REGIONAL DISTRICT OF NANAIMO

Water Service Area Annual Report 2021

San Pareil Water Service Area

June 2022

REGIONAL DISTRICT OF NANAIMO
Water & Utility Services Department
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Table of Contents

1. Introduction

The following annual report describes the San Pareil Water Service Area and summarizes the water quality and production data from 2021. This report also includes a summary of inquiries and complaints, completed and proposed maintenance activities, Operator Certification, the Emergency Response & Contingency Plan, and the Cross Connection Control Program. This report is to be submitted to Island Health by the spring of 2022.

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. There are 288 water service connections in San Pareil. 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 passes through an upgraded ultraviolet disinfection process, is chlorinated, and is then stored in two reservoirs. A back-up generator is present at the pumphouse, should it be required. A map of the San Pareil Water System is provided in Appendix A.

2.1 Groundwater Wells

Two groundwater production wells are present in the well field at 1090 Plummer Road, Parksville, B.C. Well #2 was closed in 2012. Well #3 is utilized as a monitoring well, but also serves as a backup well to Well #4.

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

2.2 Reservoirs

Two concrete service reservoirs are present at 1090 Plummer Road, and have a capacity of 340 m^3 (75,000 imperial gallons) each.

2.3 Distribution System

The water distribution system in San Pareil, as summarized in the table below, is comprised of 6.6 km of asbestos-concrete and PVC watermains. Twenty (20) fire hydrants are present in the service area.

Watermain Material	Length of mains in San Pareil Water Service Area	Prevalence in Water Service Area
AC: 150mm or smaller AC: 200mm or larger	3.3 km n/a	50% n/a
PE: 50mm or smaller PVC: 150mm or smaller PVC: 200mm or larger	0.7 km 0.3 km 2.3 km	10% 4% 36%

Note: 'AC' is Asbestos-Concrete, 'PVC' is poly-vinylchloride (plastic), 'PE' is polyethylene

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, Temp, pH, Conductivity, Chlorine residual, Salinity, Turbidity, TDS
Weekly	BC Centre for Disease Control	Total coliforms, E.Coli
Annual Source Water Testing (every Fall)	Bureau Veritas	Complete potability testing of raw well water, including T. Ammonia, UVT
Annual System Water Testing (every Spring)	Bureau Veritas	Complete potability testing of distribution system, including T. Ammonia

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/san-pareil. Tables of water quality testing results for both the source water and distribution system are provided at the end of this report under Appendix B.

5. Water Quality Inquiries and Complaints

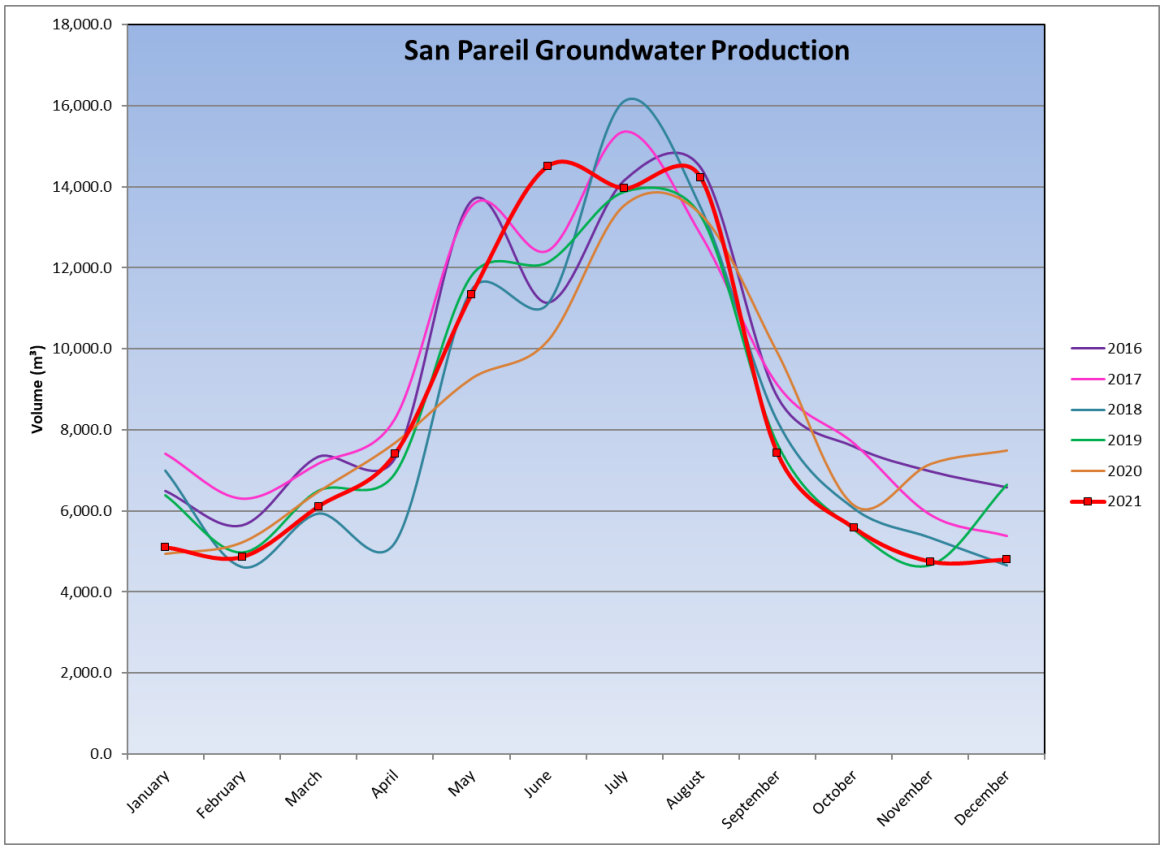
A few complaints were received from the San Pareil water service area in 2021 which were typically related to high water bills. Several refunds were subsequently issued under the RDN's Leak Policy. A small group of property owners on Shorewood Drive inquired about joining the service area, and are currently considering extending the community watermain at their own expense (not the taxpayers').

A summary of the water system incidents in 2021 is given in the table below.

Activity in 2021	Date(s)	History/Notes
Boil Water Advisories	None	None
High Turbidity Events	None	None
Equipment Malfunction	None	None
Water Main Breaks	None	None
Pump Failures	None	None

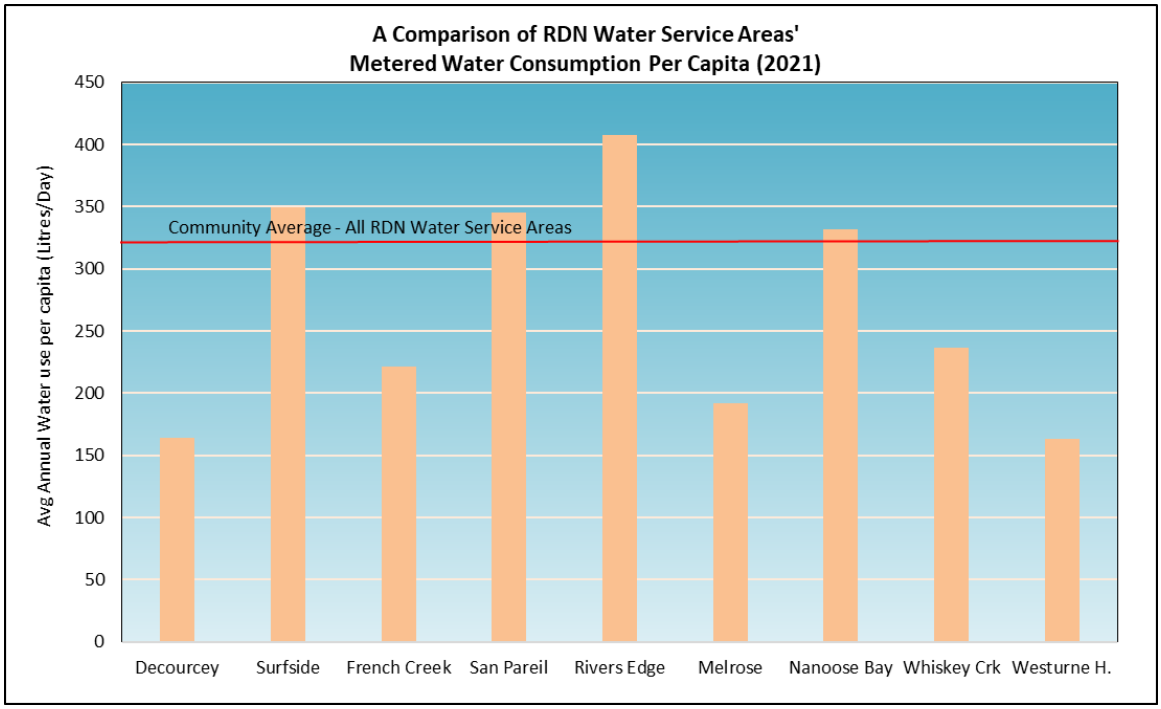
6. Groundwater Production and Consumption

The monthly groundwater production for San Pareil for the past 6 years is shown in the chart below. In 2021, groundwater production was average overall in comparison to previous years.



Consumption

In the Fall/Winter of 2021, the average usage per home in San Pareil was 0.57 cubic metres per day (125.4 imperial gallons). In the summer, the average water usage was 1.34 cubic metres per day (294.8 imperial gallons). Based on these figures, the annual consumption per capita is estimated to be 345 L/day (based on 2.4 people/household). This consumption is *8% more* than all the other RDN water system averages of 321 L/day/capita in 2021 (see graph on next page).



7. Maintenance Program

A weekly pump station inspection is carried out to reduce or eliminate the risk of contamination and system failure, and to ensure the consistent application of chlorine for treatment purposes. Fire hydrants are serviced once per year (either 'A-level' or 'B-level' maintenance) in the spring. The reservoirs are cleaned every 2-3 years. 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 is comprised of one Manager, one Project Engineer, one Engineering Technologist, one Engineering Technician, one Chief Operator, and seven certified 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
- ✓ Silica Awareness

9.0 Water System Projects

9.1 2021 Completed Studies & Projects

- Designed replacement of asbestos-concrete watermain;
- Corresponded with residents regarding water conservation;
- Enforced outdoor sprinkling regulations;
- Advised residents regarding water leak repairs;
- Implemented the 2021-2030 Water Conservation Plan;
- Completed regular watermain flushing and hydrant maintenance;
- Maintained a high level of water quality;
- Continued quality control through regular testing and monitoring of water system;
- Completed the San Pareil Water System SCADA Master Plan; and
- Began valve maintenance program.

San Pareil Well Site

9.2 2022 Proposed Projects & Upgrades

- Replace harmonic filter;
- Complete irrigation checks for high-water users;
- Continue watermain flushing program and hydrant maintenance;
- Utilize leak detection equipment and tracking;
- Continue valve maintenance program;
- Continue the 2021-2030 DWWP Water Conservation Plan; and
- Continue to offer numerous water-saving incentives via rebates.

10. Emergency Response & Contingency Plan

The Regional District Emergency Response & Contingency Plan (ERCP) 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 ERCP was reviewed and updated in 2020, and copies are available on our website, at each RDN office, in each pumphouse, and in each Water Services vehicle. A copy of the ERCP is also attached to this report in Appendix C.

11. Cross Connection Control

The RDN's Cross Connection Control Program was put in place to protect the public health by reducing the risk of contaminants flowing back into the public water supply. The RDN Manager of Water Services is the designated Cross Connection Control Manager.

The RDN's Cross Connection Control Program addresses cross connection threats through operating policies and procedures, as well as assisting customers with backflow preventer selection, installation, testing, maintenance and reporting. The program receives its authority from *RDN Cross Connection Control Regulation Bylaw No. 1788*, and the *British Columbia Building Code, Part 7*, which requires that potable water be protected from contamination. Additionally,

a webpage has been established at https://rdn.bc.ca/cross-connection-control-program to educate RDN water service customers about cross connection hazards, and lists the relevant links to current standards and resources.

Two of the RDN's water system operators received certification as backflow assembly testers through the British Columbia Water & Waste Association (BCWWA).

12. Cyber Security

The RDN uses a multi-level approach to cyber-security. Corporate network security is employed via a universal threat management gateway that implements various methods of data security, which includes daily definition updates to block known cyber threats. In addition, all RDN PC's are protected with anti-virus software. RDN water systems are connected to the corporate network via IP-Sec VPN's for remote management by information technology and equipment operators. Future infrastructure upgrades will see our water systems located on segregated networks to limit the vulnerability from cybersecurity threats.

13. Closing

An annual report for the year 2022 will be prepared and submitted to Island Health in the Spring of 2023. Annual reports are also available on our website at: www.rdn.bc.ca/san-pareil.

San Pareil Reservoir #2

APPENDIX A

MAP OF SAN PAREIL

WATER SERVICE AREA

SAN PAREIL

WATER SERVICE AREA

APPENDIX B

WATER QUALITY TESTING RESULTS

SAN PAREIL
WATER SERVICE AREA

island health

Facility Location:
Terrien Way

Facility Information: Facility Type: 15-300 connections DWC

Facility Sampling History:

Date Collected	Drinking Water System	Total E. Coli	Total Coliform	Site Name
01/20/2021	SAN PAREIL WATER SERVICE AREA	LT1	LT1	1090 Plummer Road
02/01/2021	SAN PAREIL WATER SERVICE AREA	LT1	LT1	1090 Plummer Road
02/17/2021	SAN PAREIL WATER SERVICE AREA	LT1	LT1	1090 Plummer Road
04/28/2021	SAN PAREIL WATER SERVICE AREA	LT1	LT1	1090 Plummer Road
05/26/2021	SAN PAREIL WATER SERVICE AREA	LT1	LT1	1090 Plummer Road
06/22/2021	SAN PAREIL WATER SERVICE AREA	LT1	LT1	1090 Plummer Road
07/28/2021	SAN PAREIL WATER SERVICE AREA	LT1	LT1	1090 Plummer Road
08/24/2021	SAN PAREIL WATER SERVICE AREA	LT1	LT1	1090 Plummer Road
09/28/2021	SAN PAREIL WATER SERVICE AREA	LT1	LT1	1090 Plummer Road
11/23/2021	SAN PAREIL WATER SERVICE AREA	LT1	LT1	1090 Plummer Road
12/08/2021	SAN PAREIL WATER SERVICE AREA	LT1	LT1	1090 Plummer Road
01/04/2021	SAN PAREIL WATER SERVICE AREA	LT1	LT1	793 San Malo Crescent
02/24/2021	SAN PAREIL WATER SERVICE AREA	LT1	LT1	793 San Malo Crescent
03/02/2021	SAN PAREIL WATER SERVICE AREA	LT1	LT1	793 San Malo Crescent
03/24/2021	SAN PAREIL WATER SERVICE AREA	LT1	LT1	793 San Malo Crescent
04/07/2021	SAN PAREIL WATER SERVICE AREA	LT1	LT1	793 San Malo Crescent
05/05/2021	SAN PAREIL WATER SERVICE AREA	LT1	LT1	793 San Malo Crescent

Date Collected	Drinking Water System	Total E. Coli	Total Coliform	Site Name
06/02/2021	SAN PAREIL WATER SERVICE AREA	LT1	LT1	793 San Malo Crescent
07/07/2021	SAN PAREIL WATER SERVICE AREA	LT1	LT1	793 San Malo Crescent
08/04/2021	SAN PAREIL WATER SERVICE AREA	LT1	LT1	793 San Malo Crescent
09/08/2021	SAN PAREIL WATER SERVICE AREA	LT1	LT1	793 San Malo Crescent
10/06/2021	SAN PAREIL WATER SERVICE AREA	LT1	LT1	793 San Malo Crescent
11/03/2021	SAN PAREIL WATER SERVICE AREA	LT1	LT1	793 San Malo Crescent
12/08/2021	SAN PAREIL WATER SERVICE AREA	LT1	LT1	793 San Malo Crescent
01/27/2021	SAN PAREIL WATER SERVICE AREA	LT1	LT1	962 Ballenas Rd
03/10/2021	SAN PAREIL WATER SERVICE AREA	LT1	LT1	962 Ballenas Rd
04/14/2021	SAN PAREIL WATER SERVICE AREA	LT1	LT1	962 Ballenas Rd
05/12/2021	SAN PAREIL WATER SERVICE AREA	LT1	LT1	962 Ballenas Rd
06/16/2021	SAN PAREIL WATER SERVICE AREA	LT1	LT1	962 Ballenas Rd
07/21/2021	SAN PAREIL WATER SERVICE AREA	LT1	LT1	962 Ballenas Rd
08/17/2021	SAN PAREIL WATER SERVICE AREA	LT1	LT1	962 Ballenas Rd
09/22/2021	SAN PAREIL WATER SERVICE AREA	LT1	LT1	962 Ballenas Rd
10/13/2021	SAN PAREIL WATER SERVICE AREA	LT1	LT1	962 Ballenas Rd
10/25/2021	SAN PAREIL WATER SERVICE AREA	LT1	LT1	962 Ballenas Rd
11/17/2021	SAN PAREIL WATER SERVICE AREA	LT1	LT1	962 Ballenas Rd
01/13/2021	SAN PAREIL WATER SERVICE AREA	LT1	LT1	995 Sabine Rd.
02/16/2021	SAN PAREIL WATER SERVICE AREA	LT1	LT1	995 Sabine Rd.
03/17/2021	SAN PAREIL WATER SERVICE AREA	LT1	LT1	995 Sabine Rd.
04/21/2021	SAN PAREIL WATER SERVICE AREA	LT1	LT1	995 Sabine Rd.
05/19/2021	SAN PAREIL WATER SERVICE AREA	LT1	LT1	995 Sabine Rd.

Date Collected	Drinking Water System	Total E. Coli	Total Coliform	Site Name
06/08/2021	SAN PAREIL WATER SERVICE AREA	LT1	LT1	995 Sabine Rd.
07/14/2021	SAN PAREIL WATER SERVICE AREA	LT1	LT1	995 Sabine Rd.
08/11/2021	SAN PAREIL WATER SERVICE AREA	LT1	LT1	995 Sabine Rd.
09/15/2021	SAN PAREIL WATER SERVICE AREA	LT1	LT1	995 Sabine Rd.
10/25/2021	SAN PAREIL WATER SERVICE AREA	LT1	LT1	995 Sabine Rd.
12/15/2021	SAN PAREIL WATER SERVICE AREA	LT1	LT1	995 Sabine Rd.
12/01/2021	SAN PAREIL WATER SERVICE AREA	LT1	LT1	Audit - 906 Ballenas San Pariel WS
01/04/2021	SAN PAREIL WATER SERVICE AREA	LT1	LT1	Water Hauling Tank Treated water
01/27/2021	SAN PAREIL WATER SERVICE AREA	LT1	LT1	Water Hauling Tank Treated water
02/03/2021	SAN PAREIL WATER SERVICE AREA	LT1	LT1	Water Hauling Tank Treated water
03/16/2021	SAN PAREIL WATER SERVICE AREA	LT1	LT1	Water Hauling Tank Treated water
09/15/2021	SAN PAREIL WATER SERVICE AREA	LT1	LT1	Water Hauling Tank Treated water
10/18/2021	SAN PAREIL WATER SERVICE AREA	LT1	LT1	Water Hauling Tank Treated water
11/15/2021	SAN PAREIL WATER SERVICE AREA	LT1	LT1	Water Hauling Tank Treated water
12/07/2021	SAN PAREIL WATER SERVICE AREA	LT1	LT1	Water Hauling Tank Treated water

Interpreting Sample Reports

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

LT1 Less than 1 (no detectable bacteria) - Meaning: No bacteria present

L1 Less than 1 (no detectable bacteria) - Meaning: No bacteria present

REJECT DELAY3 means sample was in transit too long and was not tested

Regional District of Nanaimo - Water Services Department

San Pareil Water Analysis - 2021 Monthly Report

		BC Centre for Disease Control		RDN In-House Laboratory and Spectrophotometer									
Date	Sample Location (Address)	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)
01-Dec-21	962 Ballenas			0	0	9	6.88	0.30	69.2	0.07	146.1	Fe and Mn are no longer tested in-house. See Annual Tap Water Results at https://www.rdn.bc.ca/san-pareil	
08-Dec-21	1090 Plummer			0	0	10	7.06	0.61	39.2	0.04	83.9		
08-Dec-21	793 San Malo			0	0	10		0.61					
14-Dec-21	995 Sabine			0	0	9	7.20	0.62	41.1	0.04	91.3		
20-Dec-21	962 Ballenas			0	0	9	7.18	0.05	53.9	0.04	99.1		
CDN Drinking Water Guidelines		<1	<1	<1	<1	n/a	7.0-10.5	n/a	500	n/a	n/a	0.3	**0.02** AO **0.12** MAC

Legend:

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

Green font indicates a value flagged for operational considerations

Orange font indicates non-compliance with the Aesthetic Objective (AO) in the Canadian Drinking Water Guidelines (CDWG)

Red font indicates non-compliance with the Maximum Acceptable Concentration (MAC) in the CDWG

Comments:

Iron and Manganese are no longer being tested in-house.

A full potability scan is completed once per year at an external lab that includes metals and minerals.

Regional District of Nanaimo - Water Services Department

San Pareil Water Analysis - 2021 Monthly Report

		BC Centre for Disease Control		RDN In-House Laboratory and Spectrophotometer									
Date	Sample Location (Address)	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)
03-Nov-21	793 San Malo	0	0	0	0	11	7.03	0.59	36.8	0.04	78.3	Fe and Mn are no longer tested in-house. See Annual Tap Water Results at https://www.rdn.bc.ca/san-pareil	
10-Nov-21	995 Sabine			0	0	11	7.07	0.69	35.2	0.03	75.0		
17-Nov-21	962 Ballenas			0	0	10	7.24	0.06	43.2	0.04	91.7		
CDN Drinking Water Guidelines		<1	<1	<1	<1	n/a	7.0-10.5	n/a	500	n/a	n/a	0.3	**0.02** AO **0.12** MAC

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Date	Sample Location (Address)	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)
05-Oct-21	793 San Malo	0	0	0	0	14	7.01	0.58	47.6	0.05	101.1	Fe and Mn are no longer tested in-house. See Annual Tap Water Results at https://www.rdn.bc.ca/san-pareil	
13-Oct-21	962 Ballenas	0	0	0	0	14	7.04	0.20	45.1	0.04	95.6		
25-Oct-21	995 Sabine	0	0	0	0	13	7.07	0.55	59.0	0.06	124.8		
25-Oct-21	962 Ballenas	0	0	0	0	13	7.10	0.59	60.2	0.06	121.9		
CDN Drinking Water Guidelines		<1	<1	<1	<1	n/a	7.0-10.5	n/a	500	n/a	n/a	0.3	**0.02** AO **0.12** MAC

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Date	Sample Location (Address)	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)
08-Sep-21	793 San Malo	0	0	0	0	16	6.73	0.76	49.4	0.05	104.6	Fe and Mn are no longer tested in-house. See Annual Tap Water Results at https://www.rdn.bc.ca/san-pareil	
15-Sep-21	995 Sabine	0	0	0	0	17	6.96	0.54	48.0	0.05	101.8		
22-Sep-21	962 Ballenas	0	0	0	0	15	7.04	0.53	48.7	0.05	103.2		
28-Sep-21	1090 Plummer	0	0	0	0	15	7.03	0.60	46.2	0.05	97.1		
CDN Drinking Water Guidelines		<1	<1	<1	<1	n/a	7.0-10.5	n/a	500	n/a	n/a	0.3	**0.02** AO **0.12** MAC

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Date	Sample Location (Address)	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)
04-Aug-21	793 San Malo	0	0	0	0	17	6.67	0.63	47.4	0.05	100.4	Fe and Mn are no longer tested in-house. See Annual Tap Water Results at https://www.rdn.bc.ca/san-pareil	
11-Aug-21	995 Sabine	0	0	0	0	16	6.74	0.61	47.6	0.05	100.8		
17-Aug-21	962 Ballenas	0	0	0	0	17	6.78	0.49	49.4	0.05	104.8		
24-Aug-21	1090 Plummer	0	0	0	0	16	6.75	0.75	47.3	0.05	100.2		
31-Aug-21	962 Ballenas			0	0	20	6.76	0.49	51.3	0.05	108.7		
CDN Drinking Water Guidelines		<1	<1	<1	<1	n/a	7.0-10.5	n/a	500	n/a	n/a	0.3	**0.02** AO **0.12** MAC

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Date	Sample Location (Address)	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)
07-Jul-21	793 San Malo	0	0	0	0	19	6.50	0.24	52.0	0.05	108.6	Fe and Mn are no longer tested in-house. See Annual Tap Water Results at https://www.rdn.bc.ca/san-pareil	
14-Jul-21	995 Sabine	0	0	0	0	17	6.69	0.67	42.3	0.04	89.8		
21-Jul-21	962 Ballenas	0	0	0	0	15	6.67	0.68	47.1	0.05	99.8		
28-Jul-21	1090 Plummer	0	0	0	0	18	6.65	0.37	91.3	0.09	192.2		
CDN Drinking Water Guidelines		<1	<1	<1	<1	n/a	7.0-10.5	n/a	500	n/a	n/a	0.3	**0.02** AO **0.12** MAC

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Date	Sample Location (Address)	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)
02-Jun-21	793 San Malo	0	0	0	0	12	7.00	0.69	29.2	0.03	62.3	Fe and Mn are no longer tested in-house. See Annual Tap Water Results at https://www.rdn.bc.ca/san-pareil	
08-Jun-21	995 Sabine			0	0	9	6.93	0.83	28.7	0.03	60.7		
16-Jun-21	962 Ballenas			0	0	13	7.02	0.51	32.1	0.03	68.3		
22-Jun-21	1090 Plummer			0	0	11	6.79	0.71	32.3	0.03	68.6		
28-Jun-21	962 Ballenas	0	0	0	0	16	8.41	0.46	33.8	0.03	72.0		
CDN Drinking Water Guidelines		<1	<1	<1	<1	n/a	7.0-10.5	n/a	500	n/a	n/a	0.3	**0.02** AO **0.12** MAC

Legend:

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

Green font indicates a value flagged for operational considerations

Orange font indicates non-compliance with the Aesthetic Objective (AO) in the Canadian Drinking Water Guidelines (CDWG)

Red font indicates non-compliance with the Maximum Acceptable Concentration (MAC) in the CDWG

Comments:

Iron and Manganese are no longer being tested in-house.

A full potability scan is completed once per year at an external lab that includes metals and minerals.

Regional District of Nanaimo - Water Services Department

San Pareil Water Analysis - 2021 Monthly Report

		BC Centre for Disease Control		RDN In-House Laboratory and Spectrophotometer									
Date	Sample Location (Address)	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)
05-May-21	793 San Malo	0	0	0	0	8	6.63	0.86	28.9	0.03	61.6	Fe and Mn are no longer tested in-house. See Annual Tap Water Results at https://www.rdn.bc.ca/san-pareil	
12-May-21	962 Ballenas	0	0	0	0	10	6.64	0.44	29.5	0.03	62.9		
19-May-21	995 Sabine	0	0	0	0	9	6.70	0.71	29.5	0.03	62.8		
26-May-21	1090 Plummmer	0	0	0	0	9	6.89	0.84	30.2	0.03	64.2		
CDN Drinking Water Guidelines		<1	<1	<1	<1	n/a	7.0-10.5	n/a	500	n/a	n/a	0.3	**0.02** AO **0.12** MAC

Legend:

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Regional District of Nanaimo - Water Services Department

San Pareil Water Analysis - 2021 Monthly Report

		BC Centre for Disease Control		RDN In-House Laboratory and Spectrophotometer									
Date	Sample Location (Address)	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)
07-Apr-21	793 San Malo	0	0	0	0	8	6.55	0.72	30.3	0.03	64.5	Fe and Mn are no longer tested in-house. See Annual Tap Water Results at https://www.rdn.bc.ca/san-pareil	
14-Apr-21	962 Ballenas	0	0	0	0	9	6.71	0.53	31.0	0.03	70.0		
21-Apr-21	995 Sabine	0	0	0	0	9	7.02	0.50	31.7	0.03	67.4		
28-Apr-21	1090 Plummer	0	0	0	0	8	6.65	0.30	28.6	0.03	60.9		
CDN Drinking Water Guidelines		<1	<1	<1	<1	n/a	7.0-10.5	n/a	500	n/a	n/a	0.3	**0.02** AO **0.12** MAC

Legend:

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Regional District of Nanaimo - Water Services Department

San Pareil Water Analysis - 2021 Monthly Report

		BC Centre for Disease Control		RDN In-House Laboratory and Spectrophotometer									
Date	Sample Location (Address)	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)
03-Mar-21	793 San Malo	0	0	0	0	7	6.68	0.38	35.8	0.04	76.2	Fe and Mn are no longer tested in-house. See Annual Tap Water Results at https://www.rdn.bc.ca/san-pareil	
10-Mar-21	962 Ballenas	0	0	0	0	8	6.74	0.25	37.8	0.04	80.4		
17-Mar-21	995 Sabine			0	0	8	6.58	0.96	33.2	0.03	70.5		
24-Mar-21	793 San Malo	0	0	0	0	7	6.90	0.95	36.1	0.04	75.9		
30-Mar-21	995 Sabine			0	0	8	6.89	0.80	32.1	0.03	75.9		
CDN Drinking Water Guidelines		<1	<1	<1	<1	n/a	7.0-10.5	n/a	500	n/a	n/a	0.3	**0.02** AO **0.12** MAC

Legend:

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

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Comments:

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Regional District of Nanaimo - Water Services Department

San Pareil Water Analysis - 2021 Monthly Report

		BC Centre for Disease Control		RDN In-House Laboratory and Spectrophotometer									
Date	Sample Location (Address)	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)
01-Feb-21	1090 Plummer	0	0	0	0	8	6.47	0.70	41.6	0.04	88.4	Fe and Mn are no longer tested in-house. See Annual Tap Water Results at https://www.rdn.bc.ca/san-pareil	
09-Feb-21	962 Ballenas			0	0	8	6.61	0.24	46.7	0.05	98.9		
16-Feb-21	995 Sabine	0	0	0	0	7	6.79	0.89	38.9	0.04	82.6		
17-Feb-21	1090 Plummer	0	0	0	0	7	6.71	0.90	40.1	0.04	90.1		
24-Feb-21	793 San Malo	0	0	0	0	7	6.61	0.70	36.5	0.04	77.7		
CDN Drinking Water Guidelines		<1	<1	<1	<1	n/a	7.0-10.5	n/a	500	n/a	n/a	0.3	**0.02** AO **0.12** MAC

Legend:

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

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Comments:

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A full potability scan is completed once per year at an external lab that includes metals and minerals.

Regional District of Nanaimo - Water Services Department

San Pareil Water Analysis - 2021 Monthly Report

		BC Centre for Disease Control		RDN In-House Laboratory and Spectrophotometer									
Date	Sample Location (Address)	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)
04-Jan-21	793 San Malo	0	0	0	0	9	6.59	0.59	35.1	0.03	64.7	Fe and Mn are no longer tested in-house. See Annual Tap Water Results at https://www.rdn.bc.ca/san-pareil	
04-Jan-21	1090 Plummer			0	0	8	6.57	0.80	30.7	0.03	65.1		
13-Jan-21	995 Sabine	0	0	0	0	9	6.95	0.72	37.6	0.04	79.9		
20-Jan-21	1090 Plummer	0	0	0	0	8	6.58	0.20	42.9	0.04	89.5		
27-Jan-21	962 Ballenas	0	0	0	0	8	6.62	0.19	44.9	0.04	95.0		
CDN Drinking Water Guidelines		<1	<1	<1	<1	n/a	7.0-10.5	n/a	500	n/a	n/a	0.3	**0.02** AO **0.12** MAC

Legend:

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

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Orange font indicates non-compliance with the Aesthetic Objective (AO) in the Canadian Drinking Water Guidelines (CDWG)

Red font indicates non-compliance with the Maximum Acceptable Concentration (MAC) in the CDWG

Comments:

Iron and Manganese are no longer being tested in-house.

A full potability scan is completed once per year at an external lab that includes metals and minerals.

REGIONAL DISTRICT OF NANAIMO

San Pareil #1 Raw Well Water Analysis
1090 Plummer Road

CDWG=Canadian Drinking Water Guidelines
MAC=Maximum Acceptable Concentration
OG= Operational Guidance Value
AO= Asthetic Objective

Green font indicates a value flagged for operational considerations.
Orange font indicates non-compliance with the Aesthetic Objective in the Canadian Drinking Water Guidelines (CDWG)
Red font indicates non-compliance with the Maximum Acceptable Concentration (MAC) in the CDWG

	Units	CDWG		October 12 2016	September 20 2017	October 29 2018	October 3 2019	October 20 2020	October 14 2021
Miscellaneous Inorganics									
Fluoride	mg/L	1.5	MAC	0.015	0.023	0.02	<0.05	<0.05	<0.05
Alkalinity (total as $CaCO_3$)	mg/L			25.5	23.8	24.6	22	26	28
Anions									
Dissolved Sulphate	mg/L	500	AO	2	1.7	1.6	1.7	2.6	2.5
Dissolved Chloride	mg/L	250	AO	15	13	16	15	8.3	6.8
Nitrite	mg/L	1	MAC	<0.0050	<0.0050	<0.0050	<0.005	<0.005	<0.005
Miscellaneous									
Apparent Colour	Colour Unit			<5.0	5	5	5	10	<5
Nutrients									
Total Ammonia	mg/L			0.081	<0.020	<0.020	0.084	<0.015	<0.015
Physical Properties									
Conductivity	µS/cm			102	91.4	106	100	80	74
pH	pH	7.0:10.5	OG	7.31	7.59	7.42	**6.93**	7.38	7.13
TDS	mg/L	500	AO	64	54	72	66	58	68
Turbidity	NTU			0.16	0.14	0.13	<0.10	<0.10	<0.1
Microbiological Parameters									
E.coli	MPN/100mL	<1	MAC	<1.0	<1.0	<1.0	0	0	0
Total Coliforms	MPN/100mL	<1	MAC	**6.4**	**14**	<1.0	**4.2**	0	0
Calculated Parameters									
Total Hardness ($CaCO_3$)	mg/L			32.2	29.9	35.1	30.8	26.2	24.3
Nitrate	mg/L	10	MAC	0.149	0.090	0.090	0.114	0.104	0.087
Elements									
Total Mercury	mg/L	0.001	MAC	<0.00001	<0.00001	<0.000002	<0.000002	<0.000019	<0.0000019
Total Metals									
Total Aluminum	mg/L	0.1	OG	0.0058	0.008	0.008	0.0043	0.0084	0.0078
Total Antimony	mg/L	0.006	MAC	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Total Arsenic	mg/L	0.01	MAC	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Total Barium	mg/L	1	MAC	0.0055	0.005	0.0052	0.005	0.004	0.0036
Total Beryllium	mg/L			<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Total Bismuth	mg/L			<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Total Boron	mg/L	5	MAC	<0.050	<0.050	<0.050	<0.05	<0.05	<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	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Total Cobalt	mg/L			<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Total Copper	mg/L	1	AO	0.00634	0.00185	0.0106	0.00065	0.00083	0.00329
Total Iron	mg/L	0.3	AO	0.0065	0.0104	0.0289	0.0083	0.0148	0.0082
Total Lead	mg/L	0.01	MAC	0.00092	0.00065	0.00129	<0.0002	<0.0002	<0.0002
Total Manganese	mg/L	0.02 0.12	AO MAC	<0.001	<0.001	0.0036	<0.001	0.0017	<0.001
Total Molybdenum	mg/L			<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Total Nickel	mg/L			<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Total Selenium	mg/L	0.05	MAC	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Total Silicon	mg/L			3.02	3.48	2.81	2.5	2.92	2.88
Total Silver	mg/L			<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002
Total Strontium	mg/L			0.0489	0.042	0.0476	0.0418	0.0345	0.0341
Total Thallium	mg/L			<0.00005	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
Total Tin	mg/L			<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Total Titanium	mg/L			<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Total Uranium	mg/L	0.02	MAC	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Total Vanadium	mg/L			<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Total Zinc	mg/L	5	AO	<0.005	<0.005	0.0072	<0.005	<0.005	<0.005
Total Zirconium	mg/L			<0.0005	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Total Calcium	mg/L			10.4	9.75	11.5	10.1	8.44	7.94
Total Magnesium	mg/L			1.54	1.35	1.56	1.38	1.26	1.08
Total Potassium	mg/L			0.213	0.194	0.207	0.192	0.198	0.168
Total Sodium	mg/L	200	AO	5.82	4.64	4.99	5.1	4.55	3.94
Total Sulphur	mg/L			<3.0	<3.0	<3.0	<3	<3	<3
UVT	%T/cm			97.0	>97.7	97.4	95.3	93.7	95.0

Notes below about pH (2015) from https://www.canada.ca/content/dam/hc-sc/migration/hc-sc/ewh-semt/alt_formats/pdf/pubs/water-eau/sum_guide-res_recom/summary-table-EN-2020-02-11.pdf

Type	Parameter (published, reaffirmed)	MAC (mg/L)	Other value (mg/L)	Common sources of parameter in water	Health considerations	Comments
Treatment-related	pH (2015)	None	7.0-10.5	Not applicable	Not applicable	The control of pH is important to maximize treatment effectiveness, control corrosion and reduce leaching from distribution system and plumbing components.

REGIONAL DISTRICT OF NANAIMO

San Pareil #4 Raw Well Water Analysis
1090 Plummer Road

CDWG=Canadian Drinking Water Guidelines
MAC=Maximum Acceptable Concentration
OG= Operational Guidance Value
AO= Asthetic Objective

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Red font indicates non-compliance with the Maximum Acceptable Concentration (MAC) in the CDWG

	Units	CDWG		October 12 2016	September 20 2017	October 29 2018	October 17 2019	October 20 2020	October 14 2021
Miscellaneous Inorganics									
Fluoride	mg/L	1.5	MAC	0.015	0.026	0.021	<0.05	<0.05	<0.05
Alkalinity (total as CaCO)	mg/L			22.1	24	22.4	21	26	27
Anions									
Dissolved Sulphate	mg/L	500	AO	1.8	1.7	1.4	1.5	2.3	3.7
Dissolved Chloride	mg/L	250	AO	16	12	14	14	7.8	8.4
Nitrite	mg/L	1	MAC	<0.0050	<0.0050	<0.0050	<0.005	<0.005	<0.005
Miscellaneous									
Apparent Colour	Colour Unit			5	5	5	5	10	<5
Nutrients									
Total Ammonia	mg/L			0.084	<0.020	<0.020	0.064	<0.015	<0.015
Physical Properties									
Conductivity	µS/cm			100	91.3	96	96	77	79
pH	pH	7.0:10.5	OG	7.21	7.66	7.39	**6.97**	7.36	7.22
TDS	mg/L	500	AO	70	66	58	70	62	62
Turbidity	NTU			0.17	0.25	0.25	<0.1	<0.1	0.1
Microbiological Parameters									
E.coli	MPN/100mL	<1	MAC	<1.0	<1.0	<1.0	0	0	0
Total Coliforms	MPN/100mL	<1	MAC	**5.3**	<1.0	<1.0	0	0	0
Calculated Parameters									
Total Hardness (CaCO)	mg/L			31.1	30.3	31.9	29	25.5	25.8
Nitrate	mg/L	10	MAC	0.229	0.111	0.113	0.135	0.1	0.108
Elements									
Total Mercury	mg/L	0.001	MAC	<0.00001	<0.00001	0.0000048	<0.000002	<0.0000019	<0.0000019
Total Metals									
Total Aluminum	mg/L	0.1	OG	0.0069	0.0067	0.0083	0.0045	0.008	0.0104
Total Antimony	mg/L	0.006	MAC	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Total Arsenic	mg/L	0.01	MAC	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Total Barium	mg/L	1	MAC	0.0034	0.0028	0.0032	0.0031	0.004	0.0029
Total Beryllium	mg/L			<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Total Bismuth	mg/L			<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Total Boron	mg/L	5	MAC	<0.050	<0.050	<0.050	<0.05	<0.05	<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	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Total Cobalt	mg/L			<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Total Copper	mg/L	1	AO	0.00623	0.00153	0.0103	0.00085	0.00078	0.00353
Total Iron	mg/L	0.3	AO	0.0218	0.026	0.0206	0.0151	0.0101	0.0221
Total Lead	mg/L	0.01	MAC	0.0007	0.00053	0.00071	<0.0002	<0.0002	<0.0002
Total Manganese	mg/L	0.02 0.12	AO MAC	0.0077	0.0092	0.0022	0.0024	0.0013	0.0033
Total Molybdenum	mg/L			<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Total Nickel	mg/L			<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Total Selenium	mg/L	0.05	MAC	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Total Silicon	mg/L			3.37	4.05	3.31	2.96	2.87	3.56
Total Silver	mg/L			<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002
Total Strontium	mg/L			0.047	0.0414	0.0436	0.0382	0.0346	0.0366
Total Thallium	mg/L			<0.00005	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
Total Tin	mg/L			<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Total Titanium	mg/L			<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Total Uranium	mg/L	0.02	MAC	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Total Vanadium	mg/L			<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Total Zinc	mg/L	5	AO	<0.005	<0.005	0.0097	<0.005	<0.005	<0.005
Total Zirconium	mg/L			<0.0005	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Total Calcium	mg/L			9.83	9.73	10.5	9.37	8.24	8.31
Total Magnesium	mg/L			1.6	1.47	1.41	1.36	1.21	1.23
Total Potassium	mg/L			0.339	0.285	0.31	0.287	0.175	0.306
Total Sodium	mg/L	200	AO	5.54	4.7	4.55	4.91	4.55	4.18
Total Sulphur	mg/L			<3.0	<3.0	<3.0	<3.0	<3	<3
UVT	%T/cm			97.2	97.5	97.4	95.1	93.4	95.0

Notes below about pH (2015) from https://www.canada.ca/content/dam/hc-sc/migration/hc-sc/ewh-semt/alt_formats/pdf/pubs/water-eau/sum_guide-res_recom/summary-table-EN-2020-02-11.pdf

Type	Parameter (published, reaffirmed)	MAC (mg/L)	Other value (mg/L)	Common sources of parameter in water	Health considerations	Comments
Treatment-related	pH (2015)	None	7.0-10.5	Not applicable	Not applicable	The control of pH is important to maximize treatment effectiveness, control corrosion and reduce leaching from distribution system and plumbing components.

REGIONAL DISTRICT OF NANAIMO

San Pareil Distribution (Tap Water) Analysis
793 San Malo Crescent

CDWG=Canadian Drinking Water Guidelines
OG= Operational Guidance Value
MAC=Maximum Acceptable Concentration
AO= Asthetic Objective

Grey font indicates a value flagged for operational considerations
Orange font indicates non-compliance with the Aesthetic Objective in the Canadian Drinking Water Guidelines (CDWG)
Red font indicates non-compliance with the Maximum Acceptable Concentration (MAC) in the CDWG

	Units	CDWG		May 19 2015	May 10 2016	May 10 2017	May 2 2018	May 23 2019	May 21 2020	May 6 2021
Miscellaneous Inorganics										
Fluoride	mg/L	1.5	MAC	0.022	0.021	0.027	0.023	<0.02	<0.05	<0.05
Alkalinity (total as CaCO)	mg/L			25.1	25.7	25.3	24.7	22.7	21	22
Anions										
Dissolved Sulphate	mg/L	500	AO	1.91	1.95	1.88	2.2	1.2	1.8	2.4
Dissolved Chloride	mg/L	250	AO	9	6	4.1	5	7.3	5.5	5.6
Nitrite	mg/L	1	MAC	<0.0050	<0.0050	<0.0050	<0.0050		<0.005	<0.005
Miscellaneous										
Apparent Colour	Colour Unit			<5	5	10	5	5	5	10
Nutrients										
Total Ammonia	mg/L			0.0071	0.014	0.2	<0.020	<0.015	<0.015	<0.015
Physical Properties										
Conductivity	µS/cm			82.9	72.3	66.9	64	72.8	62	62
pH	pH	7.0:10.5	AO	7.41	7.26	7.43	7.25	7.31	6.92	7.1
TDS	mg/L	500	AO	50	58	26	52	42	36	30
Turbidity	NTU			<0.10	<0.10	0.14	<0.10	<0.1	0.16	<0.1
Microbiological Parameters										
E.coli	MPN/100mL	<1	MAC	<1.0	<1.0	<1.0	<1.0	0	0	0
Total Coliforms	MPN/100mL	<1	MAC	<1.0	<1.0	<1.0	<1.0	0	0	0
Calculated Parameters										
Total Hardness (CaCO)	mg/L			29.7	23.6	22.6	20.6	21.2	19.9	20.1
Nitrate	mg/L	10	MAC	0.05	0.05	0.06	0.042		<0.02	0.043
Elements										
Total Mercury	mg/L	0.001	MAC	<0.00001	<0.00001	<0.00001	0.0000021	<0.000002	<0.0000019	<0.0000019
Total Metals										
Total Aluminum	mg/L	0.1	OG	0.008	0.0104	0.0138	0.0152	0.0094	0.0145	0.0143
Total Antimony	mg/L	0.006	MAC	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Total Arsenic	mg/L	0.01	MAC	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Total Barium	mg/L	1	MAC	0.0035	0.0031	0.0034	0.0027	0.0027	0.0024	0.0024
Total Beryllium	mg/L			<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Total Bismuth	mg/L			<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Total Boron	mg/L	5	MAC	<0.05	<0.05	<0.050	<0.050	<0.05	<0.05	<0.05
Total Cadmium	mg/L	0.005	MAC	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
Total Chromium	mg/L	0.05	MAC	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Total Cobalt	mg/L			<0.0005	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Total Copper	mg/L	1	AO	0.0026	0.00332	0.00428	0.00516	0.0045	0.00454	0.00616
Total Iron	mg/L	0.3	AO	0.016	0.0147	0.0185	0.0147	0.0117	0.0134	0.0156
Total Lead	mg/L	0.01	MAC	0.00183	0.00053	0.0006	0.00089	0.00115	0.00065	0.00108
Total Manganese	mg/L	0.02 0.12	AO MAC	0.0052	0.0034	0.0016	<0.001	0.0014	<0.001	<0.001
Total Molybdenum	mg/L			<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Total Nickel	mg/L			<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Total Selenium	mg/L	0.05	MAC	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Total Silicon	mg/L			3.7	3.46	3.56	3.07	3.36	3.16	3.02
Total Silver	mg/L			<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002
Total Strontium	mg/L			0.0372	0.032	0.0304	0.0273	0.0316	0.0263	0.0261
Total Thallium	mg/L			<0.00005	<0.00005	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
Total Tin	mg/L			<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Total Titanium	mg/L			<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Total Uranium	mg/L	0.02	MAC	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Total Vanadium	mg/L			<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Total Zinc	mg/L	5	AO	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Total Zirconium	mg/L			<0.0005	<0.0005	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Total Calcium	mg/L			9.87	7.6	7.38	6.55	6.84	6.43	6.44
Total Magnesium	mg/L			1.23	1.13	1.03	1.04	1	0.928	0.972
Total Potassium	mg/L			0.212	0.197	0.194	0.189	0.184	0.181	0.175
Total Sodium	mg/L	200	AO	4.52	4.4	4.15	4.34	4.09	4.12	4.11
Total Sulphur	mg/L			<3.0	<3.0	<3.0	<3.0	<3	<3	<3

Notes below about pH (2015) from https://www.canada.ca/en/health-canada/services/environmental-workplace-health/reports-publications/water-quality/guidelines-canadian-drinking-water-quality-summary-table.html#_ftn1

Type	Parameter (published, reaffirmed)	MAC (mg/L)	Other value (mg/L)	Common sources of parameter in water	Health considerations	Comments
Treatment-related	pH (2015)	None	7.0-10.5	Not applicable	Not applicable	The control of pH is important to maximize treatment effectiveness, control corrosion and reduce leaching from distribution system and plumbing components.