



REGIONAL
DISTRICT
OF NANAIMO



SAN PAREIL

Water Local Service Area

Annual Report
2008



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1. Introduction

The following annual report describes the San Pareil Water Local Service Area and summarizes the water quality and production data from 2008. This report also includes a summary of inquiries and complaints, completed and proposed maintenance activities, the Emergency Response Plan, and the Cross Connection Control Program.

This report is to be submitted to the Vancouver Island Health Authority by the Spring of 2009.

2. San Pareil Water System

The San Pareil Water Service Area was established in 1999 when the RDN acquired the existing Bubbling Springs Water Utility. This system is located to the northeast of the Englishman River bridge on the east side of the City of Parksville. The water source for the San Pareil Water Service Area comes from a series of groundwater wells located in the well field on Plummer Road. The well water is chlorinated and stored in one reservoir. A map of the San Pareil Water System is provided in Appendix A for reference.

2.1 Groundwater Wells

Four groundwater production wells are present in the well field at 1090 Plummer Road, Parksville, B.C. Two of the wells are not currently in use: Well #2 is an older, shallow well that is kept on stand-by. Well #3 was converted to a monitoring well when Well #4 was drilled.

| Well / Name | Well Depth | Wellhead Protection | Treated/Untreated with Chlorine |
|-------------|------------|---------------------|---------------------------------|
| #1 | 4.4 m | Yes | Treated |
| #2 | 5.5 m | Yes | Not in use |
| #3 | 7.0 m | Yes | Not in use |
| #4 | 5.7 m | Yes | Treated |

2.2 Reservoirs

One concrete service reservoir is present at 1090 Plummer Road, and has a capacity of 340 m³ (75,000 imperial gallons).

2.3 Distribution System

The water distribution system in San Pareil is largely comprised of 100mm and 150mm PVC and asbestos-concrete watermains. Fire hydrants are located throughout the system.

3. Water Sampling and Testing Program

Water sampling and testing is carried out weekly in the distribution system. The following table includes a summary of all testing:

| Timing | Location | Tests |
|---|------------------------------|--|
| Weekly | RDN (in-house) Laboratory | Total coliforms, E.Coli Temperature, pH, Conductivity Chlorine residual, Salinity Total Dissolved Solids Iron, Manganese |
| Weekly (Health Dept. Requirement) | North Island Labs | Total, Fecal coliforms |
| Annual Source Water Testing | North Island Labs | Complete potability testing of each well |
| Annual System Water Testing | North Island Labs | Complete potability testing of distribution system |

4. Water Quality - Source Water and Distribution System

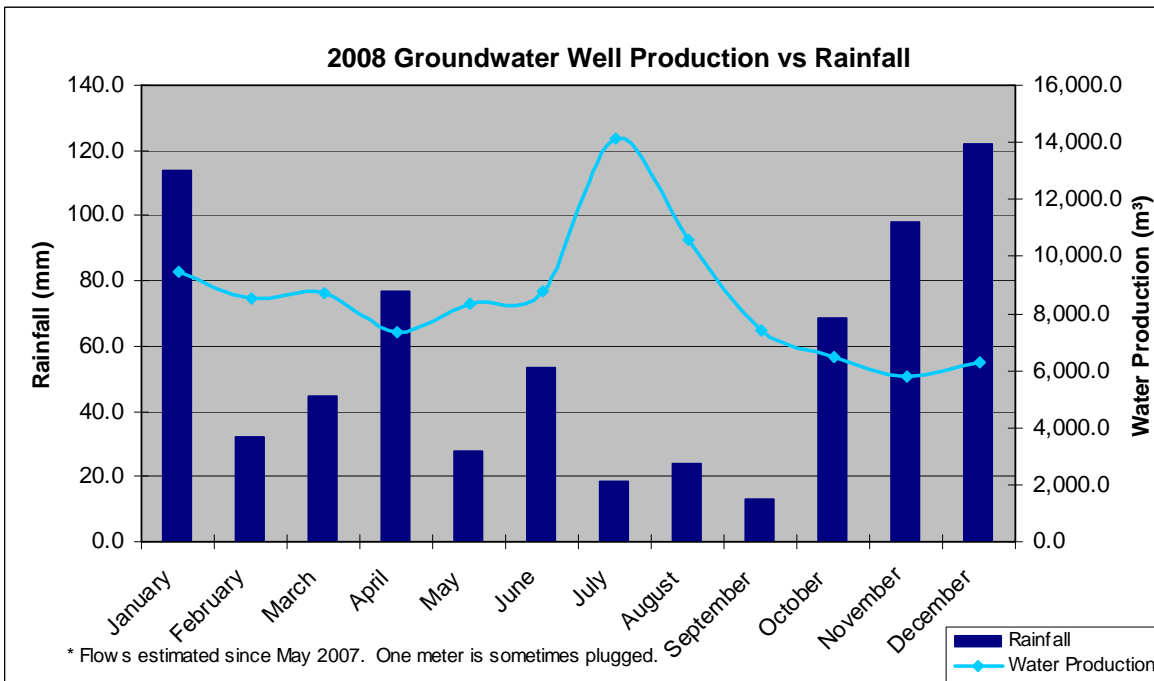
Up-to-date water quality reports and lab data are posted monthly on the RDN website at www.rdn.bc.ca in the WaterSmart section, under “Communities”. Tables of water quality testing results for both the source water and distribution system are provided at the end of this report under Appendix B.

5. Water Quality Inquiries and Complaints

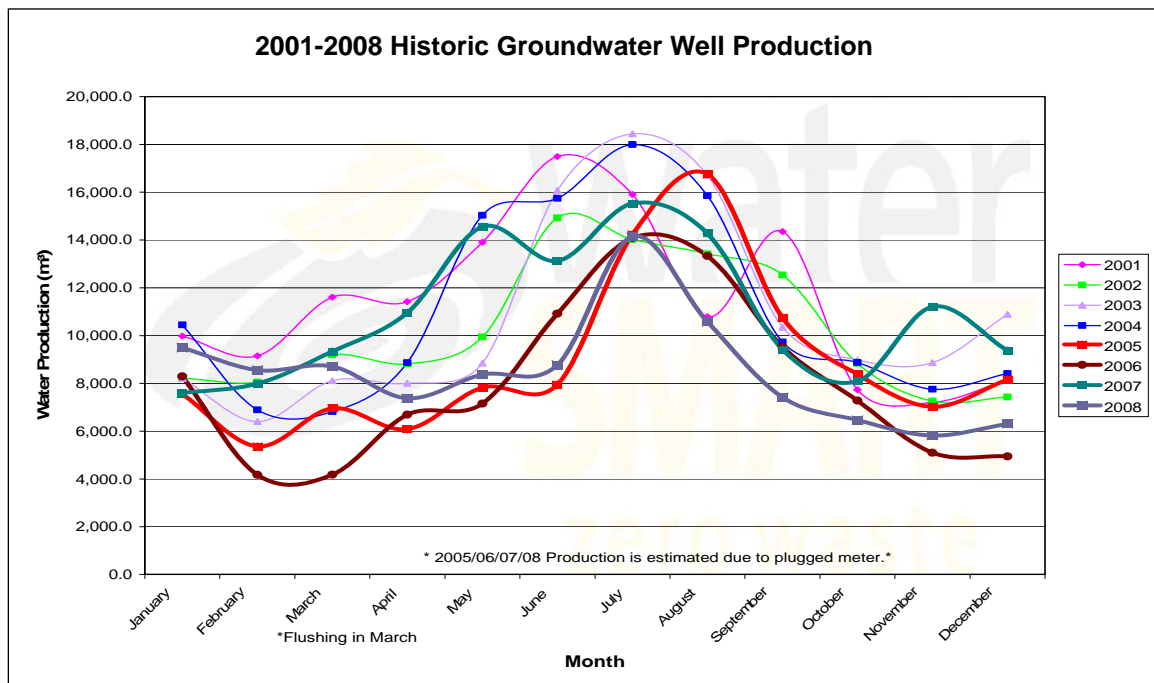
No complaints were received from the San Pareil water service area. A few inquiries were made regarding the location of underground services.

6. Groundwater Production and Consumption

The 2008 monthly groundwater production for San Pareil is shown in the chart below. There are 276 water service connections in San Pareil. Groundwater production has been charted against rainfall data from the City of Parksville website to show the correlation between rainfall and water consumption.



The monthly groundwater production for San Pareil for the past 8 years is shown in the chart below. Groundwater production in 2008 was typically lower than previous years.



Consumption

In the Fall/Winter of 2008, the average usage per home in San Pareil was 0.51 cubic metres per day (112 imperial gallons). In the summer, the average water usage was 0.97 cubic metres per day (213 imperial gallons). Based on these figures, the annual consumption per capita is estimated to be 282 L/day. This consumption is 5.4% less than the RDN system average of 298.4 L/day/capita for 2008.

7. Maintenance Program

Regular maintenance and inspections are completed around the wellhead areas to reduce or eliminate the risk of contamination and system failure. Watermains are flushed once annually in the Spring. Annual fire hydrant maintenance is completed in the Fall.

8. Water System Projects

8.1 2008 Completed Studies & Projects

- Replaced all facility signs.
- Re-keyed all gates and points of entry.
- Established electrical connections for the mobile generator at key sites.
- Completed 'B' fire hydrant maintenance.
- Completed annual watermain flushing.
- Completed a comprehensive water conservation program (**Team WaterSmart**) from May to October.
- Initiated the WaterSmart school program in partnership with Nanaimo Recycling Exchange.
- Updated and improved the RDN **WaterSmart** website.
- Updated the Emergency Response Plan.
- Expanded the Operating Procedures binder.
- Completed the SCADA (Supervisory Control and Data Acquisition) Study.
- Completed the Innovative Water Supply and Re-Use study.
- Completed the *Action for Water* referendum process.
- Achieved Backflow Prevention Tester's Certification for 3 Operations staff.
- Created the Auto E-Message notification sign-up on the RDN website.

8.2 2009 Proposed Projects & Upgrades

- Establish the Drinking Water Protection Advisory Committee.
- Review the SCADA report and options for implementation.
- Commence the 2009 **Team WaterSmart** education program.
- Develop a rebate / incentive program.
- Develop the *Well Aware* well safety program.
- Install 2 stand-alone water sampling stations.

8.3 2009 Proposed Studies

- Complete the well re-development study.

9. Emergency Response Plan

The Emergency Response Plan (ERP) was reviewed and updated in 2008. A copy of the ERP is attached in Appendix C.

10. Cross Connection Control

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

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

The program in 2009 will include:

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

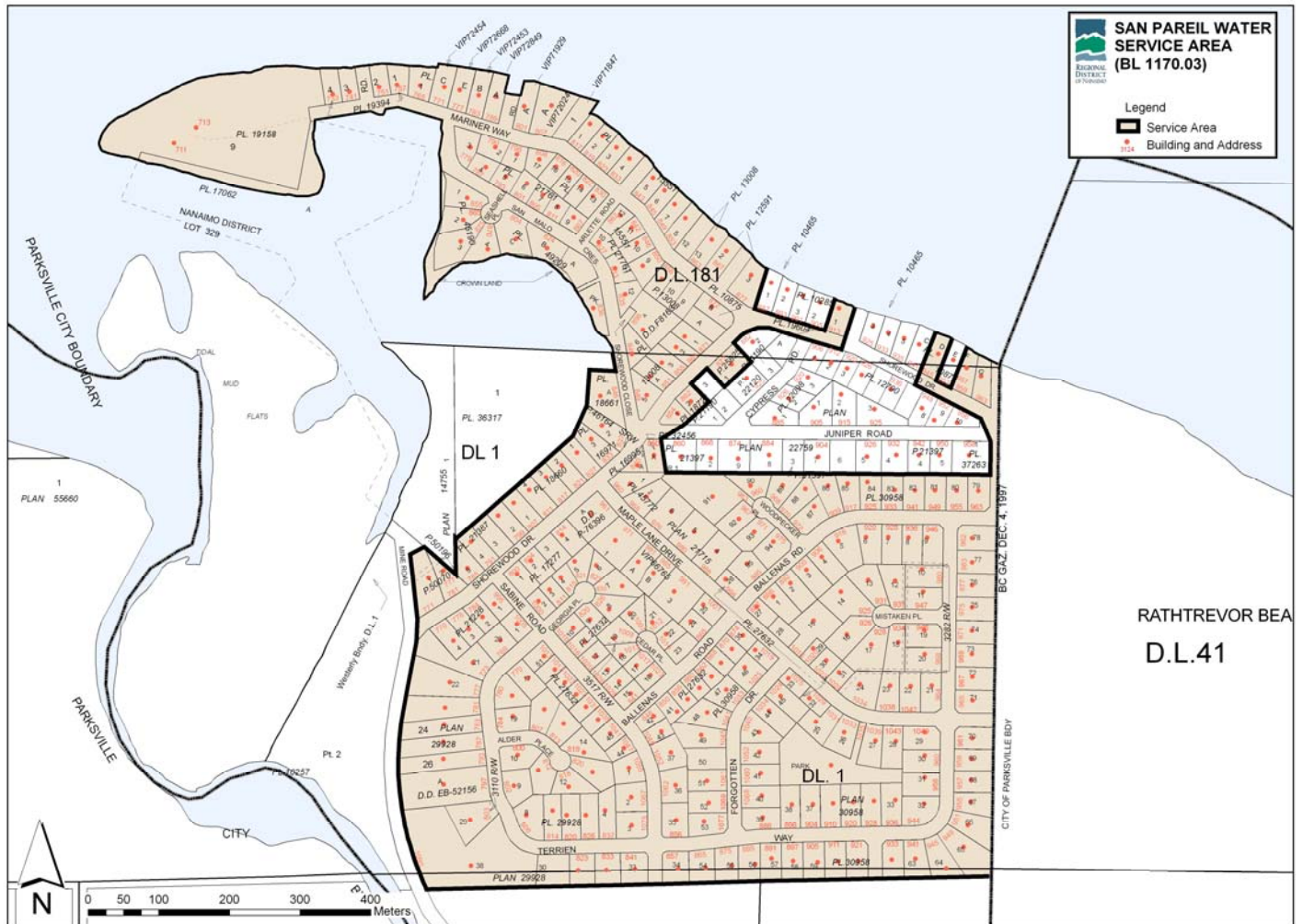
11. Closing

An annual report for the year 2009 will be prepared and submitted to the Vancouver Island Health Authority in the Spring of 2010. Annual reports are also available on our website at www.rdn.bc.ca in the WaterSmart section, under "Communities".

APPENIDX A

MAP OF SAN PAREIL WATER LOCAL SERVICE AREA

SAN PAREIL WATER LOCAL SERVICE AREA



January 17, 2006

APPENDIX B

WATER QUALITY TESTING RESULTS

Distribution Potability Test Results - San Pareil

(Treated Drinking Water)

| Test | Water Quality Guidelines | | | | | | | | | | | | | Date | | |
|-------------------|--------------------------|---------|---------|-----------|--------|------|--------|--------|----------|---------|----------|----------------|----------------|----------------|--|--|
| | Units | CDWG | BCAWQG | | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | May 17 2006 | May 22 2007 | May 27 2008 | | |
| Color | CU | 15 | </=15 | AO | 5 | | 3 | 2 | 2 | 6 | <5 | <5 | 26 | <5 | | |
| Conductivity | uS | | 700 | MAC | 66 | | 82.8 | 68 | 85 | 71.1 | 69 | 65.5 | 62.1 | 56.6 | | |
| TDS | mg/L | 500 | </=500 | AO | 74 | | 40 | 7 | 20 | 53 | 40 | 47 | 26 | 58 | | |
| Hardness (CaCO3) | mg/L | 80-100 | </=500 | AO | 22 | | 27.6 | 24 | 21.6 | 22 | 24 | 21 | 21 | 15 | | |
| pH | pH units | 6.5-8.5 | 6.5-8.5 | AO | 6.75 | | 6.08 | 6.15 | 6.47 | 6.5 | 6.5 | 6.5 | 6.7 | 6.63 | | |
| Turbidity | NTU's | 5 | 1 | MAC | 0.12 | | <.05 | <.05 | 0.23 | 0.5 | <0.5 | <0.5 | <0.5 | <0.5 | | |
| Alkalinity | mg/L | | | | 27.2 | | 23 | 20 | 36 | 17 | 24 | 22 | 21 | 20 | | |
| Chloride | mg/L | 250 | </=250 | AO | 3.8 | | 7.3 | 5.94 | 5.48 | 6.5 | 5.7 | 4.9 | 4.8 | 4.9 | | |
| Fluoride | mg/L | 1.5 | 1.5 | MAC | <.05 | | <.04 | 0.07 | <0.01 | <1.0 | <1.0 | <0.1 | <1.0 | <0.1 | | |
| Sulfate | mg/L | 500 | </=500 | AO | 1.6 | | 1.69 | 1.55 | 1.8 | 10 | <2 | 1.6 | <2.0 | <2.0 | | |
| Nitrate | mg/L | 10 | 10 | MAC | 0.09 | | 0.045 | 0.09 | 0.07 | 0.2 | <0.1 | 0.06 | <0.1 | <0.1 | | |
| Nitrite | mg/L | 1 | | | <.002 | | 0.017 | <.006 | <0.01 | <0.1 | <0.1 | <0.01 | <0.1 | <0.1 | | |
| T-Aluminum | mg/L | | 0.2 | MAC | 0.15 | | 0.013 | 0.016 | 0.021 | 0.016 | 0.01 | <0.005 | 0.011 | <0.05 | | |
| T-Antimony | mg/L | | 0.006 | MAC | | | <.006 | <.006 | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.001 | | |
| T-Arsenic | mg/L | 0.025 | 0.025 | IMAC | <.001 | | <.01 | <.01 | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.001 | | |
| T-Barium | mg/L | 1.0 | 1 | MAC | 0 | | 0.0043 | 0.0038 | 0.003 | 0.003 | 0.003 | 0.002 | 0.002 | <0.005 | | |
| T-Boron | mg/L | 5.0 | 5 | MAC | <.05 | | 0.011 | 0.01 | 0.012 | 0.009 | 0.01 | 0.007 | 0.01 | <0.02 | | |
| T-Cadmium | mg/L | 0.005 | | | <.0002 | | <.0006 | <.0006 | <0.00001 | <.00001 | <0.00001 | <0.00001 | <0.00001 | <0.0003 | | |
| T-Calcium | mg/L | | | | 7.71 | | 9.2 | 7.8 | 7.2 | 7.4 | 7.6 | 6.9 | 6.9 | 5 | | |
| T-Chromium | mg/L | 0.05 | 0.05 | MAC | <.001 | | <.0009 | <.0009 | <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.003 | | |
| T-Copper | mg/L | 1.0 | </=1 | MAC | 0.024 | | 0.012 | 0.01 | 0.011 | 0.008 | 0.01 | 0.005 | 0.007 | 0.005 | | |
| T-Iron | mg/L | 0.3 | </=0.3 | AO | <.05 | | 0.094 | 0.025 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.05 | | |
| T-Lead | mg/L | 0.01 | 0.01 | MAC | 0.001 | | 0.002 | <.002 | 0.0009 | 0.0006 | 0.0009 | 0.0003 | 0.0003 | <0.0005 | | |
| T-Magnesium | mg/L | | </=700 | AO | 0.73 | | 1.13 | 1.1 | 0.9 | 0.9 | 1.1 | 1 | 1 | 0.7 | | |
| T-Manganese | mg/L | 0.05 | </=0.05 | AO | 0.005 | | 0.0012 | 0.0026 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.0005 | | |
| T-Mercury | mg/L | 0.001 | 0.001 | MAC | <.05 | | <.0001 | <.0001 | <0.0002 | <0.0002 | <0.0002 | <0.0001 | <0.0001 | <0.01 | | |
| T-Potassium | mg/L | | | | 0.13 | | <.4 | <.4 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <0.2 | | |
| T-Selenium | mg/L | 0.01 | 0.01 | MAC | <.002 | | 0.007 | <.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.003 | | |
| T-Sodium | mg/L | 200 | </=200 | AO | 3.14 | | 3.9 | 4.1 | 4.7 | 4.3 | <0.4 | 4 | 4 | 4.4 | | |
| T-Uranium | mg/L | 0.1 | 0.1 | MAC | <.0005 | | <.06 | <.02 | <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.002 | | |
| T-Zinc | mg/L | 5 | <5 | AO | <.005 | | 0.0084 | 0.007 | 0.004 | 0.005 | 0.005 | 0.002 | 0.012 | <0.005 | | |
| Total Coliform | cfu/100ml | <1 | <1 | cfu/100ml | <1 | | <1 | n/a | n/a | <1 | <1 | <1 | <1 | <1.0 | | |
| Fecal Coliform | cfu/100ml | <1 | <1 | cfu/100ml | <1 | | <1 | n/a | n/a | <1 | <1 | <1 | <1 | | | |
| E.coli | cfu/100ml | <1 | <1 | cfu/100ml | | | | | | | | <1 | <1 | <1.0 | | |
| Tannins & Lignins | | | | | n/a | | n/a | 0.12 | n/a | n/a | n/a | n/a | n/a | n/a | | |
| Trihalomethanes | mg/l | 0.1 | | MAC | n/a | | n/a | n/a | n/a | n/a | n/a | 0.005 | n/a | n/a | | |

BCAWQG - BC approved water quality guidelines

MAC - maximum acceptable concentrations

IMAC - interim maximum acceptable concentrations

AO - aesthetic objective

Red font indicates non-compliance.

San Pareil Well #1 Water Analysis Results

Canadian Drinking Water Guidelines Package

Red font indicates non-compliance with Canadian Drinking Water Guidelines

MAC=Maximum Acceptable Concentration.

IMAC= Interim Maximum Acceptable Concentration.

AO= Asthetic Objective.

| Parameter | Units | CDWG | BCAWQG | | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 |
|------------------------|-----------|---------|---------|-----------|---------|---------|---------|----------|----------|---------|----------|
| Color | CU | 15 | <=15 | AO | 2 | 11 | <5 | 6 | <5 | <5 | <5 |
| Conductivity | µS | | 700 | MAC | 138 | 92.3 | 82.2 | 83.8 | 130.3 | 68.5 | 80 |
| Total Dissolved Solids | mg/L | 500 | <=500 | AO | 27 | 53 | 73 | 12 | 40 | 100 | 32 |
| Hardness (CaCO3) | mg/L | 80-100 | <=500 | AO | 33.9 | 31 | 29 | 27 | 40 | 23 | 26 |
| pH | pH units | 6.5-8.5 | 6.5-8.5 | AO | 6.32 | 6.39 | 6.6 | 7 | 6.8 | 7.28 | 6.53 |
| Turbidity | NTU's | 5 | 1 | MAC | 0.02 | 0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| Alkalinity | mg/L | | | | 22 | 27 | 26 | 23 | 26 | 26 | 26 |
| Chloride | mg/L | 250 | <=250 | AO | 15.71 | 7.8 | 8.3 | 8.7 | 20.7 | 5.9 | 8.1 |
| Fluoride | mg/L | 1.5 | 1.5 | MAC | 0.05 | <0.6 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| Sulfate | mg/L | 500 | <=500 | AO | 1.47 | 3.9 | 2.5 | <2 | 2 | <2.0 | <2.0 |
| Nitrate (N) | mg/L | 10 | 10 | MAC | 0.07 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Nitrite (N) | mg/L | 1 | | | <0.01 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| T-Aluminum | mg/L | | 0.2 | MAC | 0.007 | 0.032 | 0.012 | 0.008 | 0.007 | 0.012 | <0.005 |
| T-Antimony | mg/L | | 0.006 | MAC | <0.0002 | <0.0002 | <0.0002 | <0.0002 | 0.0002 | <0.0002 | <0.0002 |
| T-Arsenic | mg/L | 0.025 | 0.025 | IMAC | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 |
| T-Barium | mg/L | 1.0 | 1 | MAC | 0.006 | 0.006 | 0.005 | 0.004 | 0.007 | 0.004 | 0.004 |
| T-Boron | mg/L | 5.0 | 5 | MAC | 0.013 | 0.013 | 0.013 | 0.013 | 0.014 | 0.01 | 0.008 |
| T-Cadmium | mg/L | 0.005 | | | 0.00009 | 0.00023 | 0.00014 | <0.00001 | <0.00001 | 0.00006 | <0.00001 |
| T-Calcium | mg/L | | | | 11.1 | 10.2 | 9.7 | 9 | 13.3 | 7.6 | 8.54 |
| T-Chromium | mg/L | 0.05 | 0.05 | MAC | <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0004 |
| T-Copper | mg/L | 1.0 | <=1 | MAC | <0.001 | 0.002 | 0.001 | 0.006 | 0.003 | 0.008 | 0.006 |
| T-Iron | mg/L | 0.3 | <=0.3 | AO | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.02 |
| T-Lead | mg/L | 0.01 | 0.01 | MAC | <0.0001 | 0.0003 | <0.0001 | 0.0014 | 0.0006 | 0.0011 | 0.0009 |
| T-Magnesium | mg/L | | <=700 | AO | 1.5 | 1.4 | 1.1 | 1.1 | 1.7 | 1 | 1.13 |
| T-Manganese | mg/L | 0.05 | <=0.05 | AO | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | 0.001 |
| T-Mercury | mg/L | 0.001 | 0.001 | MAC | <0.0002 | <0.0002 | <0.0002 | <0.0001 | <0.0001 | <0.0001 | <0.01 |
| T-Potassium | mg/L | | | | <0.4 | 0.5 | <0.4 | <0.4 | <0.4 | <0.4 | 0.2 |
| T-Selenium | mg/L | 0.01 | 0.01 | MAC | <0.0002 | <0.0002 | <0.0002 | 0.0002 | <0.0002 | 0.0003 | <0.0006 |
| T-Sodium | mg/L | 200 | <=200 | AO | 5 | 4.6 | 4.5 | 5.2 | 6.3 | 4.2 | 3.95 |
| T-Uranium | mg/L | 0.1 | 0.1 | MAC | <0.0005 | <0.0003 | <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0004 |
| T-Zinc | mg/L | 5 | <5 | AO | 0.001 | 0.009 | 0.001 | 0.012 | 0.005 | 0.013 | 0.008 |
| Total Coliform | cfu/100ml | <1 | <1 | cfu/100ml | | | *>200 | *39 | *38 | *3 | *6.4 |
| Fecal Coliform | cfu/100ml | <1 | <1 | cfu/100ml | | | <1 | <1 | <1 | <1 | <1 |
| E.coli | cfu/100ml | <1 | <1 | cfu/100ml | | | | | <1 | <1 | <1 |

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

*Resampled and had <1 for all Coliforms

San Pareil Well #2 Water Analysis Results

Canadian Drinking Water Guidelines Package

Red font indicates non-compliance with Canadian Drinking Water Guidelines

(shallow well)

MAC=Maximum Acceptable Concentration.

IMAC= Interim Maximum Acceptable Concentration.

AO= Asthetic Objective.

Well off

| Parameter | Units | CDWG | BCAWQG | | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 |
|------------------------|-----------|---------|---------|-----------|---------|---------|---------|----------|----------|----------|------|
| Color | CU | 15 | <=15 | AO | 3 | <5 | <5 | 10 | <5 | 6 | |
| Conductivity | µS | | 700 | MAC | 106 | 80.7 | 89.5 | 92.2 | 117.4 | 75 | |
| Total Dissolved Solids | mg/L | 500 | <=500 | AO | 13 | 47 | 73 | 70 | 12 | 40 | |
| Hardness (CaCO3) | mg/L | 80-100 | <=500 | AO | 31.7 | 26 | 32 | 30 | 37 | 25 | |
| pH | pH units | 6.5-8.5 | 6.5-8.5 | AO | 6.52 | 6.29 | 6.4 | 6.8 | 6.6 | 7.19 | |
| Turbidity | NTU's | 5 | 1 | MAC | 0.02 | 0.6 | <0.5 | 1.6 | 0.8 | <0.5 | |
| Alkalinity | mg/L | | | | 20 | 23 | 26 | 23 | 23 | 20 | |
| Chloride | mg/L | 250 | <=250 | AO | 14.19 | 8.3 | 10.2 | 11.7 | 18.7 | 6.8 | |
| Fluoride | mg/L | 1.5 | 1.5 | MAC | 0.05 | <0.6 | <1.0 | <1.0 | <1.0 | <1.0 | |
| Sulfate | mg/L | 500 | <=500 | AO | 1.35 | 3.6 | 2.2 | <2 | <2.0 | <2.0 | |
| Nitrate (N) | mg/L | 10 | 10 | MAC | 0.08 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | |
| Nitrite (N) | mg/L | 1 | | | <0.01 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | |
| T-Aluminum | mg/L | | 0.2 | MAC | 0.009 | 0.038 | 0.011 | 0.013 | 0.013 | 0.011 | |
| T-Antimony | mg/L | | 0.006 | MAC | <0.0002 | <0.0002 | <0.0002 | <0.0002 | 0.0002 | <0.0002 | |
| T-Arsenic | mg/L | 0.025 | 0.025 | IMAC | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 | |
| T- Barium | mg/L | 1.0 | 1 | MAC | 0.005 | 0.003 | 0.005 | 0.005 | 0.006 | 0.004 | |
| T-Boron | mg/L | 5.0 | 5 | MAC | 0.012 | 0.012 | 0.014 | 0.013 | 0.013 | 0.011 | |
| T-Cadmium | mg/L | 0.005 | | | 0.0005 | 0.00095 | 0.00008 | <0.00001 | <0.00001 | <0.00001 | |
| T-Calcium | mg/L | | | | 10.1 | 8.5 | 10.7 | 10 | 12.2 | 8.2 | |
| T-Chromium | mg/L | 0.05 | 0.05 | MAC | <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 | |
| T-Copper | mg/L | 1.0 | <=1 | MAC | <0.001 | 0.003 | <0.001 | 0.007 | 0.004 | 0.005 | |
| T-Iron | mg/L | 0.3 | <=0.3 | AO | <0.1 | <0.1 | <0.1 | 0.5 | 0.2 | 0.1 | |
| T-Lead | mg/L | 0.01 | 0.01 | MAC | 0.0001 | 0.0004 | <0.0001 | 0.0014 | 0.0008 | 0.0005 | |
| T-Magnesium | mg/L | | <=700 | AO | 1.5 | 1.2 | 1.3 | 1.3 | 1.6 | 1.1 | |
| T-Manganese | mg/L | 0.05 | <=0.05 | AO | <0.005 | <0.005 | <0.005 | 0.016 | 0.026 | 0.019 | |
| T-Mercury | mg/L | 0.001 | 0.001 | MAC | <0.0002 | <0.0002 | <0.0002 | <0.0001 | <0.0001 | <0.0001 | |
| T-Potassium | mg/L | | | | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | <0.4 | |
| T-Selenium | mg/L | 0.01 | 0.01 | MAC | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 | 0.0003 | |
| T-Sodium | mg/L | 200 | <=200 | AO | 3.7 | 4.3 | 4.8 | 5.4 | 5.5 | 4.2 | |
| T-Uranium | mg/L | 0.1 | 0.1 | MAC | <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 | |
| T-Zinc | mg/L | 5 | <5 | AO | 0.002 | 0.003 | 0.001 | 0.009 | 0.004 | 0.006 | |
| Total Coliform | cfu/100ml | <1 | <1 | cfu/100ml | | | *310 | *7 | *131 | *23 | |
| Fecal Coliform | cfu/100ml | <1 | <1 | cfu/100ml | | | <1 | <1 | <1 | <1 | |
| E.coli | cfu/100ml | <1 | <1 | cfu/100ml | | | | | <1 | <1 | |

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

*Resampled and had <1 for all Coliforms

San Pareil Well #3 Water Analysis Results

Canadian Drinking Water Guidelines Package

Red font indicates non-compliance with Canadian Drinking Water Guidelines

MAC=Maximum Acceptable Concentration.

IMAC= Interim Maximum Acceptable Concentration.

AO= Asthetic Objective.

Well Off

| Parameter | Units | CDWG | BCAWQG | | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 |
|-------------------------------|-----------|---------|---------|-----------|----------|----------|----------|----------|----------|----------|------|
| Color | CU | 15 | <15 | AO | 2 | <5 | <5 | 5 | <5 | <5 | |
| Conductivity | µS | | 700 | MAC | 108 | 101.1 | 85.8 | 97.4 | 119.4 | 76.8 | |
| Total Dissolved Solids | mg/L | 500 | <1500 | AO | 27 | 60 | 67 | 78 | 38 | 107 | |
| Hardness (CaCO ₃) | mg/L | 80-100 | <1500 | AO | 32.5 | 34 | 30 | 33 | 37 | 25 | |
| pH | pH units | 6.5-8.5 | 6.5-8.5 | AO | 6.53 | 6.45 | 6.6 | 6.9 | 6.7 | 7.2 | |
| Turbidity | NTU's | 5 | 1 | MAC | 0.05 | 0.41 | <0.5 | <0.5 | <0.5 | <0.5 | |
| Alkalinity | mg/L | | | | 21 | 26 | 24 | 24 | 22 | 21 | |
| Chloride | mg/L | 250 | <1500 | AO | 17.94 | 11.4 | 10 | 12.6 | 19.7 | 7.2 | |
| Fluoride | mg/L | 1.5 | 1.5 | MAC | 0.05 | <0.6 | <1.0 | <1.0 | <1.0 | <1.0 | |
| Sulfate | mg/L | 500 | <1500 | AO | 1.4 | 3.5 | 2.1 | <2 | 2.2 | <2.0 | |
| Nitrate (N) | mg/L | 10 | 10 | MAC | 0.07 | <0.1 | <0.1 | 0.1 | <0.1 | <0.1 | |
| Nitrite (N) | mg/L | 1 | | | <0.01 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | |
| T-Aluminum | mg/L | | 0.2 | MAC | 0.006 | 0.006 | <0.005 | 0.006 | 0.007 | 0.008 | |
| T-Antimony | mg/L | | 0.006 | MAC | <0.0002 | <0.0002 | <0.0002 | <0.0002 | 0.0002 | <0.0002 | |
| T-Arsenic | mg/L | 0.025 | 0.025 | IMAC | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 | |
| T-Barium | mg/L | 1.0 | 1 | MAC | 0.003 | 0.003 | 0.003 | 0.003 | 0.003 | 0.002 | |
| T-Boron | mg/L | 5.0 | 5 | MAC | 1.012 | 0.015 | 0.014 | 0.014 | 0.014 | 0.011 | |
| T-Cadmium | mg/L | 0.005 | | | <0.00001 | <0.00001 | <0.00001 | <0.00001 | <0.00001 | <0.00001 | |
| T-Calcium | mg/L | | | | 10.4 | 10.9 | 10 | 10.9 | 12.3 | 8 | |
| T-Chromium | mg/L | 0.05 | 0.05 | MAC | <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 | |
| T-Copper | mg/L | 1.0 | <1 | MAC | <0.001 | 0.001 | 0.002 | 0.006 | 0.004 | 0.004 | |
| T-Iron | mg/L | 0.3 | <0.3 | AO | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | |
| T-Lead | mg/L | 0.01 | 0.01 | MAC | 0.0021 | 0.0012 | 0.0014 | 0.0012 | 0.0006 | 0.0004 | |
| T-Magnesium | mg/L | | <1500 | AO | 1.6 | 1.6 | 1.3 | 1.5 | 1.6 | 1.1 | |
| T-Manganese | mg/L | 0.05 | <0.05 | AO | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | <0.005 | |
| T-Mercury | mg/L | 0.001 | 0.001 | MAC | <0.0002 | <0.0002 | <0.0002 | <0.0001 | <0.0001 | <0.0001 | |
| T-Potassium | mg/L | | | | <0.4 | 0.4 | <0.4 | 0.5 | <0.4 | <0.4 | |
| T-Selenium | mg/L | 0.01 | 0.01 | MAC | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 | <0.0002 | |
| T-Sodium | mg/L | 200 | <1500 | AO | 4.2 | 4.9 | 4.7 | 5.6 | 5.4 | 4.3 | |
| T-Uranium | mg/L | 0.1 | 0.1 | MAC | <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 | <0.0005 | |
| T-Zinc | mg/L | 5 | <5 | AO | 0.004 | 0.002 | 0.003 | 0.009 | 0.006 | 0.005 | |
| Total Coliform | cfu/100ml | <1 | <1 | cfu/100ml | | | <1 | *2 | *59 | *2 | |
| Fecal Coliform | cfu/100ml | <1 | <1 | cfu/100ml | | | <1 | <1 | <1 | <1 | |
| E.coli | cfu/100ml | <1 | <1 | cfu/100ml | | | | <1 | <1 | <1 | |

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

*Resampled and had <1 for all Coliforms

San Pareil Well #4 Water Analysis Results

Canadian Drinking Water Guidelines Package

Red font indicates non-compliance with Canadian Drinking Water Guidelines

MAC=Maximum Acceptable Concentration.

IMAC= Interim Maximum Acceptable Concentration.

AO= Asthetic Objective.

| Parameter | Units | CDWG | BCAWQG | | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 |
|------------------------|-----------|---------|---------|-----------|---------|------|------|------|------|------|------|
| Color | CU | 15 | <=15 | AO | 23 | | | | | | |
| Conductivity | µS | | 700 | MAC | 80 | | | | | | |
| Total Dissolved Solids | mg/L | 500 | <=500 | AO | 200 | | | | | | |
| Hardness (CaCO3) | mg/L | 80-100 | <=500 | AO | 120 | | | | | | |
| pH | pH units | 6.5-8.5 | 6.5-8.5 | AO | 7.73 | | | | | | |
| Turbidity | NTU's | 5 | 1 | MAC | <0.5 | | | | | | |
| Alkalinity | mg/L | | | | 25 | | | | | | |
| Chloride | mg/L | 250 | <=250 | AO | 3.7 | | | | | | |
| Fluoride | mg/L | 1.5 | 1.5 | MAC | <1.0 | | | | | | |
| Sulfate | mg/L | 500 | <=500 | AO | <2.0 | | | | | | |
| Nitrate (N) | mg/L | 10 | 10 | MAC | <0.1 | | | | | | |
| Nitrite (N) | mg/L | 1 | | | <0.1 | | | | | | |
| T-Aluminum | mg/L | | 0.2 | MAC | <0.005 | | | | | | |
| T-Antimony | mg/L | | 0.006 | MAC | <0.0002 | | | | | | |
| T-Arsenic | mg/L | 0.025 | 0.025 | IMAC | 0.0022 | | | | | | |
| T-Barium | mg/L | 1.0 | 1 | MAC | 0.009 | | | | | | |
| T-Boron | mg/L | 5.0 | 5 | MAC | 0.079 | | | | | | |
| T-Cadmium | mg/L | 0.005 | | | 0.00001 | | | | | | |
| T-Calcium | mg/L | | | | 29.2 | | | | | | |
| T-Chromium | mg/L | 0.05 | 0.05 | MAC | 0.0004 | | | | | | |
| T-Copper | mg/L | 1.0 | <=1 | MAC | 0.015 | | | | | | |
| T-Iron | mg/L | 0.3 | <=0.3 | AO | 0.46 | | | | | | |
| T-Lead | mg/L | 0.01 | 0.01 | MAC | 0.0007 | | | | | | |
| T-Magnesium | mg/L | | <=700 | AO | 11 | | | | | | |
| T-Manganese | mg/L | 0.05 | <=0.05 | AO | 0.247 | | | | | | |
| T-Mercury | mg/L | 0.001 | 0.001 | MAC | <0.01 | | | | | | |
| T-Potassium | mg/L | | | | 2.1 | | | | | | |
| T-Selenium | mg/L | 0.01 | 0.01 | MAC | <0.0006 | | | | | | |
| T-Sodium | mg/L | 200 | <=200 | AO | 21 | | | | | | |
| T-Uranium | mg/L | 0.1 | 0.1 | MAC | <0.0004 | | | | | | |
| T-Zinc | mg/L | 5 | <5 | AO | 0.2 | | | | | | |
| Total Coliform | cfu/100ml | <1 | <1 | cfu/100ml | *1 | | | | | | |
| Fecal Coliform | cfu/100ml | <1 | <1 | cfu/100ml | <1 | | | | | | |
| E.coli | cfu/100ml | <1 | <1 | cfu/100ml | <1 | | | | | | |

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

*Resampled and had <1 for all Coliforms



Regional District of Nanaimo - Utilities Department

San Pareil Water Analysis - Monthly Report



| Date | Sample Location (Address) | Fecal Coli * Health Dep | Total Coli * Health Dep | Total Coli RDN | E Coli RDN | Temp ° C | pH | Cl ₂ ppm | TDS ppm | Sal % | Cond uS/cm | Fe ppm | Mn ppm |
|--------|------------------------------|----------------------------|----------------------------|-------------------|---------------|-------------|-----|------------------------|------------|----------|---------------|-----------|-----------|
| Jan-08 | | | | | | | | | | | | | |
| 08-Jan | 813 Alder | 0 | 0 | 0 | 0 | 9 | 6.8 | 0.75 | 34 | 0 | 72.4 | 0.02 | 0.001 |
| 10-Jan | 962 Ballenas | | | 0 | 0 | | | 0.52 | | | | | |
| 15-Jan | 995 Sabine | 0 | 0 | 0 | 0 | 8 | 6.9 | 0.57 | 37 | 0 | 76 | | |
| 17-Jan | 962 Ballenas | | | 0 | 0 | | | 0.41 | | | | | |
| 22-Jan | Lot 4 San Malo | 0 | 0 | | | 7 | 6.8 | 0.64 | 38 | 0 | 83 | | |
| 24-Jan | 962 Ballenas | | | | | | | | | | | | |
| 29-Jan | 875 Seashell | 0 | 0 | 0 | 0 | 6 | | 0.68 | | | | | |
| | | | | | | | | | | | | | |
| | Average | 0 | 0 | 0 | 0 | 7.5 | 6.8 | 0.60 | 36.3 | 0.0 | 77.1 | 0.02 | 0.001 |
| | Maximum | 0 | 0 | 0 | 0 | 9 | 6.9 | 0.75 | 38 | 0 | 83 | 0.02 | 0.001 |
| | Minimum | 0 | 0 | 0 | 0 | 6 | 6.8 | 0.41 | 34 | 0 | 72.4 | 0.02 | 0.001 |

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

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

* Yellow Column Coliform tests are done by Health Department

Green tests are completed by RDN

Comments:

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



Regional District of Nanaimo - Utilities Department

San Pareil Water Analysis - Monthly Report



| Date | Sample Location (Address) | Fecal Coli * Health Dep | Total Coli * Health Dep | Total Coli RDN | E Coli RDN | Temp ° C | pH | Cl ₂ ppm | TDS ppm | Sal % | Cond uS/cm | Fe ppm | Mn ppm |
|---------|------------------------------|----------------------------|----------------------------|-------------------|---------------|-------------|-----|------------------------|------------|----------|---------------|-----------|-----------|
| Feb-08 | | | | | | | | | | | | | |
| 05-Feb | 813 Alder Pl | 0 | 0 | 0 | 0 | 8 | 6.6 | 0.84 | 36 | 0 | 77 | 0.04 | 0.002 |
| 07-Feb | 962 Ballenas | | | 0 | 0 | | | 0.67 | | | | | |
| 12-Feb | 875 Seashell | 0 | 0 | 0 | 0 | 7 | 6.8 | 0.64 | 22 | 0 | 76 | | |
| 20-Feb | 995 Sabine | | | 0 | 0 | 8 | 6.6 | 0.58 | 35 | 0 | 74 | | |
| 21-Feb | 962 Ballenas | 0 | 0 | 0 | 0 | | | 0.6 | | | | | |
| 26-Feb | Lot 4 San Malo | 0 | 0 | 0 | 0 | 8 | 6.9 | 0.58 | 36 | 0 | 77 | | |
| 28-Feb | 962 Ballenas | | | | | | | 0.59 | | | | | |
| Average | | 0 | 0 | 0 | 0 | 7.8 | 6.7 | 0.64 | 32.3 | 0.0 | 76.0 | 0.04 | 0.002 |
| Maximum | | 0 | 0 | 0 | 0 | 8 | 6.9 | 0.84 | 36 | 0 | 77 | 0.04 | 0.002 |
| Minimum | | 0 | 0 | 0 | 0 | 7 | 6.6 | 0.58 | 22 | 0 | 74 | 0.04 | 0.002 |

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

* Yellow Column Coliform tests are done by Health Department

Green tests are completed by RDN

Comments:

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



Regional District of Nanaimo - Utilities Department

San Pareil Water Analysis - Monthly Report



| Date Mar-08 | Sample Location (Address) | Fecal Coli * Health Dep | Total Coli * Health Dep | Total Coli RDN | E Coli RDN | Temp ° C | pH | Cl ₂ ppm | TDS ppm | Sal % | Cond uS/cm | Fe ppm | Mn ppm |
|----------------|------------------------------|----------------------------|----------------------------|-------------------|---------------|-------------|-----|------------------------|------------|----------|---------------|-----------|-----------|
| 04-Mar | 813 Alder Pl | 0 | 0 | 0 | 0 | 8 | 6.9 | 0.67 | 36 | 0 | 76 | 0.03 | 0.003 |
| 06-Mar | 962 Ballenas Rd | | | 0 | 0 | | | 0.47 | | | | | |
| 12-Mar | 995 Sabine Rd | 0 | 0 | 0 | 0 | 8 | 6.6 | 0.18 | 31 | 0 | 66 | | |
| 13-Mar | 962 Ballenas Rd | | | 0 | 0 | | | 0.43 | | | | | |
| 18-Mar | 875 Seashell | 0 | 0 | 0 | 0 | 8 | 6.4 | 0.34 | 32 | 0 | 68 | | |
| 26-Mar | Lot 4 San Malo | 0 | 0 | | | 8 | 6.9 | 0.44 | 31 | 0 | 68 | | |
| | Average | 0 | 0 | 0 | 0 | 8.0 | 6.7 | 0.42 | 32.5 | 0.0 | 69.5 | 0.03 | 0.003 |
| | Maximum | 0 | 0 | 0 | 0 | 8 | 6.9 | 0.67 | 36 | 0 | 76 | 0.03 | 0.003 |
| | Minimum | 0 | 0 | 0 | 0 | 8 | 6.4 | 0.18 | 31 | 0 | 66 | 0.03 | 0.003 |

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

* Yellow Column Coliform tests are done by Health Department

Green tests are completed by RDN

Comments:

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



Regional District of Nanaimo - Utilities Department

San Pareil Water Analysis - Monthly Report



| Date Apr-08 | Sample Location (Address) | Fecal Coli * Health Dep | Total Coli * Health Dep | Total Coli RDN | E Coli RDN | Temp ° C | pH | Cl ₂ ppm | TDS ppm | Sal % | Cond uS/cm | Fe ppm | Mn ppm |
|----------------|------------------------------|----------------------------|----------------------------|-------------------|---------------|-------------|-----|------------------------|------------|----------|---------------|-----------|-----------|
| 02-Apr | 995 Sabine Rd | 0 | 0 | 0 | 0 | 8 | 6.7 | 0.65 | 33 | 0 | 71 | 0.04 | |
| 08-Apr | 813 Alder Pl | 0 | 0 | 0 | 0 | 8 | 6.7 | 0.42 | 32 | 0 | 68 | | |
| 10-Apr | 962 Ballenas | | | | | | | 0.16 | | | | | 0 |
| 15-Apr | Lot 4 San Malo | 0 | 0 | 0 | 0 | 10 | 6.7 | 0.34 | 37 | 0 | 78 | | 0 |
| 17-Apr | 962 Ballenas | | | | | | | 0.25 | | | | | |
| 22-Apr | 875 Seashell Pl | 0 | 0 | 0 | 0 | 10 | 6.8 | 0.31 | 35 | 0 | 74 | | |
| 24-Apr | 962 Ballenas | | | | | | | 0.33 | | | | | |
| | Average | 0 | 0 | 0 | 0 | 9.0 | 6.7 | 0.35 | 34.3 | 0.0 | 72.8 | 0.04 | 0 |
| | Maximum | 0 | 0 | 0 | 0 | 10 | 6.8 | 0.65 | 37 | 0 | 78 | 0.04 | 0 |
| | Minimum | 0 | 0 | 0 | 0 | 8 | 6.7 | 0.16 | 32 | 0 | 68 | 0.04 | 0 |

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

* Yellow Column Coliform tests are done by Health Department

Green tests are completed by RDN

Comments:

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



Regional District of Nanaimo - Utilities Department

San Pareil Water Analysis - Monthly Report



| Date May-08 | Sample Location (Address) | Fecal Coli * Health Dep | Total Coli * Health Dep | Total Coli RDN | E Coli RDN | Temp ° C | pH | Cl ₂ ppm | TDS ppm | Sal % | Cond uS/cm | Fe ppm | Mn ppm |
|----------------|------------------------------|----------------------------|----------------------------|-------------------|---------------|-------------|-----|------------------------|------------|----------|---------------|-----------|-----------|
| 06-May | 995 Sabine Rd | 0 | 0 | 0 | 0 | 10 | 6.9 | 0.75 | 33 | 0 | 70 | 0.02 | 0.001 |
| 14-May | 875 Seashell Pl | 0 | 0 | | | | | | | | | | |
| 15-May | 962 Ballenas Rd | | | 0 | 0 | | | 0.42 | | | | | |
| 21-May | Lot 4 San Malo | 0 | 0 | 0 | 0 | 12 | 6.8 | 0.52 | 29 | 0 | 61 | | |
| 27-May | 813 Alder Pl | 0 | 0 | 0 | 0 | 10 | 6.8 | 0.76 | 28 | 0 | 59 | | |
| 29-May | 962 Ballenas Rd | | | | | | | 0.57 | | | | | |
| | Average | 0 | 0 | 0 | 0 | 10.7 | 6.8 | 0.60 | 30.0 | 0.0 | 63.3 | 0.02 | 0.001 |
| | Maximum | 0 | 0 | 0 | 0 | 12 | 6.9 | 0.76 | 33 | 0 | 70 | 0.02 | 0.001 |
| | Minimum | 0 | 0 | 0 | 0 | 10 | 6.8 | 0.42 | 28 | 0 | 59 | 0.02 | 0.001 |

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

* Yellow Column Coliform tests are done by Health Department

Green tests are completed by RDN

Comments:

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



Regional District of Nanaimo - Utilities Department

San Pareil Water Analysis - Monthly Report



| Date Jun-08 | Sample Location (Address) | Fecal Coli * Health Dep | Total Coli * Health Dep | Total Coli RDN | E Coli RDN | Temp ° C | pH | Cl ₂ ppm | TDS ppm | Sal % | Cond uS/cm | Fe ppm | Mn ppm |
|----------------|------------------------------|----------------------------|----------------------------|-------------------|---------------|-------------|-----|------------------------|------------|----------|---------------|-----------|-----------|
| 04-Jun | 995 Sabine Rd | 0 | 0 | 0 | 0 | 11 | 6.7 | 0.75 | 30 | 0 | 63 | 0.03 | 0.001 |
| 05-Jun | 962 Ballenas | | | 0 | 0 | | | 0.48 | | | | | |
| 11-Jun | Lot 4 San Malo | 0 | 0 | 0 | 0 | 14 | 6.6 | 0.46 | 32 | 0 | 67 | | |
| 17-Jun | 875 Seashell | 0 | 0 | 0 | 0 | 13 | 6.7 | 0.02 | 32 | 0 | 68 | | |
| 19-Jun | 962 Ballenas | | | 0 | 0 | | | 0.53 | | | | | |
| 24-Jun | 813 Alder Pl | 0 | 0 | 0 | 0 | 11 | 6.5 | 0.74 | 31 | 0 | 66 | | |
| | Average | 0 | 0 | 0 | 0 | 12.3 | 6.6 | 0.50 | 31.3 | 0.0 | 66.0 | 0.03 | 0.001 |
| | Maximum | 0 | 0 | 0 | 0 | 14 | 6.7 | 0.75 | 32 | 0 | 68 | 0.03 | 0.001 |
| | Minimum | 0 | 0 | 0 | 0 | 11 | 6.5 | 0.02 | 30 | 0 | 63 | 0.03 | 0.001 |

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

* Yellow Column Coliform tests are done by Health Department

Green tests are completed by RDN

Comments:

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



Regional District of Nanaimo - Utilities Department

San Pareil Water Analysis - Monthly Report



| Date Jul-08 | Sample Location (Address) | Fecal Coli * Health Dep | Total Coli * Health Dep | Total Coli RDN | E Coli RDN | Temp ° C | pH | Cl ₂ ppm | TDS ppm | Sal % | Cond uS/cm | Fe ppm | Mn ppm |
|----------------|------------------------------|----------------------------|----------------------------|-------------------|---------------|-------------|-----|------------------------|------------|----------|---------------|-----------|-----------|
| 02-Jul | 995 Sabine Rd | 0 | 0 | | | | | | | | | | |
| 09-Jul | 813 Alder Place | 0 | 0 | 0 | 0 | 12 | 6.8 | 0.46 | 32 | 0 | 68 | 0.02 | 0 |
| 15-Jul | Lot 4 San Malo | 0 | 0 | 0 | 0 | 16 | 6.8 | 0.67 | 39 | 0 | 81 | | |
| 22-Jul | 875 Seashell | 0 | 0 | 0 | 0 | 16 | 6.8 | 0.35 | 40 | 0 | 85 | | |
| 29-Jul | 995 Sabine Rd | | | 0 | 0 | 15 | 6.7 | 0.03 | 41 | 0 | 87 | | |
| | Average | 0 | 0 | 0 | 0 | 14.8 | 6.8 | 0.38 | 38.0 | 0.0 | 80.3 | 0.02 | 0 |
| | Maximum | 0 | 0 | 0 | 0 | 16 | 6.8 | 0.67 | 41 | 0 | 87 | 0.02 | 0 |
| | Minimum | 0 | 0 | 0 | 0 | 12 | 6.7 | 0.03 | 32 | 0 | 68 | 0.02 | 0 |

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

* Yellow Column Coliform tests are done by Health Department

Green tests are completed by RDN

Comments:

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



Regional District of Nanaimo - Utilities Department

San Pareil Water Analysis - Monthly Report



| Date Aug-08 | Sample Location (Address) | Fecal Coli * Health Dep | Total Coli * Health Dep | Total Coli RDN | E Coli RDN | Temp ° C | pH | Cl ₂ ppm | TDS ppm | Sal % | Cond uS/cm | Fe ppm | Mn ppm |
|----------------|------------------------------|----------------------------|----------------------------|-------------------|---------------|-------------|-----|------------------------|------------|----------|---------------|-----------|-----------|
| 06-Aug | 995 Sabine Rd | 0 | 0 | 0 | 0 | 16 | 6.8 | 0.43 | 44 | 0 | 93 | 0.03 | 0.001 |
| 12-Aug | 813 Alder Pl | 0 | 0 | 0 | 0 | 13 | 6.6 | 0.32 | 46 | 0 | 97 | | |
| 19-Aug | Lot 4 San Malo | 0 | 0 | 0 | 0 | 16 | 6.6 | 0.04 | 45 | 0 | 96.7 | | |
| 26-Aug | 875 Seashell | 0 | 0 | 0 | 0 | 18 | 6.6 | 0.24 | 50 | 0.1 | 101.4 | | |
| | Average | 0 | 0 | 0 | 0 | 15.8 | 6.7 | 0.26 | 46.3 | 0.0 | 97.0 | 0.03 | 0.001 |
| | Maximum | 0 | 0 | 0 | 0 | 18 | 6.8 | 0.43 | 50 | 0.1 | 101.4 | 0.03 | 0.001 |
| | Minimum | 0 | 0 | 0 | 0 | 13 | 6.6 | 0.04 | 44 | 0 | 93 | 0.03 | 0.001 |

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

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

* Yellow Column Coliform tests are done by Health Department

Green tests are completed by RDN

Comments:

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



Regional District of Nanaimo - Utilities Department

San Pareil Water Analysis - Monthly Report



| Date Sep-08 | Sample Location (Address) | Fecal Coli * Health Dep | Total Coli * Health Dep | Total Coli RDN | E Coli RDN | Temp ° C | pH | Cl ₂ ppm | TDS ppm | Sal % | Cond uS/cm | Fe ppm | Mn ppm |
|----------------|------------------------------|----------------------------|----------------------------|-------------------|---------------|-------------|-----|------------------------|------------|----------|---------------|-----------|-----------|
| 03-Sep | 995 Sabine | 0 | 0 | | | | | | | | | | |
| 09-Sep | Lot 4 San Malo | 0 | 0 | | | | | | | | | | |
| 16-Sep | 875 Seashell | 0 | 0 | 0 | 0 | 14 | 6.7 | 0.18 | 45 | 0 | 95 | 0.03 | 0.001 |
| 24-Sep | 813 Alder Pl | 0 | 0 | | | | | | | | | | |
| | Average | 0 | 0 | 0 | 0 | 14.0 | 6.7 | 0.18 | 45.0 | 0.0 | 95.0 | 0.03 | 0.001 |
| | Maximum | 0 | 0 | 0 | 0 | 14 | 6.7 | 0.18 | 45 | 0 | 95 | 0.03 | 0.001 |
| | Minimum | 0 | 0 | 0 | 0 | 14 | 6.7 | 0.18 | 45 | 0 | 95 | 0.03 | 0.001 |

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

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

* Yellow Column Coliform tests are done by Health Department

Green tests are completed by RDN

Comments:

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



Regional District of Nanaimo - Utilities Department

San Pareil Water Analysis - Monthly Report



| Date Oct-08 | Sample Location (Address) | Fecal Coli * Health Dep | Total Coli * Health Dep | Total Coli RDN | E Coli RDN | Temp ° C | pH | Cl ₂ ppm | TDS ppm | Sal % | Cond uS/cm | Fe ppm | Mn ppm |
|----------------|------------------------------|----------------------------|----------------------------|-------------------|---------------|-------------|-----|------------------------|------------|----------|---------------|-----------|-----------|
| 07-Oct | 995 Sabine Rd | 0 | 0 | 0 | 0 | 14 | 6.7 | 0.39 | 48 | 0 | 102 | 0.04 | 0.002 |
| 15-Oct | 875 Seashell | 0 | 0 | 0 | 0 | 13 | 6.7 | 0.41 | 44 | 0 | 93 | | |
| 21-Oct | 813 Alder Pl | 0 | 0 | 0 | 0 | 12 | 6.6 | 0.03 | 41 | 0 | 87 | | |
| 29-Oct | Lot 4 San Malo | 0 | 0 | 0 | 0 | 11 | 6.8 | 0.45 | 45 | 0 | 94 | | |
| | Average | 0 | 0 | 0 | 0 | 12.5 | 6.7 | 0.32 | 44.5 | 0.0 | 94.0 | 0.04 | 0.002 |
| | Maximum | 0 | 0 | 0 | 0 | 14 | 6.8 | 0.45 | 48 | 0 | 102 | 0.04 | 0.002 |
| | Minimum | 0 | 0 | 0 | 0 | 11 | 6.6 | 0.03 | 41 | 0 | 87 | 0.04 | 0.002 |

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

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

* Yellow Column Coliform tests are done by Health Department

Green tests are completed by RDN

Comments:

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



Regional District of Nanaimo - Utilities Department

San Pareil Water Analysis - Monthly Report



| Date Nov-08 | Sample Location (Address) | Fecal Coli * Health Dep | Total Coli * Health Dep | Total Coli RDN | E Coli RDN | Temp ° C | pH | Cl ₂ ppm | TDS ppm | Sal % | Cond uS/cm | Fe ppm | Mn ppm |
|----------------|------------------------------|----------------------------|----------------------------|-------------------|---------------|-------------|-----|------------------------|------------|----------|---------------|-----------|-----------|
| 04-Nov | 813 Alder Pl | 0 | 0 | 0 | 0 | 10 | 6.5 | 0.34 | 43 | 0 | 92 | 0.01 | 0.001 |
| 12-Nov | 875 Seashell | 0 | 0 | 0 | 0 | 11 | 6.5 | 0.41 | 39 | 0 | 82 | | |
| 18-Nov | 995 Sabine Rd | 0 | 0 | 0 | 0 | 12 | 6.7 | 0.45 | 40 | 0 | 85 | | |
| 25-Nov | Lot 4 San Malo | 0 | 0 | 0 | 0 | 10 | 6.7 | 0.36 | 39 | 0 | 87 | | |
| | Average | 0 | 0 | 0 | 0 | 10.8 | 6.6 | 0.39 | 40.3 | 0.0 | 86.5 | 0.01 | 0.001 |
| | Maximum | 0 | 0 | 0 | 0 | 12 | 6.7 | 0.45 | 43 | 0 | 92 | 0.01 | 0.001 |
| | Minimum | 0 | 0 | 0 | 0 | 10 | 6.5 | 0.34 | 39 | 0 | 82 | 0.01 | 0.001 |

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Regional District of Nanaimo - Utilities Department

San Pareil Water Analysis - Monthly Report



| Date Dec-08 | Sample Location (Address) | Fecal Coli * Health Dep | Total Coli * Health Dep | Total Coli RDN | E Coli RDN | Temp ° C | pH | Cl ₂ ppm | TDS ppm | Sal % | Cond uS/cm | Fe ppm | Mn ppm |
|----------------|------------------------------|----------------------------|----------------------------|-------------------|---------------|-------------|-----|------------------------|------------|----------|---------------|-----------|-----------|
| 02-Dec | 995 Sabine Rd | 0 | 0 | 0 | 0 | 10 | 6.7 | 0.75 | 40 | 0 | 85 | 0.03 | 0.001 |
| 09-Dec | Lot 4 San Malo | 0 | 0 | 0 | 0 | 9 | 6.7 | 0.12 | 39 | 0 | 84 | | |
| 16-Dec | 813 Alder Pl | 0 | 0 | | | | | | | | | | |
| | Average | 0 | 0 | 0 | 0 | 9.5 | 6.7 | 0.44 | 39.5 | 0.0 | 84.5 | 0.03 | 0.001 |
| | Maximum | 0 | 0 | 0 | 0 | 10 | 6.7 | 0.75 | 40 | 0 | 85 | 0.03 | 0.001 |
| | Minimum | 0 | 0 | 0 | 0 | 9 | 6.7 | 0.12 | 39 | 0 | 84 | 0.03 | 0.001 |

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

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

* Yellow Column Coliform tests are done by Health Department

Green tests are completed by RDN

Comments:

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

APPENDIX C

EMERGENCY RESPONSE PLAN

* Emergency Response Plan not included in Public Copy.