	12	7.66	1.56	207.2	0.24	432	0.28	0.096
	Minimum	0	0	0	0	10	7.34	0.07	181.4	0.18	377	0	0.015

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 Bay Peninsula Water Analysis - 2016 Monthly Report



Date	Sample Location (Address)	Health Department		In-House									
		E. coli *	Total Coliform *	E.coli *	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-Mar-16	1565 Stonelake	0	0	0	0	9	7.31	0.78	193.6	0.19	402.0	0.00	0.079
2-Mar-16	3427 Tye	0	0	0	0	8	7.25	0.54	200.3	0.20	414.0	0.09	0.023
2-Mar-16	1270 Sea Dog	0	0	0	0	8	7.51	0.69	186.7	0.19	388.0	0.41	0.180
2-Mar-16	2315 Ida Lane	0	0	0	0	9	7.44	0.81	199.7	0.20	414.0	0.10	0.030
2-Mar-16	3500 Fairwinds	0	0	0	0	9	7.42	1.02	199.0	0.20	414.0	0.10	0.039
2-Mar-16	1996 Highland	0	0	0	0	9	7.34	0.50	198.9	0.20	413.0	0.03	0.013
2-Mar-16	2339 Garry Oak	0	0	0	0	9	7.34	1.42	200.0	0.20	416.0	0.10	0.028
9-Mar-16	1566 Arbutus	0	0	0	0	9	7.66	0.89	185.8	0.19	386.0		
9-Mar-16	2359 Higginson	0	0	0	0	8	7.71	0.46	184.1	0.18	381.0		
9-Mar-16	2454 Armstrong	0	0	0	0	8	7.45	1.35	202.9	0.20	421.0		
9-Mar-16	Lot 54 Evanshire	0	0	0	0	9	7.52	1.34	201.0	0.20	416.0		
9-Mar-16	3383 Redden	0	0	0	0	9	7.51	1.12	202.0	0.20	419.0		
9-Mar-16	2329 Chain	0	0	0	0	8	7.47	0.42	205.0	0.20	425.0		
16-Mar-16	1358 Madrona	0	0	0	0	8	7.75	0.60	188.1	0.19	389.0		
16-Mar-16	Lot 51 Swallow	0	0	0	0	8	7.53	0.03	200.1	0.20	419.0		
16-Mar-16	NB Elementary			0	0	10	7.44	1.57	201.0	0.20	417.0		
16-Mar-16	3730 Fairwinds	0	0	0	0	9	7.48	1.14	201.7	0.20	419.0		
16-Mar-16	3541 Shelby	0	0	0	0	9	7.48	1.13	201.0	0.20	416.0		
16-Mar-16	Florence & Anchor	0	0	0	0	8	7.56	0.38	206.1	0.21	428.0		
23-Mar-16	1565 Stonelake			0	0	9	7.59	0.82	187.3	0.19	390.0		
23-Mar-16	1639 Marina	0	0	0	0	9	7.43	1.14	204.0	0.20	422.0		
23-Mar-16	2315 Ida Lane			0	0	10	7.45	1.05	203.9	0.20	423.0		
23-Mar-16	3465 Cambridge	0	0	0	0	9	7.46	1.07	202.0	0.20	417.0		
23-Mar-16	2339 Garry Oak			0	0	9	7.45	0.94	203.5	0.20	421.0		
30-Mar-16	1566 Arbutus			0	0	9	7.36	1.09	188.3	0.19	392.0		
30-Mar-16	Lot 51 Swallow			0	0	8	7.25	0.05	200.0	0.20	416.0		
30-Mar-16	2454 Armstrong			0	0	8	7.27	1.11	203.2	0.20	422.0		
30-Mar-16	3383 Redden			0	0	9	7.30	0.86	200.0	0.20	414.0		
30-Mar-16	2329 Chain			0	0	9	7.35	0.68	202.0	0.20	420.0		
	Average	0	0	0	0	8.7	7.5	0.86	198.3	0.2	411.5	0.12	0.056
	Maximum	0	0	0	0	10	7.75	1.57	206.1	0.21	428	0.41	0.18
	Minimum	0	0	0	0	8	7.25	0.03	184.1	0.18	381	0	0.013

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 Bay Peninsula Water Analysis - 2016 Monthly Report



Date	Sample Location (Address)	Health Department		In-House									
		E. coli *	Total Coliform *	E.coli *	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-Feb-16	1358 Madrona	0	0	0	0	9	7.31	0.39	197.9	0.20	410.0	0.01	0.085
3-Feb-16	3427 Tyee	0	0	0	0	8	7.23	0.47	210.9	0.21	438.0	0.07	0.035
3-Feb-16	1270 Sea Dog	0	0	0	0	8	7.25	0.66	209.0	0.21	434.0	0.10	0.035
3-Feb-16	2454 Armstrong	0	0	0	0	8	7.32	0.85	214.5	0.21	444.0	0.14	0.058
3-Feb-16	3500 Fairwinds	0	0	0	0	9	7.38	1.06	211.0	0.21	438.0	0.08	0.027
3-Feb-16	1996 Highland	0	0	0	0	9	7.29	0.52	210.7	0.21	437.0	0.04	0.008
3-Feb-16	Florence & Anchor	0	0	0	0	7	7.28	1.21	213.0	0.21	441.0	0.12	0.042
10-Feb-16	1565 Stonelake	0	0	0	0	9	7.35	0.53	196.7	0.20	407.0		
10-Feb-16	2359 Higginson	0	0	0	0	8	7.44	0.85	214.9	0.21	445.0		
10-Feb-16	2315 Ida Lane	0	0	0	0	10	7.48	0.95	217.0	0.22	438.0		
10-Feb-16	Lot 54 Evanshire	0	0	0	0	9	7.53	1.17	213.8	0.21	443.0		
10-Feb-16	3383 Redden	0	0	0	0	8	7.47	0.88	213.0	0.21	442.0		
10-Feb-16	2339 Garry Oak	0	0	0	0	9	7.45	1.19	213.9	0.21	444.0		
17-Feb-16	1566 Arbutus	0	0	0	0	8	7.45	0.48	194.4	0.20	404.0		
17-Feb-16	Lot 51 Swallow	0	0	0	0	7	7.44	0.02	214.5	0.21	444.0		
17-Feb-16	NB Elementry			0	0	9.5	7.30	1.66	214.5	0.21	445.0		
17-Feb-16	3730 Fairwinds	0	0	0	0	8	7.38	1.03	211.6	0.21	439.0		
17-Feb-16	3541 Shelby	0	0	0	0	8.5	7.31	1.05	211.0	0.21	435.0		
17-Feb-16	2329 Chain Way	0	0	0	0	8	7.32	0.47	211.0	0.21	438.0		
24-Feb-16	1358 Madrona			0	0	9	7.56	0.59	196.5	0.20	408.0		
24-Feb-16	1639 Marina	0	0	0	0	8	7.45	0.97	201.1	0.20	420.0		
24-Feb-16	2454 Armstrong			0	0	8	7.39	0.93	204.0	0.20	420.0		
24-Feb-16	3465 Cambridge	0	0	0	0	9	7.45	0.93	203.7	0.20	423.0		
24-Feb-16	Florence & Anchor			0	0	7	7.43	0.34	212.0	0.21	439.0		
	Average	0	0	0	0	8.4	7.4	0.80	208.8	0.2	432.3	0.08	0.041
	Maximum	0	0	0	0	10	7.56	1.66	217	0.22	445	0.14	0.085
	Minimum	0	0	0	0	7	7.23	0.02	194.4	0.2	404	0.01	0.008

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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 Bay Peninsula Water Analysis - 2016 Monthly Report



Date	Sample Location (Address)	Health Department		In-House									
		E. coli *	Total Coliform *	E.coli *	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-16	1566 Arbutus	0	0	0	0	9	7.19	1.09	199.6	0.20	408.0	0.05	0.010
5-Jan-16	3427 Tyee	0	0	0	0	8	7.12	0.56	204.6	0.20	423.0	0.09	0.031
5-Jan-16	1270 Sea Dog	0	0	0	0	8	7.13	0.99	205.0	0.20	427.0	0.13	0.032
5-Jan-16	2315 Ida Lane	0	0	0	0	11	7.32	1.11	210.0	0.21	435.0	0.10	0.034
5-Jan-16	3500 Fairwinds	0	0	0	0	9	7.28	1.12	187.4	0.19	390.0	0.08	0.027
5-Jan-16	1996 Highland	0	0	0	0	9	7.17	0.64	208.4	0.21	431.0	0.06	0.030
5-Jan-16	2329 Chain	0	0	0	0	8	7.24	0.45	204.0	0.20	422.0	0.06	0.023
13-Jan-16	1358 Madrona	0	0	0	0	8	7.29	0.49	205.0	0.20	409.0		
13-Jan-16	2359 Higginson	0	0	0	0	7	7.38	0.59	200.4	0.20	417.0		
13-Jan-16	2454 Armstrong	0	0	0	0	8	7.29	0.86	214.0	0.21	442.0		
13-Jan-16	Lot 54 Evanshire	0	0	0	0	8	7.32	1.01	212.5	0.21	441.0		
13-Jan-16	3383 Redden	0	0	0	0	7	7.35	0.82	215.0	0.21	445.0		
13-Jan-16	2940 Fairwinds	0	0	0	0	6	7.33	0.96	213.7	0.21	433.0		
20-Jan-16	1565 Stonelake	0	0	0	0	9	7.50	0.39	195.7	0.20	406.0		
20-Jan-16	1961 Harlequin	0	0	0	0	7	7.34	0.15	214.3	0.21	444.0		
20-Jan-16	NB Elementary			0	0	10	7.32	1.47	214.0	0.21	444.0		
20-Jan-16	3730 Fairwinds	0	0	0	0	8	7.36	0.97	211.0	0.21	437.0		
20-Jan-16	3541 Shelby	0	0	0	0	8	7.40	1.00	210.7	0.21	437.0		
20-Jan-16	2339 Garry Oak	0	0	0	0	9	7.31	1.40	211.0	0.21	439.0		
26-Jan-16	1566 Arbutus			0	0	8	7.46	0.62	194.2	0.19	402.0		
26-Jan-16	1639 Marina	0	0	0	0	8	7.35	1.06	210.5	0.21	439.0		
26-Jan-16	2315 Ida Lane			0	0	9	7.39	0.71	215.0	0.21	444.0		
26-Jan-16	3465 Cambridge	0	0	0	0	8	7.42	0.99	210.5	0.21	437.0		
26-Jan-16	2329 Chain			0	0	7	7.36	0.44	211.0	0.21	437.0		
	Average	0	0	0	0	8.2	7.3	0.83	207.4	0.2	428.7	0.08	0.027
	Maximum	0	0	0	0	11	7.5	1.47	215	0.21	445	0.13	0.034
	Minimum	0	0	0	0	6	7.12	0.15	187.4	0.19	390	0.05	0.01

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

Regional District of Nanaimo - Water Services Department

Water Treatment Plant Water Analysis - Daily Sampling 2016

January

Date	Operator	Influent (Raw) Water				Chemicals Added			Effluent (Treated) Water				Treated Water Analysis from third party laboratories								
		Total Iron (mg/L)	Manganese (mg/L)	Ammonia (mg/L)	Free Chlorine Residual (mg/L)	Total Chlorine Residual (mg/L)	Chlorine Does Rate (mg/L)	Turbidity NTU	pH	Free Chlorine Residual (mg/L)	Total Chlorine Residual (mg/L)	Total Iron (mg/L)	Manganese (mg/L)	Ammonia (mg/L)	Total Chloramines (mg/L)	Total Iron (mg/L)	Manganese (mg/L)	Ammonia (mg/L)	Free Chlorine Residual (mg/L)	Total Chlorine Residual (mg/L)	
4-Jan-16	SMP	0.55	0.274	1.19	2.60	5.50	12.64	0.080	7.26	1.50	1.88	0.08	0.037	0.00							
11-Jan-16	LJ	0.54	0.265	1.16	2.79	4.50	14.25	0.116	7.30	1.27	1.73	0.08	0.031	0.00							
18-Jan-16	LJ	0.52	0.250	1.17	2.78	6.50	13.72	0.001	7.26	1.40	1.64	0.10	0.030	0.00	0.10	0.08	0.07	1.50	1.70		
25-Jan-16	GR	0.56	0.251	1.18	2.60	6.50	13.53	0.036	7.18	1.17	1.98	0.09	0.140	0.00							
Average		0.54	0.260	1.175	2.69	5.78	13.54	0.058	7.250	1.335	1.808	0.088	0.060	0.000	0.100	0.079	0.066	1.500	1.700		
Maximum		0.56	0.274	1.190	2.79	6.60	14.25	0.116	7.300	1.500	1.980	0.100	0.140	0.000	0.100	0.079	0.066	1.500	1.700		
Minimum		0.52	0.250	1.160	2.60	4.50	12.64	0.001	7.180	1.170	1.640	0.080	0.030	0.000	0.100	0.079	0.066	1.500	1.700		

Iron Removal %	95.25
Mang Removal %	98.453
Ammonia % Removal	100.00

** Blank cells above represent samples not taken or water treatment plant offline



Regional District of Nanaimo - Water Services Department

Water Treatment Plant Water Analysis - Daily Sampling 2016

February

Date	Operator	Influent (Raw) Water			Chemicals Added			Effluent (Treated) Water					Analysis from third party laboratories						
		Total Iron (mg/L)	Manganese (mg/L)	Ammonia (mg/L)	Free Chlorine Residual (mg/L)	Total Chlorine Residual (mg/L)	Chlorine Does Rate (mg/L)	Turbidity NTU	pH	Free Chlorine Residual (mg/L)	Total Chlorine Residual (mg/L)	Total Iron (mg/L)	Manganese (mg/L)	Ammonia (mg/L)	Reclaim Pump Running yes/no	Total Chloramine (mg/L)	Total Iron (mg/L)	Manganese (mg/L)	Ammonia (mg/L)
3-Feb-16	GR	0.58	0.258	1.23	2.86	7.80	13.73	0.013	7.28	1.53	1.85	0.110	0.050	0.00	no				
9-Feb-16	BL	0.51	0.199	1.32	2.60	7.00	13.78	0.100	7.24	1.22	2.09	0.110	0.021	0.00	no				
15-Feb-16	LJ	0.56	0.241	1.27	2.79	6.10	13.91	0.092	7.16	1.48	1.79	0.090	0.045	0.00	no	<0.10	0.093	0.0203	0.012
23-Feb-16	DW	0.53	0.248	1.25	2.30	4.70	13.91	0.160	7.28	1.42	2.20	0.160	0.064	0.00	yes				
Average		0.55	0.237	1.268	2.64	6.40	13.83	0.091	7.240	1.413	1.983	0.118	0.045	0.000		#DIV/0!	0.093	0.0203	0.012
Maximum		0.58	0.258	1.320	2.86	7.80	13.91	0.160	7.280	1.530	2.200	0.160	0.064	0.000		0.000	0.093	0.0203	
Minimum		0.51	0.199	1.230	2.30	4.70	13.73	0.013	7.160	1.220	1.790	0.090	0.021	0.000		0.000	0.093	0.0203	

Iron Removal %	93.60
Mang Removal %	98.936
Ammonia % Removal	100.00

** Blank cells above represent samples not taken or water treatment plant offline



Regional District of Nanaimo - Water Services Department

Water Treatment Plant Water Analysis - Daily Sampling 2016

March

Date	Operator	Influent (Raw) Water					Effluent (Treated) Water							Treated Water Analysis from third party laboratories									
		Total Iron (mg/L)	Manganese (mg/L)	Ammonia (mg/L)	Free Chlorine Residual (mg/L)	Total Chlorine Residual (mg/L)	Chlorine Doses Rate (mg/L)	Turbidity NTU	pH	Free Chlorine Residual (mg/L)	Total Chlorine Residual (mg/L)	Total Iron (mg/L)	Manganese (mg/L)	Ammonia (mg/L)	Reclaim Pump Running yes/no	Ammonia (mg/L)	Total Chloramine (mg/L)	Total Iron (mg/L)	Manganese (mg/L)	Ammonia (mg/L)	Free Chlorine Residual (mg/L)	Total Chlorine Residual (mg/L)	
1-Mar-16	LJ	0.56	0.246	1.30	2.73	5.40	13.72	0.085	7.28	1.57	1.74	0.130	0.039	0.015									
9-Mar-16	GR	0.50	0.249	1.27	2.50	6.40	12.76	0.083	7.26	1.73	2.20	0.070	0.016	0.023	no								
14-Mar-16	GR	0.53	0.281	1.33	3.20	7.30	13.46	0.095	7.49	1.64	1.89	0.080	0.057	0.012	no	0.10		0.069	0.0163	0.010	1.50	1.60	
22-Mar-16	DW	0.61	0.263	1.36	2.20	4.00	12.42	0.100	7.36	1.26	2.20	0.100	0.012	0.000	no								
29-Mar-16	LJ	0.58	0.229	1.12	2.72	5.30	12.58	0.094	7.29	1.39	1.48	0.120	0.026	0.000	no								

Average	0.56	0.254	1.276	2.67	5.68	12.99	0.091	7.336	1.518	1.902	0.100	0.030	0.010		0.100	0.069	0.0163	0.010	1.500	1.600
Maximum	0.61	0.281	1.360	3.20	7.30	13.72	0.100	7.490	1.730	2.200	0.130	0.057	0.023		0.100	0.069	0.0163	0.0097	1.5000	1.6000
Minimum	0.50	0.229	1.120	2.20	4.00	12.42	0.083	7.260	1.260	1.480	0.070	0.012	0.000		0.100	0.069	0.0163	0.0097	1.5000	1.6000

Iron Removal %	94.44
Mang Removal %	99.239
Ammonia % Removal	98.72

** Blank cells above represent samples not taken or water treatment plant offline



Regional District of Nanaimo - Water Services Department

Water Treatment Plant Water Analysis - Daily Sampling 2016

April

Date	Operator	Influent (Raw) Water					Effluent (Treated) Water										Treated Water Analysis from third party laboratories					
		Total Iron (mg/L)	Manganese (mg/L)	Ammonia (mg/L)	Free Chlorine Residual (mg/L)	Total Chlorine Residual (mg/L)	Chlorine Doses Rate (mg/L)	Turbidity NTU	pH	Free Chlorine Residual (mg/L)	Total Chlorine Residual (mg/L)	Total Iron (mg/L)	Manganese (mg/L)	Ammonia (mg/L)	Reclaim Pump Running yes/no	Total Chloramine (mg/L)	Total Iron (mg/L)	Manganese (mg/L)	Ammonia (mg/L)	Free Chlorine Residual (mg/L)	Total Chlorine Residual (mg/L)	
5-Apr-16	RCS	0.56	0.273	1.28	2.10	5.30	13.31	0.221	7.22	1.70	2.20	0.160	0.076	0.000								
11-Apr-11	DW	0.53	0.236	1.28	2.40	5.10	13.10	0.180	7.20	1.78	2.14	0.190	0.046	0.000	no							
18-Apr-16	GR	0.56	0.259	0.96	2.90	6.90	12.76	0.263	7.17	1.86	2.20	0.100	0.027	0.000	YES	0.10	0.099	0.0239	0.022	1.50	1.80	
26-Apr-16	HD	0.47	0.260	1.31	2.50	6.10				1.47	2.20	0.160	0.068	0.000	no							
	Average	0.53	0.257	1.208	2.48	5.85	13.06	0.221	7.197	1.703	2.185	0.153	0.054	0.000		0.100	0.099	0.0239	0.022	1.500	1.800	
	Maximum	0.56	0.273	1.310	2.90	6.90	13.31	0.263	7.220	1.860	2.200	0.190	0.076	0.000	0.100	0.099	0.0239	0.0220	1.5000	1.8000		
	Minimum	0.47	0.236	0.960	2.10	5.10	12.76	0.180	7.170	1.470	2.140	0.100	0.027	0.000	0.100	0.099	0.0239	0.0220	1.5000	1.8000		

** Blank cells above represent samples not taken or water treatment plant offline

Iron Removal %	Mang Removal %	Ammonia % Removal
91.92	98.606	100.00



Regional District of Nanaimo - Water Services Department

Water Treatment Plant Water Analysis - Daily Sampling 2016

May

Date	Operator	Influent (Raw) Water					Chemicals Added					Effluent (Treated) Water							Treated Water Analysis from third party laboratories				
		Total Iron (mg/L)	Manganese (mg/L)	Ammonia (mg/L)	Free Chlorine Residual (mg/L)	Total Chlorine Residual (mg/L)	Chlorine Doses Rate (mg/L)	Turbidity NTU	pH	Free Chlorine Residual (mg/L)	Total Chlorine Residual (mg/L)	Total Iron (mg/L)	Manganese (mg/L)	Ammonia (mg/L)	Reclaim Pump Running yes/no	Total Chloramines (mg/L)	Total Iron (mg/L)	Manganese (mg/L)	Ammonia (mg/L)	Free Chlorine Residual (mg/L)	Total Chlorine Residual (mg/L)		
2-May-16	GR	0.54	0.251	1.36	3.10	6.90	12.90	0.160	7.08	1.81	2.20	0.170	0.038	0.011	no								
9-May-16	LJ				1.90	3.00	13.20	0.137	7.05	1.91	2.04			no									
16-May-16	MG/GR	0.56	0.289	1.35	3.00	5.00	13.44	0.180	7.00	1.54	1.99	0.070	0.029	0.016	no	0.10	0.173	0.0443	1.50	1.80			
24-May-16	LJ	0.61	0.284	1.36	2.83	5.10	13.32	0.080	6.98	1.68	2.13	0.080	0.024	0.000	no								
31-May-16	LJ	0.54	0.226	1.27	2.90	2.90	13.60	0.070	7.37	1.46	2.11	0.120	0.016	0.000	no								
Average		0.56	0.263	1.335	2.75	4.58	13.29	0.125	7.096	1.680	2.094	0.110	0.027	0.007		0.100	0.173	0.0443	1.500	1.800			
Maximum		0.61	0.289	1.360	3.10	6.90	13.60	0.180	7.370	1.910	2.200	0.170	0.038	0.016		0.100	0.173	0.0443	1.5000	1.8000			
Minimum		0.54	0.226	1.270	1.90	2.90	12.90	0.070	6.980	1.460	1.990	0.070	0.016	0.000		0.100	0.173	0.0443	1.5000	1.8000			

Iron Removal %	Mang Removal %	Ammonia % Removal
93.81	99.298	99.10

** Blank cells above represent samples not taken or water treatment plant offline



Regional District of Nanaimo - Water Services Department

Water Treatment Plant Water Analysis - Daily Sampling 2016

June

Date	Operator	Influent (Raw) Water					Effluent (Treated) Water							Treated Water Analysis from third party laboratories								
		Total Iron (mg/L)	Manganese (mg/L)	Ammonia (mg/L)	Free Chlorine Residual (mg/L)	Total Chlorine Residual (mg/L)	Chlorine Doses Rate (mg/L)	Turbidity NTU	pH	Free Chlorine Residual (mg/L)	Total Chlorine Residual (mg/L)	Total Iron (mg/L)	Manganese (mg/L)	Ammonia (mg/L)	Reclaim Pump Running yes/no	Total Chloramine (mg/L)	Total Iron (mg/L)	Manganese (mg/L)	Ammonia (mg/L)	Free Chlorine Residual (mg/L)	Total Chlorine Residual (mg/L)	
6-Jun-16	MG/GR	0.52	0.248	1.39	2.50	4.60	14.30	0.068	7.44	1.35	2.20	0.070	0.018	0.000	No							
14-Jun-16	LJ	0.54	0.236	1.36	2.84	5.20	13.58	0.165	7.31	1.86	2.15	0.170	0.055	0.000		0.20	0.185	0.0465	0.007	1.70	2.20	
20-Jun-16	HD																					
24-Jun-16	GR	0.55	0.252	1.36	2.40	6.30	12.67	0.201	7.18	1.51	2.11	0.200	0.092	0.018	No							
27-Jun-16	GR	0.54	0.247	1.37	2.40	6.60	12.96	0.200	7.16	1.57	2.19	0.190	0.040	0.016	No							
Average		0.54	0.246	1.370	2.54	5.68	13.38	0.159	7.273	1.573	2.163	0.158	0.051	0.009		0.200	0.185	0.0465	0.007	1.700	2.200	
Maximum		0.55	0.252	1.390	2.84	6.60	14.30	0.201	7.440	1.860	2.200	0.200	0.092	0.018		0.200	0.185	0.0465	0.0072	1.7000	2.2000	
Minimum		0.52	0.236	1.360	2.40	4.60	12.67	0.068	7.160	1.350	2.110	0.070	0.018	0.000		0.200	0.185	0.0465	0.0072	1.7000	2.2000	

Iron Removal %	Mang Removal %	Ammonia % Removal
91.53	98.741	98.84

** Blank cells above represent samples not taken or water treatment plant offline



Regional District of Nanaimo - Water Services Department

Water Treatment Plant Water Analysis - Daily Sampling 2016

July

Date	Operator	Influent (Raw) Water					Effluent (Treated) Water								Treated Water Analysis from third party laboratories						
		Total Iron (mg/L)	Manganese (mg/L)	Ammonia (mg/L)	Free Chlorine Residual (mg/L)	Total Chlorine Residual (mg/L)	Chlorine Doses Rate (mg/L)	Turbidity NTU	pH	Free Chlorine Residual (mg/L)	Total Chlorine Residual (mg/L)	Total Iron (mg/L)	Manganese (mg/L)	Ammonia (mg/L)	Reclaim Pump Running yes/no	Total Chloramine (mg/L)	Total Iron (mg/L)	Manganese (mg/L)	Ammonia (mg/L)	Free Chlorine Residual (mg/L)	Total Chlorine Residual (mg/L)
4-Jul-16	bl	0.56	0.246	1.38	2.40	5.30	14.52	0.180	7.09	1.91	2.60	0.080	0.082	0.012	NO						
12-Jul-16	GR/LJ	0.55	0.234	1.41	3.40	6.80	14.20	0.150	7.00	1.48	2.09	0.190	0.038	0.000	NO						
18-Jul-16	LJ/GR	0.54	0.238	1.39	2.92	4.80	14.59	0.240	6.93	2.03	2.20	0.280	0.096	0.000	NO						
25-Jul-16	GR	0.54	0.261	1.37	3.00	5.00	13.70	0.153	6.90	2.12	2.20	0.110	0.030	0.017	Yes	<0.20	0.131	0.0340	0.011	1.70	2.20
Average		0.55	0.245	1.388	2.93	5.48	14.25	0.181	6.980	1.885	2.273	0.165	0.062	0.007		#DIV/0!	0.131	0.0340	0.011		
Maximum		0.56	0.261	1.410	3.40	6.80	14.59	0.240	7.090	2.120	2.600	0.280	0.096	0.017		0.000	0.131	0.0340			
Minimum		0.54	0.234	1.370	2.40	4.80	13.70	0.150	6.900	1.480	2.090	0.080	0.030	0.000		0.000	0.131	0.0340			

Iron Removal %	90.97
Mang Removal %	98.495
Ammonia % Removal	98.99

** Blank cells above represent samples not taken or water treatment plant offline



Regional District of Nanaimo - Water Services Department
Water Treatment Plant Water Analysis - Daily Sampling 2016

August

Date	Operator	Influent (Raw) Water					Chemicals Added					Effluent (Treated) Water								Analysis from third party laboratories				
		Total Iron (mg/L)	Manganese (mg/L)	Ammonia (mg/L)	Free Chlorine Residual (mg/L)	Total Chlorine Residual (mg/L)	Chlorine Doses Rate (mg/L)	Turbidity NTU	pH	Free Chlorine Residual (mg/L)	Total Chlorine Residual (mg/L)	Total Iron (mg/L)	Manganese (mg/L)	Ammonia (mg/L)	Reclaim Pump Running yes/no	Total Chloramine (mg/L)	Total Iron (mg/L)	Manganese (mg/L)	Ammonia (mg/L)	Free Chlorine Residual (mg/L)	Total Chlorine Residual (mg/L)			
2-Aug-16	MG/LJ	0.56	0.236	1.34	3.50	7.40	12.23	0.110	6.84	1.73	0.140	0.037	0.000	yes										
8-Aug-16	SMP	0.51	0.222	1.36	4.10	8.80		0.099	7.42	1.83	0.120	0.026	0.027	yes										
15-Aug-16	DW/HD	0.55	0.276	1.39	2.80	7.60	12.86	0.070	7.41	1.37	0.100	0.049	0.000	no										
22-Aug-16	SMP	0.56	0.285	1.33	3.30	6.90	12.90	0.069	7.41	1.59	0.070	0.047	0.000	no	0.10	0.074	0.0162	0.046	1.30	1.60				
29-Aug-16	DW/HD	0.56	0.223	1.37	3.10	3.40	12.30	0.060	7.42	2.11	0.080	0.032	0.000	no										
Average		0.55	0.248	1.358	3.36	6.82	12.57	0.082	7.300	1.726	0.102	0.038	0.005		0.100	0.074	0.0162	0.046						
Maximum		0.56	0.285	1.390	4.10	8.80	12.90	0.110	7.420	2.110	0.140	0.049	0.027		0.100	0.074	0.0162							
Minimum		0.51	0.222	1.330	2.80	3.40	12.23	0.060	6.840	1.370	0.070	0.026	0.000		0.100	0.074	0.0162							

Iron Removal %	94.41
Mang Removal %	99.051
Ammonia % Removal	99.27

** Blank cells above represent samples not taken or water treatment plant offline



Regional District of Nanaimo - Water Services Department

Water Treatment Plant Water Analysis - Daily Sampling 2016

September

Date	Operator	Influent (Raw) Water				Chemicals Added				Effluent (Treated) Water				Treated Water Analysis from third party laboratories										
		Total Iron (mg/L)	Manganese (mg/L)	Ammonia (mg/L)	Free Chlorine Residual (mg/L)	Total Chlorine Residual (mg/L)	Chlorine Dose Rate (mg/L)	Bisulphite Dose (mg/L)	Turbidity NTU	pH	Free Chlorine Residual (mg/L)	Total Chlorine Residual (mg/L)	Total Iron (mg/L)	Manganese (mg/L)	Ammonia (mg/L)	Reclaim Pump Running yes/no	Total Chloramines (mg/L)	Total Iron (mg/L)	Manganese (mg/L)	Ammonia (mg/L)	Free Chlorine Residual (mg/L)	Total Chlorine Residual (mg/L)		
6-Sep-16	SP	0.53	0.213	1.35																				
12-Sep-16	LJ	0.56	0.252	1.36	2.82	13.36	0.00	0.090	7.40	1.55	2.00	0.110	0.043	0.000	No									
19-Sep-16	GR	0.52	0.235	1.33	3.10	12.53	0.00	0.131	7.43	2.01	2.20	0.080	0.045	0.000	Yes									
26-Sep-16	GR/HD	0.56	0.251	1.29	3.00	12.77	0.00	0.169	7.43	1.98	2.20	0.140	0.029	0.018	Yes	<0.20	0.143	0.0360	0.067	1.70	2.10			

Iron Removal %	93.63
Mang Removal %	99.114
Ammonia % Removal	99.40

** Blank cells above represent samples not taken or water treatment plant offline

Average	0.54	0.238	1.333	2.97	12.89	0.00	0.130	7.420	1.847	2.133	0.118	0.037	0.005			#DW/OI	0.143	0.0360	0.067				
Maximum	0.56	0.252	1.360	3.10	13.36	0.00	0.169	7.430	2.010	2.200	0.140	0.045	0.018				0.143	0.0360					
Minimum	0.52	0.213	1.290	2.82	12.53	0.00	0.090	7.400	1.550	2.000	0.080	0.029	0.000				0.143	0.0360	0.067				

Regional District of Nanaimo - Water Services Department

Water Treatment Plant Water Analysis - Daily Sampling 2016

October

Date	Operator	Influent (Raw) Water					Effluent (Treated) Water								Treated Water Analysis from third party laboratories							
		Total Iron (mg/L)	Manganese (mg/L)	Ammonia (mg/L)	Free Chlorine Residual (mg/L)	Total Chlorine Residual (mg/L)	Chlorine Doses Rate (mg/L)	Turbidity NTU	pH	Free Chlorine Residual (mg/L)	Total Chlorine Residual (mg/L)	Total Iron (mg/L)	Manganese (mg/L)	Ammonia (mg/L)	Reclaim Pump Running yes/no	Total Chloramines (mg/L)	Total Iron (mg/L)	Manganese (mg/L)	Ammonia (mg/L)	Free Chlorine Residual (mg/L)	Total Chlorine Residual (mg/L)	
3-Oct-16	GR	0.53	0.229	1.28	2.50	7.20	12.10	0.184	7.42	1.64	2.20	0.160	0.038	0.015	Y							
11-Oct-16	GR/LJ	0.51	0.235	1.32	2.50	6.50	14.30	0.070	7.41	1.65	2.15	0.070	0.007	0.000	N							
17-Oct-16	GR/HD	0.52	0.265	1.34	3.40	5.70	13.65	0.157	7.42	1.69	<2.20	0.160	0.075	0.019	N							
24-Oct-16	DW	0.59	0.277	1.12	2.60	4.90	12.20	0.13	7.42	1.61	2.18	0.150	0.038	0.000	N	0.10	0.138	0.0326	0.029	1.30	1.60	
Average		0.54	0.252	1.265	2.75	6.08	13.06	0.135	7.418	1.648	2.177	0.135	0.040	0.009		0.100	0.138	0.0326	0.029			
Maximum		0.59	0.277	1.340	3.40	7.20	14.30	0.184	7.420	1.690	2.200	0.160	0.075	0.019		0.100	0.138	0.0326				
Minimum		0.51	0.229	1.120	2.50	4.90	12.10	0.070	7.410	1.610	2.150	0.070	0.007	0.000		0.100	0.138	0.0326				

Iron Removal %	92.74
Mang Removal %	99.007
Ammonia % Removal	98.92

** Blank cells above represent samples not taken or water treatment plant offline

Regional District of Nanaimo - Water Services Department

Water Treatment Plant Water Analysis - Daily Sampling 2016

November

Date	Operator	Influent (Raw) Water					Effluent (Treated) Water										Treated Water Analysis from third party laboratories					
		Total Iron (mg/L)	Manganese (mg/L)	Ammonia (mg/L)	Free Chlorine Residual (mg/L)	Total Chlorine Residual (mg/L)	Chlorine Doses Rate (mg/L)	Turbidity NTU	pH	Free Chlorine Residual (mg/L)	Total Chlorine Residual (mg/L)	Total Iron (mg/L)	Manganese (mg/L)	Ammonia (mg/L)	Reclaim Pump Running yes/no	Total Chloramine (mg/L)	Total Iron (mg/L)	Manganese (mg/L)	Ammonia (mg/L)	Free Chlorine Residual (mg/L)	Total Chlorine Residual (mg/L)	
1-Nov-16	smp	0.59	0.271	1.32	2.30	6.70	13.36	0.190	7.40	1.64	2.10	0.120	0.048	0.000	no							
7-Nov-16	GR	0.53	0.257	1.24	2.67	6.70	12.39	0.144	7.43	1.89	2.20	0.130	0.063	0.004	yes							
14-Nov-16	LJ	0.57	0.230	1.17	2.70	3.80	13.74	0.140	7.42	1.77	2.19	0.120	0.068	0.000	no							
22-Nov-16	GR	0.58	0.243	1.30	3.80	7.10	11.78	0.644	7.44	1.80	2.20	0.240	0.117	0.000	Yes							
28-Nov-16	Gr	0.53	0.275	1.25	2.80	8.40	12.48	0.094	7.42	1.38	1.69	0.090	0.046	0.000	No	0.10	0.081	0.0229	0.063	1.20	1.50	
Average		0.56	0.255	1.256	2.85	6.54	12.75	0.242	7.422	1.696	2.076	0.140	0.068	0.001		0.100	0.081	0.0229	0.063			
Maximum		0.59	0.275	1.320	3.80	8.40	13.74	0.644	7.440	1.890	2.200	0.240	0.117	0.004		0.100	0.081	0.0229				
Minimum		0.53	0.230	1.170	2.30	3.80	11.78	0.094	7.400	1.380	1.690	0.090	0.046	0.000		0.100	0.081	0.0229				

Iron Removal %	92.16
Mang Removal %	98.254
Ammonia % Removal	99.90

** Blank cells above represent samples not taken or water treatment plant offline



Regional District of Nanaimo - Water Services Department

Water Treatment Plant Water Analysis - Daily Sampling 2016

December

Date	Operator	Influent (Raw) Water				Effluent (Treated) Water							Treated Water Analysis from third party laboratories									
		Total Iron (mg/L)	Manganese (mg/L)	Ammonia (mg/L)	Free Chlorine Residual (mg/L)	Total Chlorine Residual (mg/L)	Chlorine Doses Rate (mg/L)	Turbidity NTU	pH	Free Chlorine Residual (mg/L)	Total Chlorine Residual (mg/L)	Total Iron (mg/L)	Manganese (mg/L)	Ammonia (mg/L)	Reclaim Pump Running yes/no	Total Chloramines (mg/L)	Total Iron (mg/L)	Manganese (mg/L)	Ammonia (mg/L)	Free Chlorine Residual (mg/L)	Total Chlorine Residual (mg/L)	
5-Dec-16	GR	0.59	0.259	1.08	2.30	7.10	13.56	0.100	7.42	1.42	1.74	0.110	0.038	0.000	NO							
12-Dec-16	GR/LJ	0.55	0.260	1.13	2.53	7.20	14.76	0.100	7.42	1.32	1.62	0.090	0.031	0.000	NO							
19-Dec-16	LJ/GR	0.54	0.234	1.34	2.76	5.90	14.31	0.190	7.44	1.97	2.20	0.150	0.054	0.000		0.10	0.091	0.0240	0.064	0.80	1.00	
28-Dec-16	GR	0.51	0.246	1.34	2.30	6.40	14.27	0.088	7.42	1.35	1.81	0.130	0.044	0.008	No							
Average		0.55	0.250	1.223	2.47	6.65	14.23	0.120	7.425	1.515	1.843	0.120	0.042	0.002		0.100	0.091	0.0240	0.064			
Maximum		0.59	0.260	1.340	2.76	7.20	14.76	0.190	7.440	1.970	2.200	0.150	0.054	0.008		0.100	0.091	0.0240				
Minimum		0.51	0.234	1.080	2.30	5.90	13.56	0.088	7.420	1.320	1.620	0.090	0.031	0.000		0.100	0.091	0.0240				

Iron Removal %	93.43
Mang Removal %	98.957
Ammonia % Removal	99.76

** Blank cells above represent samples not taken or water treatment plant offline

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 Checklist

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 EMBC or Island Health BEFORE
MAKING THE FOLLOWING CONTACTS AS PER THE EMERGENCY PLANS

RDN Priority Contacts

MANAGER OF WATER SERVICES	CHRIS MIDGLEY (250) 729-5173
WATER SERVICES PROJECT ENGINEER	GERALD ST. PIERRE (250) 713-6957
MGR. REGIONAL & COMMUNITY UTILITIES	RANDY ALEXANDER (250) 729-5073
COMMUNICATIONS COORDINATOR	CHRISTINA GRAY (250) 390-4111
EMERGENCY COORDINATOR (or alternate)	ERICA BEAUCHAMP (250) 668-2167

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 Watering Restriction signs in each community.
- Put up roadside signage at the entrance to the community.

Administrative Support

- Provide information message on the RDN web site & social media.
- 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 / Cell</i>
Dave Welz	Chief Operator	(250) 248-4914
Heather Dorken	Utilities Technician III	(250) 248-4914
Brian Hale	Utilities Technician III	(250) 248-4914
Randy Stearman	Utilities Technician II	(250) 248-4914
Brad Lancaster	Utilities Technician II	(250) 248-4914
Lyndon Jaworski	Utilities Technician II	(250) 248-4914
Greg Roberts	Utilities Technician II	(250) 248-4914
Shane Phillips	Utilities Technician II	(250) 248-4914
Chris Midgley	Manager of Water Services	(250) 390-6560
Gerald St. Pierre	Project Engineer, Water Services	(250) 390-6560
Deb Churko	Engineering Technologist	(250) 390-6560
Jack Eubank	Bylaw Officer <i>(Emerg. Coord. Alternate- 24hrs)</i>	(250) 713-4872
Brian Brack	Bylaw Officer <i>(Emerg. Coord. Alternate- 24hrs)</i>	(250) 714-3987

Electoral Area Directors

Electoral Area	Director	Phone	E-mail Address
A	Alec McPherson	250-722-9472	alecmcpherson@shaw.ca
B	Howard Houle	250-247-8250	howard.houle@rdn.bc.ca
C	Maureen Young	250-754-5896	maureen_young@shaw.ca
E	Bob Rogers	250-468-9986	bob.rogers@rdn.bc.ca
F	Julian Fell	250-248-4296	fjfell.at.rdn@gmail.com
G	Joe Stanhope	250-248-6401	jstanhope@shaw.ca
H (Chair)	Bill Veenhof	778-424-2810	bill.veenhof@shaw.ca

Government Agency Contacts

Ministry of Environment	Nanaimo	(250) 751-3100
Department of Fisheries and Oceans	Nanaimo	(250) 754-0230
Emergency Management BC (EMBC) and Dangerous Goods Spills (formerly PEP)	Victoria	1-800-663-3456
Island Health (Environmental Health Officer)	Parksville	(250) 947-8222
<ul style="list-style-type: none"> Bill Wrathall- French Creek and San Pareil Water Systems Elizabeth Thomson- Surfside, Melrose, Whiskey Creek, Westurne Heights, and Horne Lake Water Systems 		
Island Health (Environmental Health Officer)	Nanaimo	(250) 755-6215
<ul style="list-style-type: none"> Tim Bilyk- Decourcey Water System Anthony Griffin- Englishman River Community Water System and Nanoose Bay Peninsula Water System Jill Lucko- Descanso Bay and Rollo McClay Water Systems Murray Sexton, Public Health Engineer Dr. Paul Hasselback, Medical Health Officer 		(250) 755-6293 (250) 739-6304 or after hours 1-800-204-6166
City of Parksville		(250) 248-5412
<ul style="list-style-type: none"> Chief Operator, Scott Churko 		(250) 927-1856 (cell)
Town of Qualicum Beach		(250) 752-6921
<ul style="list-style-type: none"> Foreman, Cam Purdon 		(250) 927-1144 (cell)
District of Lantzville		(250) 390-4006
<ul style="list-style-type: none"> Superintendent, Fred Spears 		(250) 713-0980 (cell)
North Cedar Improvement District		(250) 722-3711

Government Agency Contacts Cont'd

Islands Trust Organization (Main office)	Gabriola Isl	(250) 247-2063
<ul style="list-style-type: none"> Trustee Melanie Mamoser Trustee Heather O'Sullivan 	Gabriola Isl	(250) 247-2008
	Gabriola Isl	(250) 247-9574

Emergency Services

Hospital	Nanaimo	(250) 754-2141
	Parksville ph.	(250) 248-2332 (Nan hospital)
	Oceanside Ctr	(250) 951-9550
	Gabriola Clinic	(250) 247-9922
Ambulance	Nanaimo	911 or (250) 758-8181
	Parksville	911 or (250) 248-3511
Police	Nanaimo	911 or (250) 754-2345
	Parksville	911 or (250) 248-6111
	Gabriola Isl	911 or (250) 247-8333
Fire Department	Parksville	911 or (250) 248-3242
	Coombs-Hilliers	911 or (250) 752-2144
	Nanoose Bay	911 or (250) 468-7141
	Qualicum Beach	911 or (250) 752-6921
	Cedar	911 or (250) 722-3122
	Gabriola Isl	911 or (250) 247-5601

Priority Services

BC Hydro (Qualicum Beach number)	(250) 752-8012 or
BC Hydro (Power Outages & Electrical Emergencies)	1-888-769-3766
Telus	(250) 811-2323 or
<ul style="list-style-type: none"> Paul McGrath cell 248-0983 	(250) 741-7713 or 741-7716
FortisBC (Teresen Gas)	(250) 248-4880
Shaw Cable (Nanaimo)	(250) 754-5571
CP Rail	1-800-716-9132
French Creek Pollution Control Centre	(250) 248-5794
Chlorine Manufacturer (Brentagg)	1-800-661-1830

Community Contacts

District 69 School Board Office	(250) 248-4241
Nanoose Bay School	(250) 468-7414
Nanoose Children's Centre	(250) 468-1784
Nanoose Place	(250) 468-5339
Nanoose Post Office	(250) 468-7722
Canadian Forces Base Nanoose	(250) 756-5021 or 468-5004
	or (250) 468-2260 (MP Stn-24hr)
Descanso Bay Reg Park Operator(1)- Calvin Nguyen	(250) 713-4571
Descanso Bay Reg Park Operator(2)- Jessica Sedlock	(778) 806-0897
Horne Lake Reg Park Operator- Bill Woodhouse	(250) 927-4790

Excavation Services

Shoreline Equipment (Doug Penny)	(250) 468-7759 or 755-9502
Rite on Time Excavation & Trucking (Cody)	(250) 927-1645
Degnen Excavators (Gabriola Isl)	(250) 247-8817

Electrical Contractors

Canem Electric	(250) 468-1887
HPS Power Ltd. (Harvey Sommerfeld)	(250) 954-7463
TC Trades (Tom Frenette)	(250) 756-0077 or 668-0078
Ron Ruckman (Descanso Bay/Gabriola Isl)	(250) 247-0050

Other Services

Plumbing Services (Maci Motor - Pump Repair)	(250) 248-4423
JC Plumbing (Descanso Bay/Gabriola Isl)	(250) 247-7574 or 713-6700
EPCOR (Parksville)	(250) 951-2460
Sand and Gravel (Ozero)	(250) 752-1482
Sand and Gravel (Lussier & Sons)	(250) 468-9994
Sand and Gravel (DBL)	(250) 248-3693
EMCON Road Maintenance (Gabriola Isl)	(250) 247-9420
EMCON (Parksville) After Hours Emerg 1-866-353-3136 or	(250) 248-6212
EMCON (Nanaimo/Cedar)	(250) 722-9494

Other Services

Pump Truck (Action Tank Service)	(250) 248-3833
Pump Truck (Coast Environmental)	(250) 390-5080
Pump Truck and Toilet Rentals (A-1 Septic)	(250) 248-4438
Portable Washrooms (Coast Toilet Rentals)	(250) 753-7552
Bulk water supply (BC Water Service)	(250) 954-3628
Running Water Enterprises (Red Williams)	(250) 947-5197
Bottled water supply (Water Pure & Simple)	(250) 752-1373
Island H2O Services	(250) 754-4721
Summer Rain Water Delivery (Gabriola Isl)	(250) 247-9136
Kalicum Drilling	(250) 245-1220
RDN- Use our own water hauling tank and truck	(250) 248-4914

Suppliers

Four Star Waterworks (piping)	(250) 954-3546
EMCO Water Works	(250) 756-3344
Corix Water Products	(250) 746-8877
Andrew Sheret (Parksville)	(250) 954-9997
Andrew Sheret (Nanaimo)	(250) 758-7383
Hwy Four Rentals (equipment & pumps)	(250) 248-1100
Irritex Pumps and Irrigation – (pumps)	(250) 248-7028
Windsor Plywood (miscellaneous building supplies)	(250) 752-3122
Albertsons Hardware (miscellaneous building supplies)	(250) 248-6888
Robinson Rentals	(250) 753-2465
United Rentals	(250) 758-3911

Media Services

Christina Gray, RDN Communications Coordinator	1-877-607-4111 or 713-1075
Radio Station (CKWV) Nanaimo and Parksville	(250) 758-1131
TV Station (CHEK)	(250) 383-2435
Newspaper (PQ News and The Weekender)	(250) 248-4341
Gabriola Sounder	(250) 247-9337

Emergency Response Plans

Contamination of Source (Turbidity Events over 1 NTU, Spills, Accidents, Vandalism)

Actions:

- Notify Environmental Health Officer Ph. 250-947-8222 (or after-hours Medical Health Officer at 1-800-204-6166)
- Shut down pump
- Notify EMBC (Emergency Management BC)
- 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
- Advise local fire dept not to use fire hydrants

Contacts:

- Island Health
- EMBC (Emergency Management BC), and RCMP
- Ministry of Environment
- All schools and community centers – 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
- Notify Environmental Health Officer Ph. 250-947-8222 (or after-hours Medical Health Officer at 1-800-204-6166)
- Arrange alternate source – i.e., bottled water, bulk water, storage tank
- Advise RDN supervisory personnel if necessary

Contacts:

- Island Health
- Ministry of Environment

Emergency Response Plans Cont'd

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
- Notify Environmental Health Officer Ph. 250-947-8222 (or after-hours Medical Health Officer at 1-800-204-6166)
- Arrange alternate source if necessary
- Advise RDN supervisory personnel

Contacts:

- Island Health

Chlorination Failure

Actions:

- Notify Environmental Health Officer Ph. 250-947-8222 (or after-hours Medical Health Officer at 1-800-204-6166)
- 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
- Arrange for alternate disinfection if necessary
- Advise RDN supervisory personnel

Contacts:

- Island Health
- Chlorinator manufacturer

Pump Failure

Actions:

- Notify all users of interruption of service
- Call for repairs: pump manufacturer if necessary
- Notify Environmental Health Officer Ph. 250-947-8222 (or after-hours Medical Health Officer at 1-800-204-6166) (if interruption is not short term)
- Arrange alternate source if necessary – bottled or bulk water, etc.
- Advise RDN supervisory personnel if necessary

Contacts:

- Island Health

Emergency Response Plans Cont'd

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)
- Notify Environmental Health Officer Ph. 250-947-8222 (or after-hours Medical Health Officer at 1-800-204-6166)
- Arrange alternate source if necessary – bottled or bulk water, etc.
- Advise RDN supervisory personnel

Contacts:

- Island Health

Backflow or Back Siphonage

Actions:

- Notify Environmental Health Officer Ph. 250-947-8222 (or after-hours Medical Health Officer at 1-800-204-6166)
- Notify all users to boil water for two minutes or take other disinfection procedures in accordance with recommendations of local health officials. (See attached samples)
- 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:

- Island Health

Bacteria Count (RDN Lab)

Actions:

- Notify Medical Health Officer Ph. 250-739-6304 (or after-hours 1-800-204-6166)
- Follow procedures in accordance with recommendations of local health officials
- Post signs or deliver notices if necessary. (See attached samples)
- Check if UV unit is working at Descanso Bay Reg Park, clean the UV bulb
- Arrange for alternate disinfection at Descanso Bay Reg Park if the UV unit is not working
- Advise RDN supervisory personnel

Contacts:

- Island Health

Emergency Response Plans Cont'd

Flood Conditions:

Actions:

- Notify Environmental Health Officer Ph. 250-947-8222 (or after-hours Medical Health Officer at 1-800-204-6166)
- 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:

- Island Health
- EMBC (Emergency Management BC)
- Ministry of Environment

Drought Management Plan:

Actions:

- Monitor local well levels, streamflow, provincial drought rating, and provincial wildfire danger class rating
- Review historical water usage patterns to predict potential shortages
- Notify users early in the Spring/Summer about conservation strategies
- Manage water supply and maintain storage for fire flows
- Implement Stage 3 or Stage 4 watering restrictions, as required
- Reduce flows from all wells and from the Craig Bay Pump Station, if required
- Adjust chlorine dosing levels accordingly
- Notify Environmental Health Officer Ph. 250-947-8222 (or after-hours Medical Health Officer at 1-800-204-6166)
- Notify users in each affected water service area via roadside signage, hand-delivered notices, website alerts, e-messages, newspaper ads, radio/tv ads, and other means necessary

Contacts:

- Island Health
- EMBC (Emergency Management BC)

APPENDICES

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SAMPLE



BOIL WATER NOTICE

_____ Water Service Area
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 (2) 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 (Water Services) and listen to your local radio station for more information.

This order will be in effect until further notice.

WATER SERVICES DEPT. CONTACT INFO:
Administration ph. (250) 954-3792 or
Field Office ph. (250) 248-4914 or
E-mail: rcu@rdn.bc.ca



**BOIL WATER NOTICE INFORMATION FOR THE GENERAL PUBLIC
DURING A BOIL WATER NOTICE CAUSED BY:
INADEQUATE DISINFECTION**

This information is provided as a guide to help individuals reduce the risk of becoming ill from ingesting non-potable water. Individuals who follow these guidelines will greatly reduce their chance of becoming ill.

What is a Boil Water Notice?

A Boil Water Notice is a public announcement advising water system users that they should boil their tap water for drinking and other domestic purposes. It is a notice intended to protect the Publics' health from waterborne infectious agents that could be present or are known to be present in the community's drinking water supply.

What is the difference between a Boil Water Notice and a Boil Water Order?

A Boil Water Notice is a notice issued to the public as a health warning. In most cases it is the water supplier who notifies the public.

A Boil Water Order is legal document issued to the water supplier by the Health Authority requiring the water supplier to notify the public of a boil water notice.

What are the health risks during a Boil Water Notice?

The health risks are associated with ingesting water that contains microbiological agents that can cause disease. These pathogenic (disease causing) agents could include *Giardia*, *Cryptosporidia*, *E. coli*, *Campylobacter*, *Salmonella* and *Hepatitis A*. Boiling tap water for one minute is sufficient to destroy pathogens that could be present in the water.

There are numerous factors that influence whether a person becomes ill. First, there must be pathogens present in the water you consume. Not every glass of water is likely to contain pathogens. Even if the water you consume contains pathogens, those pathogens that are present must be viable. That is, they must be in a state where they can cause an illness and they must be present in large enough numbers to cause an illness. The number of pathogens needed to cause illness depends on the type of pathogen present, a person's size, age, and immune status.

The incubation period (time for symptoms to develop) will vary depending on the type of pathogen. For example, Giardia (beaver fever) could take up to four weeks to develop symptoms whereas E. coli could take up to ten days and as little as two days. For more information on waterborne diseases go to the following BC Health File;

<http://www.bchealthguide.org/healthfiles/hfile49a.stm>

Any persons believing that they are ill should see their doctor. Patients are sometimes requested to submit samples for laboratory analysis to assist in waterborne outbreak investigations.

It is important to note that Boil Water Notices are specific to microbiological threats. They are not appropriate to address threats from chemical contamination. Boiling chemically contaminated water will only result in the chemical becoming more concentrated or release the chemical into the air where it could be inhaled.

When there is a threat to a water supply from a chemical contaminated a more appropriate public health notice of "Do Not Drink the Water" would be issued.

What am I trying to kill when I'm boiling the water?

Boiling water is recommended to kill pathogenic microbes that may be present in contaminated water. Bacteria such as *E. coli* and *Salmonella* are killed rapidly at temperatures over 60°C and a temperature of 72.4°C for 1 minute is needed to inactivate cryptosporidium. *Hepatitis A* and *Norovirus* are rapidly inactivated at temperatures above 65°C.

Based on the above information there is no need to boil water for prolonged periods of time. Although heating water to boiling is not needed it is the only end point easily recognized by the public without the use of thermometers. It is therefore recommended that the public bring the water to a rolling boil for one minute to ensure that all pathogens have been inactivated.

One minute should be added to the above boiling times if the water is cloudy or highly colored to ensure proper mixing and that all pathogens have been exposed to the high temperature. When boiling water at altitudes above 2000m (6,500 ft), water should be boiled for 2 minutes.

How can the water become contaminated?

The water can become contaminated in a variety of ways. Some of these include:

- Heavy rainfall can wash contaminants into the water source
- Accidental spills in the water supply
- Breakdown of the disinfection process
- Break in water supply mains
- Vandalism
- Connections within the water system between potable and non-potable piping.

Is it necessary to boil all the water in the home during a boil water notice?

No, it is not necessary to boil all your water. Water used for bathing, showering, laundry, toilet flushing and mopping of floors does not need to be boiled. During bathing, young children should be cautioned against swallowing the bath water or alternatively young children could be sponge bathed.

All other water should be boiled. Simply put, any water that has a chance of being ingested should be boiled. This would include water used for drinking, beverage concentrates, ice cubes, washing fruits and vegetables, or brushing teeth.

Severely immune-compromised individuals should always boil their tap water for the purposes above. See the link to BC Health Files number 56, December 2003.

<http://www.bchealthguide.org/healthfiles/hfile56.stm>.

Infant formulas should always be prepared by using boiled tap water or bottled water that is boiled. See the link to BC Health Files number 69b, May 2006.

<http://www.bchealthguide.org/healthfiles/hfile69b.stm>.

Drinking water for pets including dogs, cats, birds and reptiles should also be boiled.

How should tap water be boiled properly?

Tap water should be boiled for at least one minute. Use any clean pot or kettle. Kettles that have automatic shut offs are acceptable.

How should tap water be boiled properly? (continued)

Health Canada suggests that microwave ovens can also be used using microwave-safe containers but cautions against forming superheated water (water heated above its boiling point without the formation of steam). When using microwaves, Health Canada suggests inserting a glass rod, wooden or plastic spoon in the container to prevent forming superheated water.

After boiling, let the water cool by leaving it on the counter or in the refrigerator in covered containers. Once the water is boiled, it can be stored in food grade containers at room temperature or in the refrigerator.

Shaking the water in the container or pouring the water between two containers and/or adding a pinch of salt can bring back flavor after boiling.

Are there alternatives to boiling water?

Yes, there are. Although there are alternatives, not all of them will be feasible or practical in all situations. In part, it will depend on how much water you need and what you need it for. Safe alternatives to boiling water include:

- Using commercially prepared bottled water
- Obtaining water from an approved source that is not on a boil water notice, or
- Using bleach to disinfect small quantities of tap water. See the following chart or website for a guide to using bleach.

<http://www.bchealthguide.org/healthfiles/hfile49b.stm>

Disinfection using unscented household bleach (5% chlorine) works best with warm water. Add bleach to the water, shake or stir for thorough mixing and then let it stand for at least 30 minutes before drinking.

Gallons of water to disinfect (equivalent shown in brackets)	Amount of Household bleach (5%) to add*
1 gal. (4.5 litres)	2 drops (0.18 mL)
2 ½ gal. (10 litres)	5 drops (0.4 mL)
5 gal. (23 litres)	11 drops (0.9 mL)
10 gal. (45 litres)	22 drops (1.8 mL)
22 gal. (100 litres)	¾ teaspoon (4 mL)
45 gal. (205 litres)	1 ½ teaspoons (8 mL)
50 gal. (230 litres)	1 ¾ teaspoons (9 mL)
100 gal. (450 litres)	3 ½ teaspoons (18 mL)
220 gal. (1000 litres)	8 teaspoons (40 mL)
500 gal. (2200 litres)	6 tablespoons (90 mL)
1000 gal. (4550 litres)	6 ½ ounces or 12 tablespoons (180 mL)

A slight chlorine odour should still be noticeable at the end of the 30-minute waiting period if you have added enough bleach. If not, repeat the dosage and allow the water to stand an additional 15 minutes. If the water has too strong a chlorine taste, allow the water to stand exposed to the air for a few hours or pour it from one clean container to another several times.

The disinfection action of bleach depends as much on the waiting time after mixing as to the amount used. The longer the water is left to stand after adding bleach, the more effective the disinfection process will be.

NOTE: Bleach does not work well in killing off *Cryptosporidium* parasites.

The amount of bleach needed to kill *Cryptosporidium* makes the water almost impossible to drink. If *Cryptosporidium* is in the water, boiling is the best way to ensure that the water is safe to drink.

I have my own water treatment device do I still need to boil my water?

If the device is designed to improve taste or reduce odour such as an activated carbon filter the answer is **YES** you should still boil your water.

If the device is designed to improve the chemical quality of the water such as reducing the iron content then the answer is **YES** you should still boil your water.

If the device is designed to improve water that is already potable the answer again is **YES** you should still boil your water.

There are numerous filters on the market designed to remove microorganisms and particulates. Most of these filters are not capable of removing viruses. Therefore, you should boil your water if you have a unit that cannot remove viruses.

If the device is designed to disinfect (destroy pathogens) water such as in an ultraviolet light (UV) disinfection unit you **might not** need to boil your water. There are numerous ultraviolet units; some are designed to disinfect raw water and some are designed to disinfect water that has already been disinfected at a central facility. For example, if the unit is classified by the National Sanitation Foundation (NSF) as meeting NSF Standard 55 Class A, it is designed to disinfect raw water. However, if the water within the distribution system is too turbid or cloudy, even a UV unit meeting NSF Standard 55 Class A may not work properly and you should still boil your water.

Reverse osmosis (RO) units are designed to filter water at the molecular level and should provide water that is free of pathogens. Thus, you **do not** have to boil your water if you have a reverse osmosis water treatment device.

There are many types of units on the market each designed to address specific water quality issues. It is recommended that you check with the unit's manufacturer to know exactly what your unit can do.

Can I purchase water from vending machines?

It depends on how the water is treated. Local vending machines that use local water would only be acceptable if the vending machine can kill pathogens that might be present in the water. Check with the store or manufacturer to see if the unit is capable of providing water that is safe to drink.

Warning signs should be posted on vending units that are not capable of providing safe water. Alternatively, the machine should be turned off.

Are there any people or groups of people at higher risk?

Yes. These people include any individual whose immune system is not fully developed or whose immune system is under stress such as infants, the elderly, immune compromised individuals and individuals already suffering from an illness. For more information go to the following BC Ministry of Health websites:

BC Health File: weakened immune systems

<http://www.bchealthguide.org/healthfiles/hfile56.stm>.

BC Health File: preparing infant formula

<http://www.bchealthguide.org/healthfiles/hfile69b.stm>.

Boil water or provide an alternative safe supply of water that is used for:

- Drinking purposes- This includes all beverage concentrates such as fruit juice and iced tea
- Food preparation- This includes washing of fruits and vegetables
- Food contact surfaces

Boil water or provide an alternative safe supply of water that is used for:
(continued)

Food contact surfaces are all those surfaces that food comes into contact with during the food preparation process. These surfaces include counter tops, cutting boards and chopping blocks. Food contact surfaces should be washed with clean water and then sanitized using an acceptable sanitizing agent. Sanitizing agents for food contact surfaces include bleach (12-15 mL of 5% bleach per litre of water), iodophors, quaternary ammonia compounds or hydrogen peroxide (3% solution).

- Oral hygiene (brushing teeth)
- Infant formula; see BC Health File; preparing infant formula at <http://www.bchealthguide.org/healthfiles/hfile69b.stm>.
- Ice making

It is important to note that freezing does not destroy most pathogens. Bacteria and viruses can survive in frozen products for long periods of time. Discard any ice made from contaminated or potentially contaminated water.

Hand washing

Using warm water and soap should be sufficient. Applying a hand sanitizer after washing with tap water would add an extra barrier of protection.

Dishwashing by hand

Dishes washed by hand should be sanitized for two minutes in a separate sink using a bleach solution (2 mL of bleach per litre of water) after the dishes have been washed and rinsed. The dishes should then be left to **air dry** prior to being used. Attempting to wash and sanitize dishes in the same sink at the same time is not recommended because soap, grease and food particles interfere with the sanitizing process.

Mechanical dishwashers

Most residential home-style dishwashers do not provide a high enough temperature to kill all pathogens. Dishwashing units that reach 82 degrees Celsius (180 Fahrenheit) for twelve seconds (or an equivalent time-temperature relationship) during the final rinse cycle will destroy pathogens.

To optimize the disinfection process while using a residential dishwasher you should consider:

1. Using the highest temperature setting possible.
2. Running dishes through the dishwasher twice.
3. Sanitizing dishes afterwards in a sink containing a weak bleach solution (see dishes washed by hand above).
4. Letting the dishes air dry prior to use

Fruit and vegetable washing

Thoroughly wash all produce with potable water especially those that are going to be eaten raw. This is a common sense practice that should be applied even when there is no public boil water notice.

Coffee Machines

Coffee machines usually produce water around 70 to 80 degrees Celsius, which is sufficient to destroy pathogens. However, a sufficient amount of time is needed to ensure that all harmful organisms are destroyed. Therefore, let the coffee stand for at least five minutes before drinking.

Home canning

To be safe, postpone home canning until the boil water notice has been rescinded.

Beer and wine making

To be safe, postpone beer and wine making until the boil water notice has been rescinded.

When will the Boil Water Notice be rescinded?

Only when the water supplier can provide potable water will the Health Authority rescind the Boil Water Notice. Once or more of the following usually achieves confirmation that the water is once again safe to drink.

These include:

- Identifying and fixing the source or sources of the problem,
- Implementing procedures to eliminate or reduce the chance for reoccurrence
- Performing water quality tests
- Flushing and disinfecting distribution lines and water storage facilities

Precautions to consider when the Boil Water Notice is lifted

- Flush all water-using fixtures for 1 minute
- Run cold-water faucets and drinking fountains for 1 minute before using water
- Drain and flush all ice-making machines in your refrigerator
- Run water softeners through a regeneration cycle
- Drain and refill hot water heaters set below 45 deg C (normal setting is 60 deg C)
- Change any pre-treatment filters (under sink style and refrigerator water filters, carbon block, activated carbon, sediment filters, etc.)

Can I speak to a person in Public Health if I have a question about the Boil Water Notice?

Yes you can. For further information contact Island Health Officers at the following locations:

- Victoria ph. 250-519-3401
- Nanaimo ph. 250-755-6215
- Parksville ph. 250-947-8222
- Courtenay ph. 250-331-8518
- Island Health Office 6475 Metral Drive, Nanaimo, BC
- Island Health Office 489 Alberni Hwy, Parksville BC

After hours Medical Health Officer on call is 1-800-204-6166.

Additional information can be found at the following BC, Canadian and US websites. These are:

BC Health File; how to disinfect drinking water

<http://www.bchealthguide.org/healthfiles/hfile49b.stm>

BC Health File; weekend immune systems and water-borne infections

<http://www.bchealthguide.org/healthfiles/hfile56.stm>

BC Health File; waterborne disease in BC

<http://www.bchealthguide.org/healthfiles/hfile49a.stm>

BC Health File; cryptosporidiosis

<http://www.bchealthguide.org/healthfiles/hfile48.stm>

BC Health File; giardiasis

<http://www.bchealthguide.org/healthfiles/hfile10.stm>

BC Health File; safely preparing and storing baby formula

<http://www.bchealthguide.org/healthfiles/hfile69b.stm>

US EPA how to boil water and use bleach

<http://www.epa.gov/ogwdw000/faq/emerg.html>

US Centre for Disease Control; preventing cryptosporidiosis infection

<http://www.cdc.gov/ncidod/dpd/parasites/cryptosporidiosis/default.htm>

US Centre for Disease Control; Giardia fact sheet

http://www.cdc.gov/ncidod/dpd/parasites/giardiasis/factsht_giardiasis.htm#prevention

US Centre for Disease Control; Preventing Cryptosporidium; a guide to water filters & bottled water

http://www.cdc.gov/ncidod/dpd/parasites/cryptosporidiosis/factsht_crypto_prevent_water.htm

Information sources for developing this package includes

- BC Ministry of Health
- Health Canada
- Alberta Environmental Health
- Washington State Department of Health
- BC Centre for Disease Control
- US EPA (Environmental Protection Agency)
- US Center for Disease Control
- NSF (National Sanitation Foundation)
- DWO (Drinking Water Officer's) Guide



REGIONAL
DISTRICT
OF NANAIMO

SAMPLE



WARNING

This water is
considered **UNFIT**
for drinking or
domestic use

EFFECTIVE _____

For further information, please contact us at the numbers below.

WATER SERVICES DEPT. CONTACT INFO:
Administration ph. (250) 954-3792 or
Field Office ph. (250) 248-4914 or
E-mail: rou@rdn.bc.ca

Printed: June 10, 2016





SAMPLE



NOTICE WATER SUPPLY SERVICE INTERRUPTION

_____ Service Area

Date: _____

Location: _____

Hours: _____

The Regional District of Nanaimo wishes to notify you that while improvements to the water system are in progress, water service will be interrupted.

The above time period is not definite, as the RDN will endeavor to keep you in service for as long as possible and have the water back in service as quickly as possible after the initial shutdown occurs.

When service is resumed, the water may be discoloured. This is due to disturbed deposits in the pipes and is not harmful. The RDN is not responsible for any damage resulting from interrupted service.

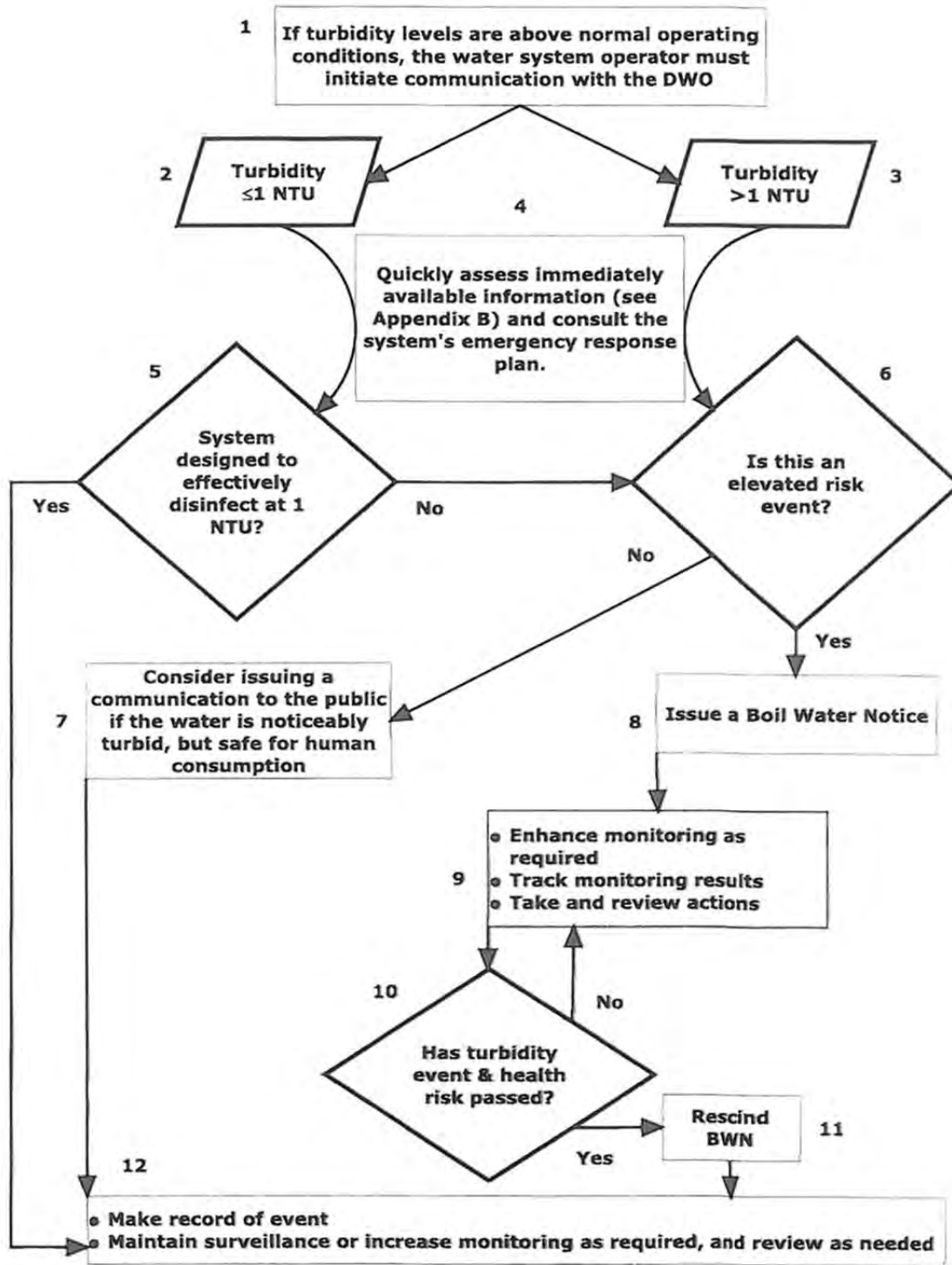
If you have any questions or require further information, please contact us at the numbers provided below.

WATER SERVICES DEPT. CONTACT INFO:
Administration ph. (250) 954-3792 or
Field Office ph. (250) 248-4914 or
E-mail: rcu@rdn.bc.ca

Printed: June 10, 2016



Decision Tree for Responding to a Turbidity Event in Unfiltered Drinking Water

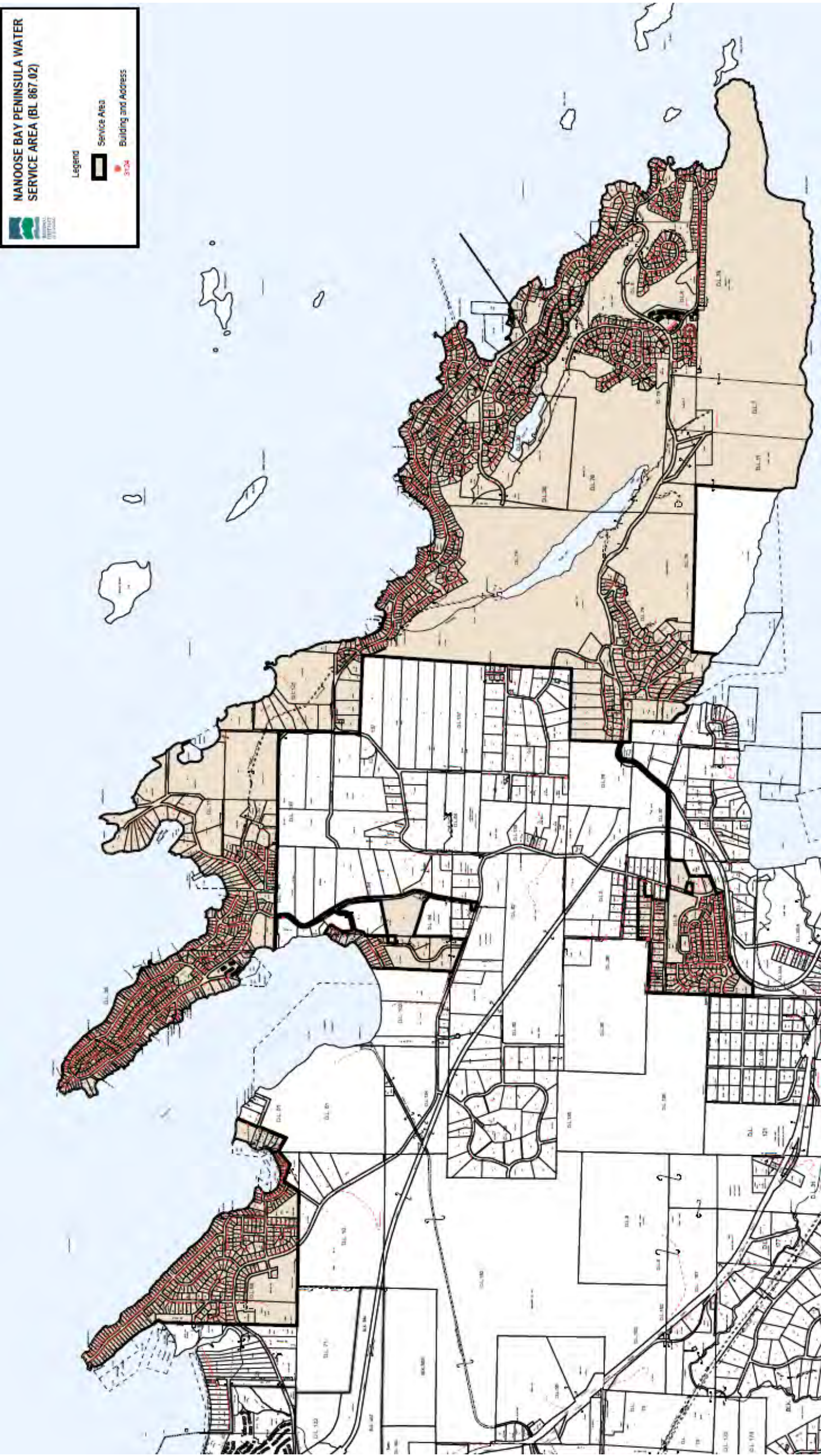


MAPS

Water Service Areas

Nanoose Bay Peninsula Water Service Area	Map 1
Madrona Pt/Wall Beach Neighbourhood	Map 2
Fairwinds Neighbourhood	Map 3
Arbutus Park Neighbourhood	Map 4
West Bay Neighbourhood	Map 5
Driftwood Neighbourhood	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
Descanso Bay Reg. Park Water System	Map 14
Horne Lake Reg. Park Water System	Map 15
Rollo McClay Community Park Water System	Map 16
Westurne Heights Water System	Map 17

MAP 1 NANOOSE BAY PENINSULA





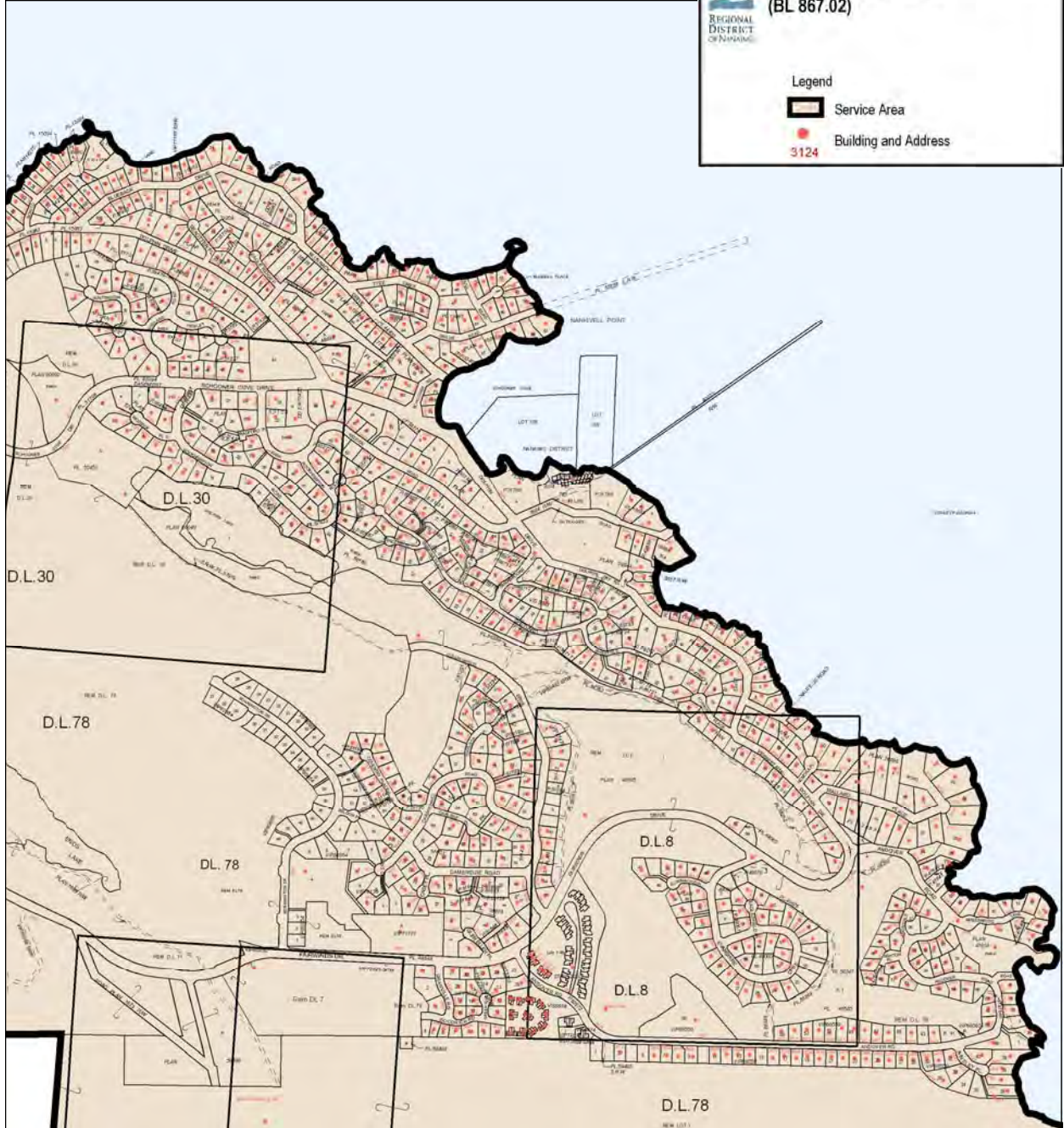
REGIONAL DISTRICT OF NANAIMO

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

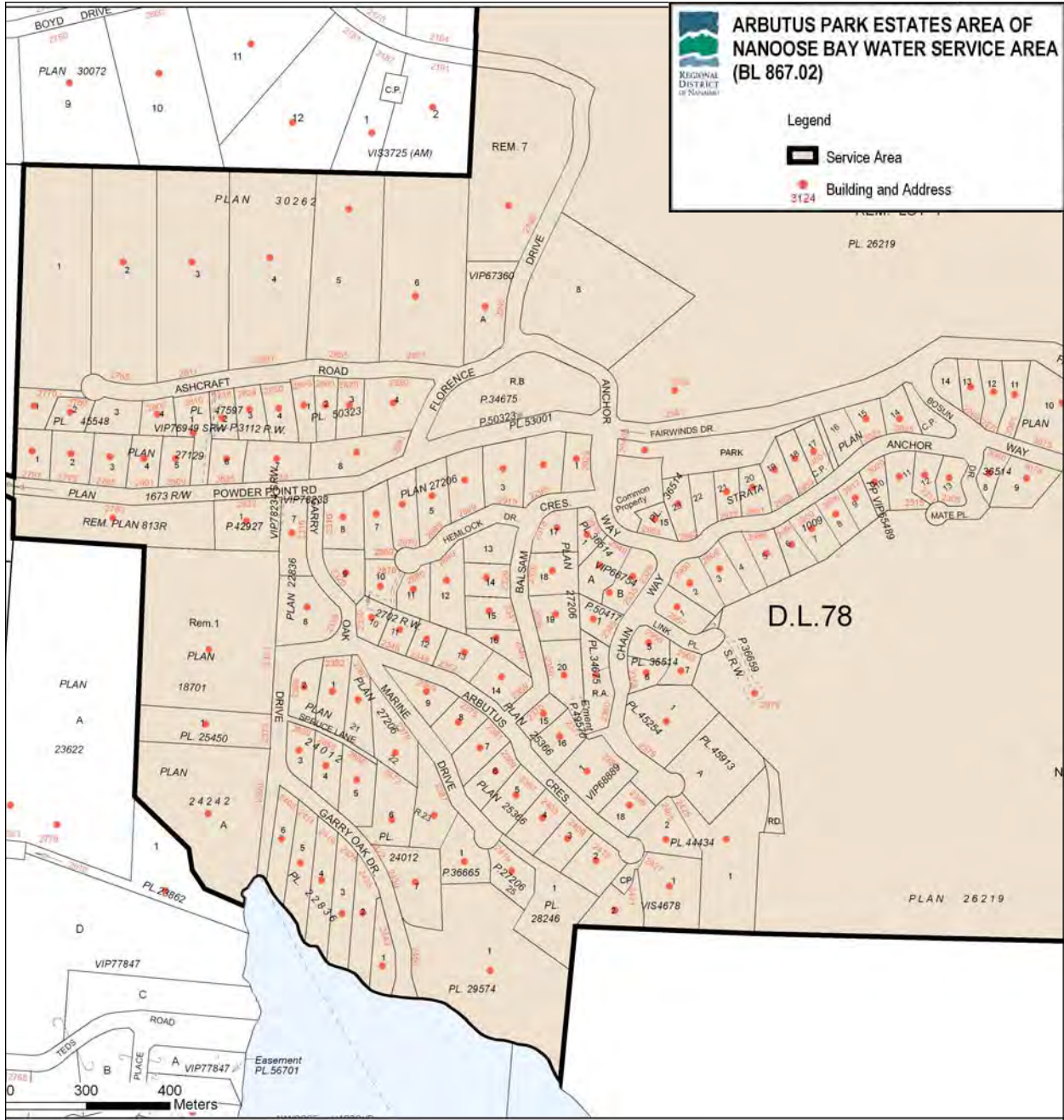
Legend

- Service Area
- Building and Address

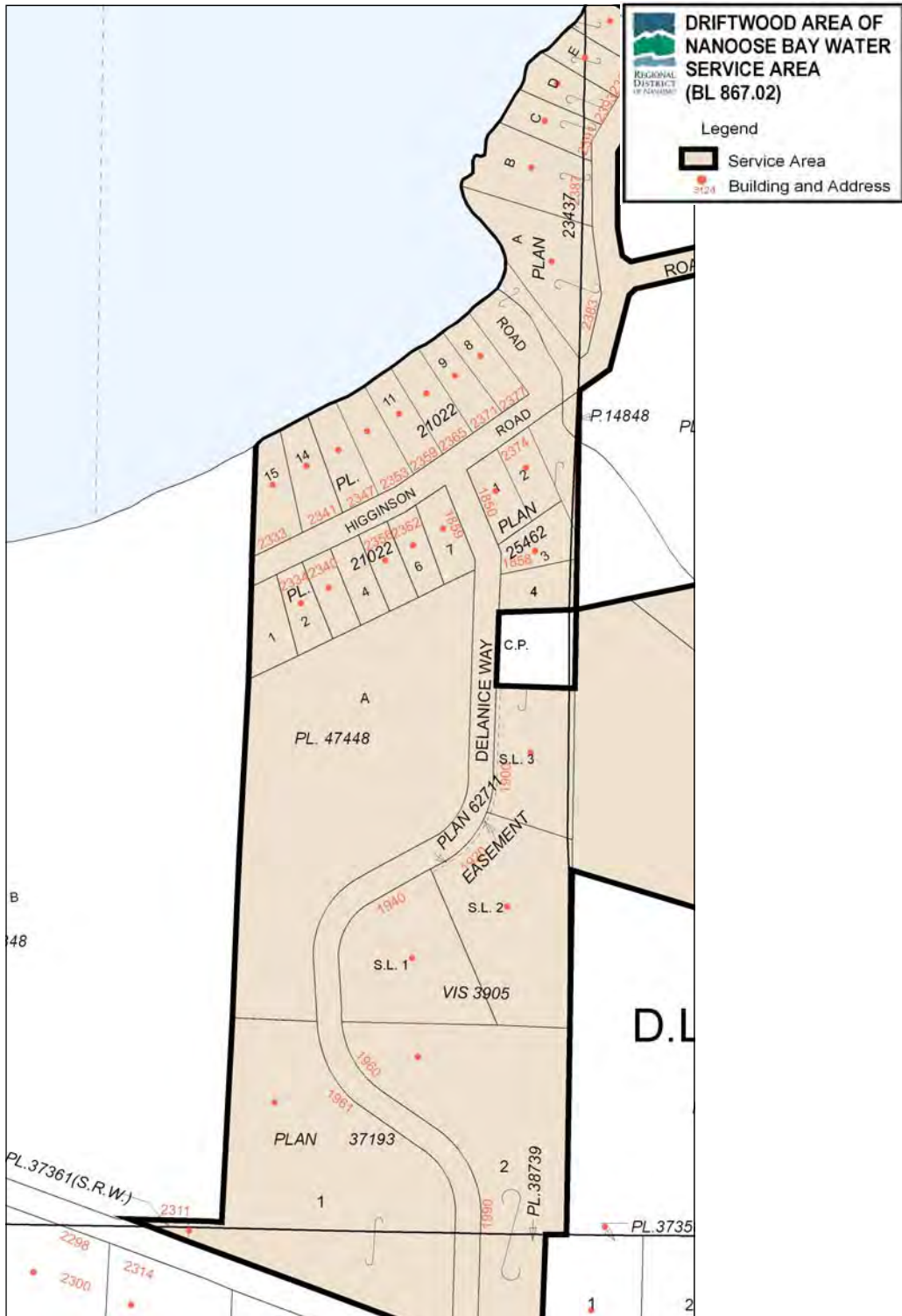
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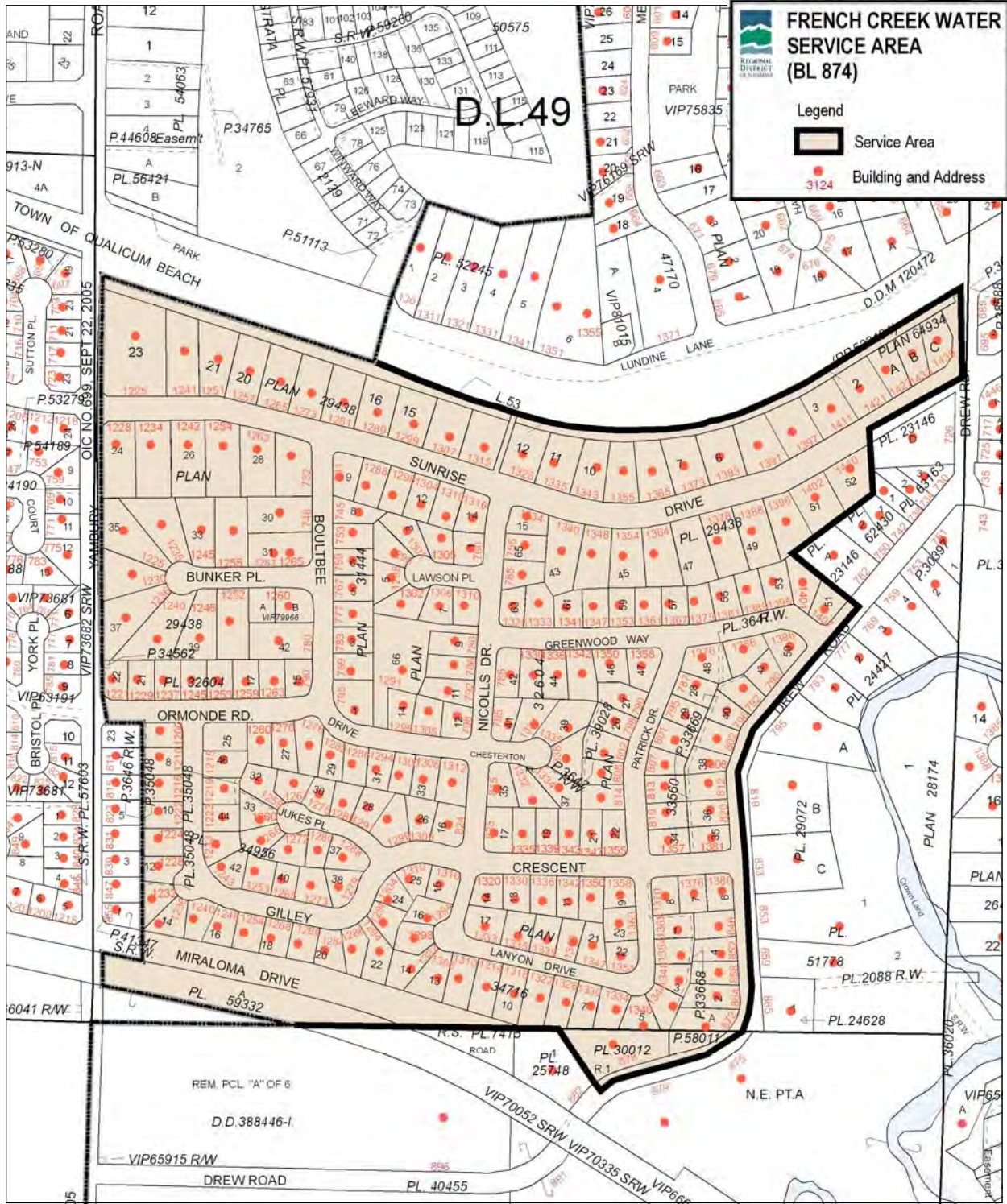
MAP 3 FAIRWINDS



MAP 4 ARBUS PAK



MAP 6 DRIFTWOOD



MAP 7 FRENCH CREEK

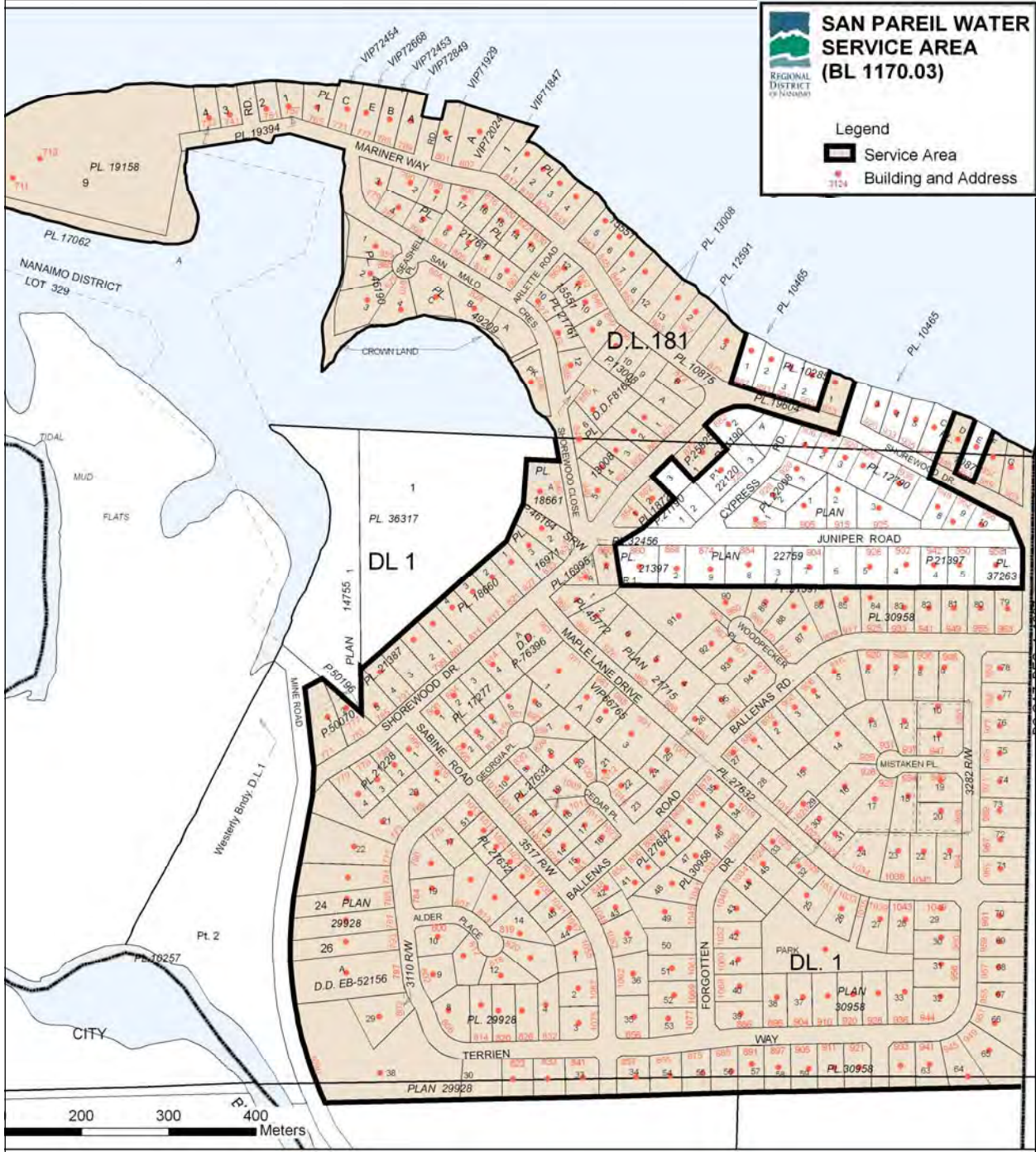
SURFSIDE PROPERTIES WATER SERVICE AREA (BL 694)

Legend

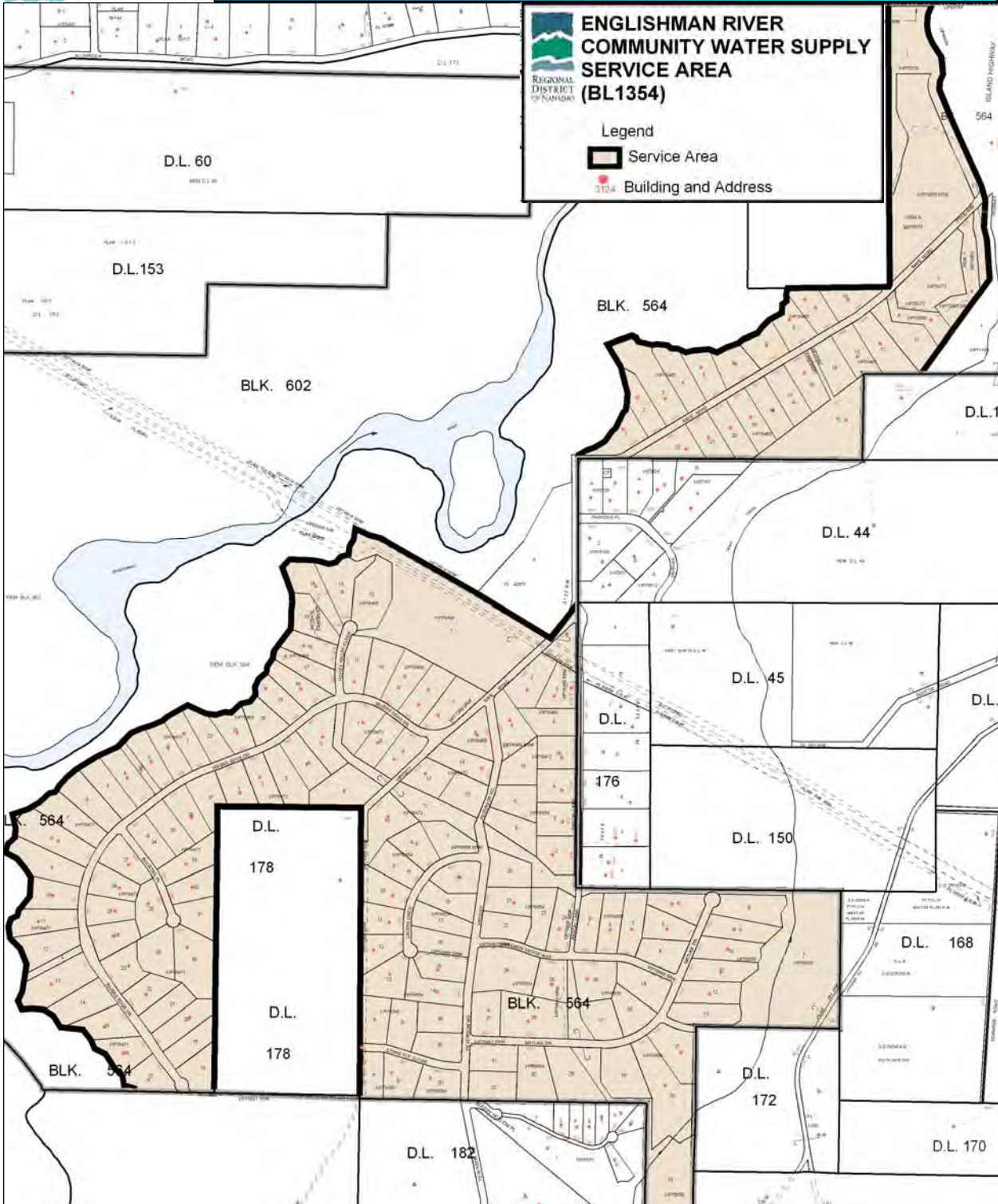
- Service Area
- Building and Address

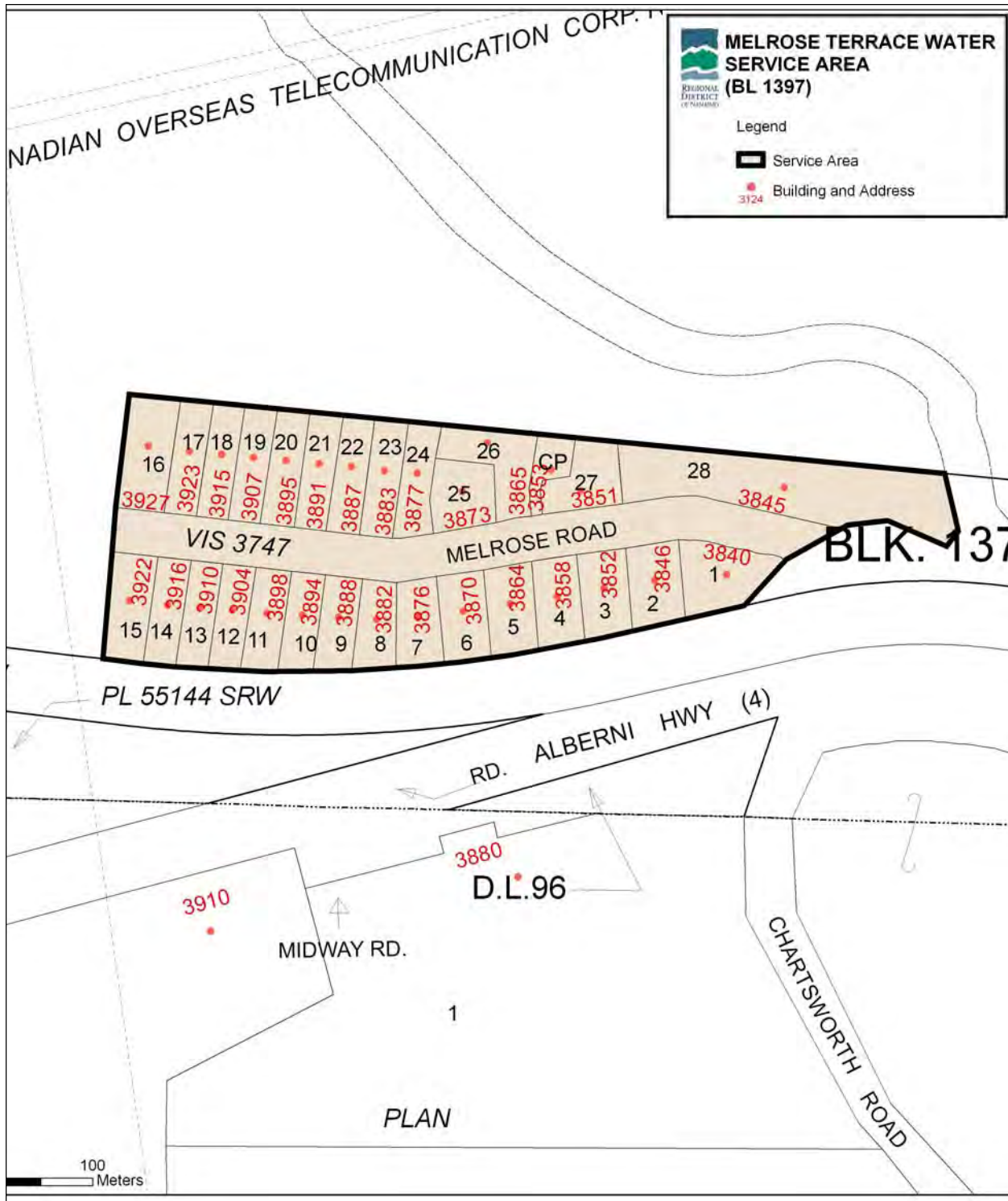


MAP 8 SURFSIDE

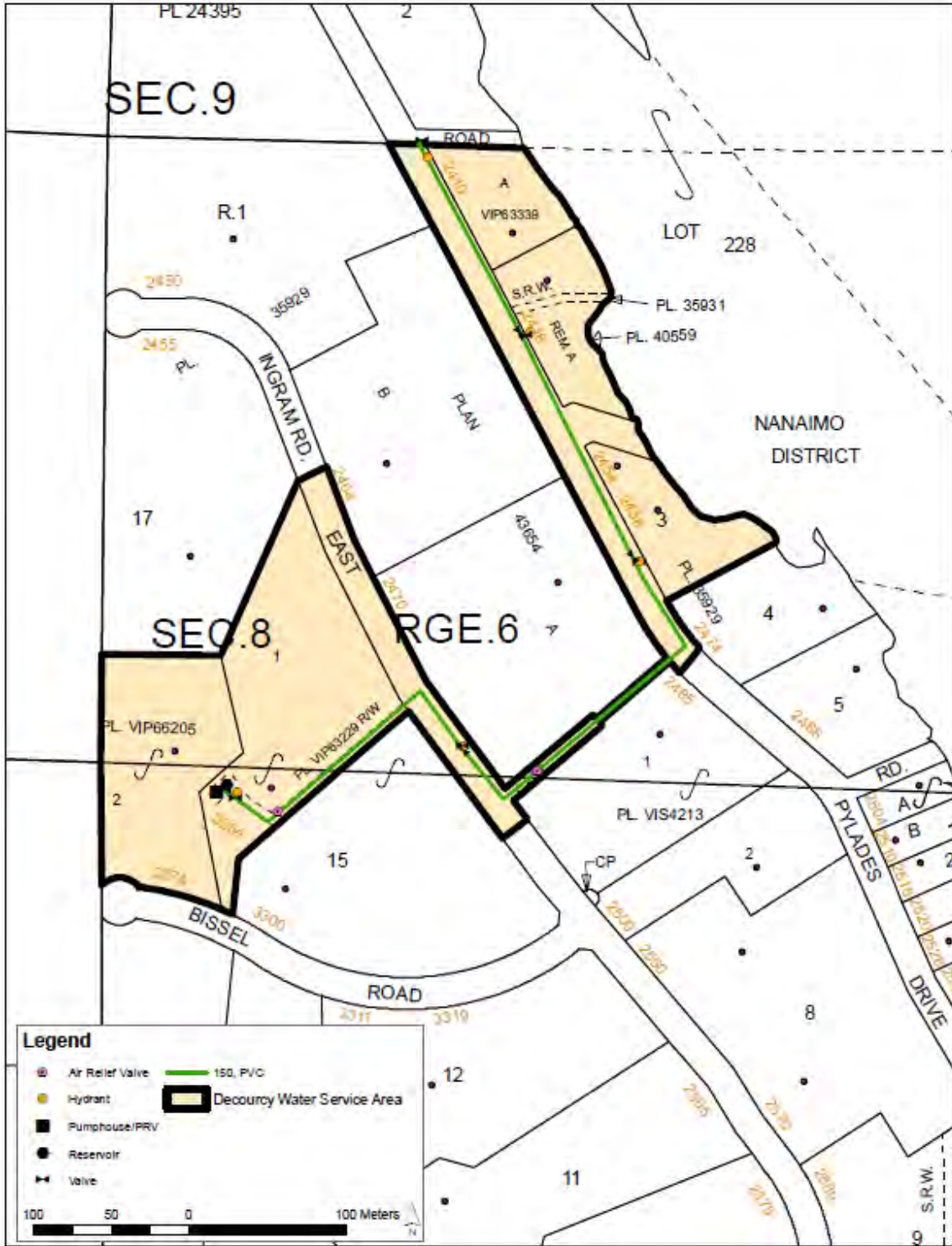


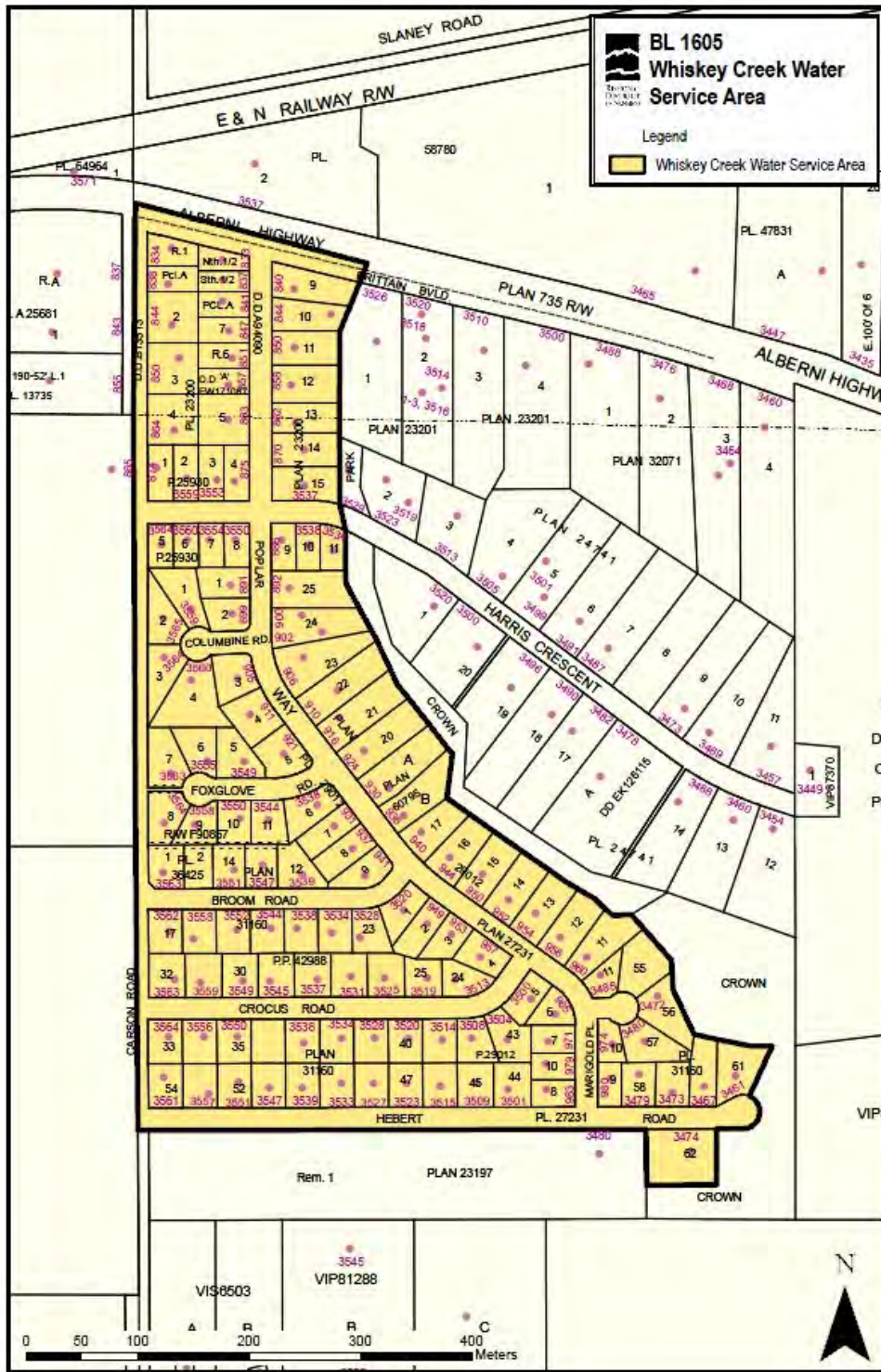
MAP 9 SAN PAREIL





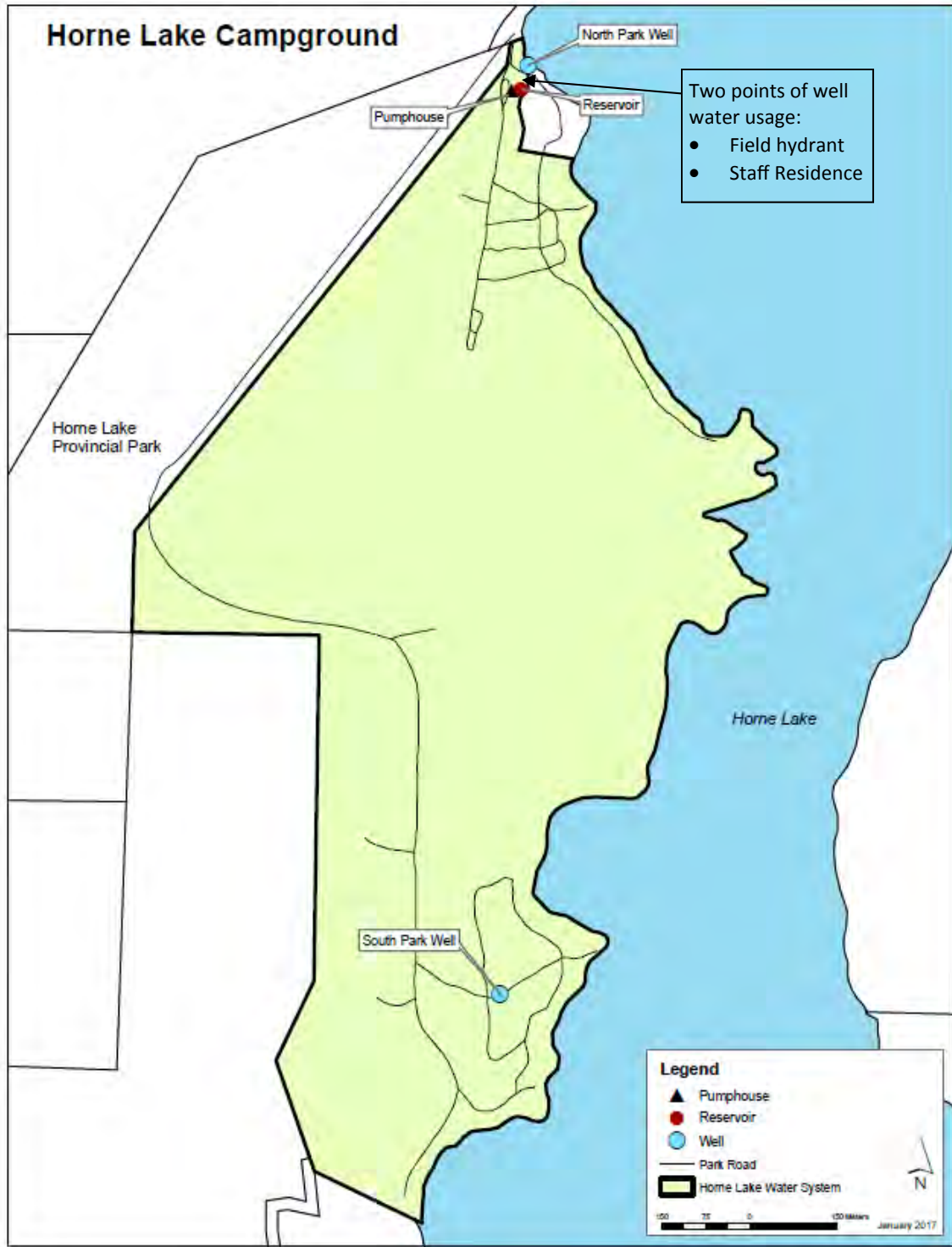
MAP 11 MELROSE



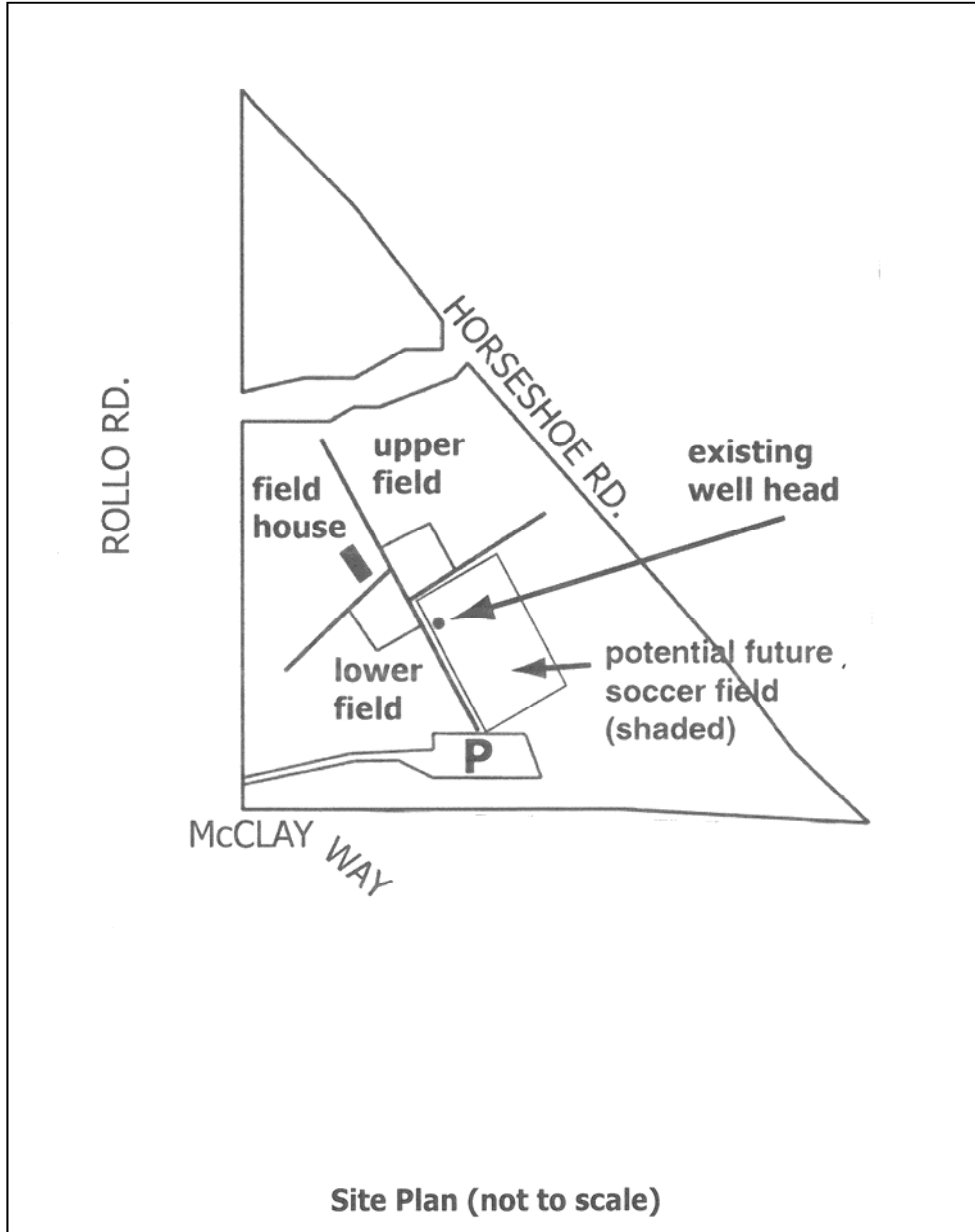


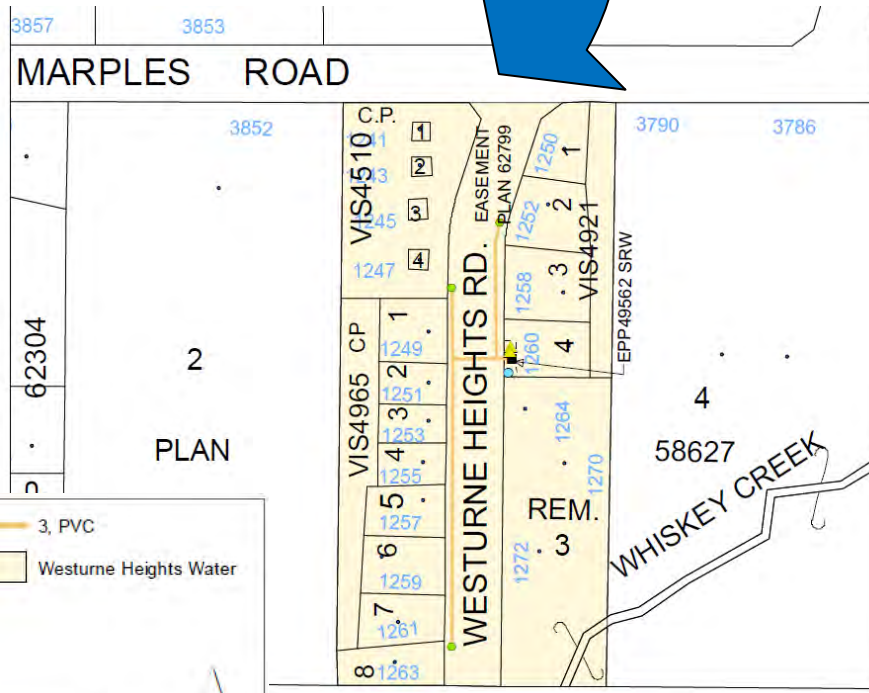
MAP 13 WHISKEY CREEK





MAP 15 HORNE LAKE REG. PARK





Legend

	Cistern		3, PVC
	Flush Out		Westurne Heights Water
	Pumphouse		
	Well		

40 20 0 40 Meters

MAP 17 WESTURNE HEIGHTS