


REGIONAL DISTRICT OF NANAIMO

Water Service Area Annual Report 2015



San Pareil Water Service Area

June 2016

REGIONAL DISTRICT OF NANAIMO
Water & Utility Services Department

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1. Introduction

The following annual report describes the San Pareil Water Service Area and summarizes the water quality and production data from 2015. 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 Island Health by the Spring of 2016.

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 281 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 is chlorinated and stored in one reservoir. 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 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	Closed	Not in use
#3	7.0 m	Yes	Not in use
#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 m³ (75,000 imperial gallons) each.

2.3 Distribution System

In 2012, watermains along Shorewood Drive, Shorewood Close, and Terrien Way were upgraded to 200mm PVC (approx. 1,700m). Four more fire hydrants were installed throughout the water service area, bringing the total number of fire hydrants in San Pareil to twenty (20). The water distribution system in San Pareil is summarized in the table below.

Watermain Material	Length of mains in San Pareil Water Service Area	Prevalence in Water Service Area
AC: 150mm or smaller AC: 200mm or larger	3.4 km n/a	52% n/a
PE: 50mm or smaller PVC: 150mm or smaller PVC: 200mm or larger	0.7 km 0.2 km 2.3 km	10% 2% 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. 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, UVT, Turbidity, TDS Iron and Manganese (Monthly)
Weekly	Maxxam Labs	Turbidity UVT (Monthly)
Semi-Monthly	BC Centre for Disease Control	Total coliforms, E.Coli
Quarterly	Maxxam Labs	Total ammonia, nitrates, THMs
Annual Source Water Testing (every Fall)	Maxxam Labs	Complete potability testing of raw well water, including T. Ammonia
Annual System Water Testing (every Spring)	Maxxam Labs	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 in the Services section, under “Water & Utility Services” then “WaterSmart Communities”. Tables of water quality testing results for both the source water and distribution system are provided at the end of this report under Appendix B.

GWUDI- Ground Water Under Direct Influence (of surface water)

A GWUDI (Ground Water Under Direct Influence [of surface water]) investigation was conducted by Thurber Engineering Ltd. in 2010, and a follow-up investigation was completed in 2012. Thurber Engineering confirmed that there is a direct hydraulic connection between the aquifer at the San Pareil well field, the nearby wetlands, and likely the Englishman River. Well #1 and Well #4 are considered ‘at risk’ of containing pathogens from a GWUDI situation.

To ensure the provision of microbiologically safe drinking water, the groundwater supply from the San Pareil well field is chlorinated. Thurber Engineering was retained in 2015 to determine if the sand and gravel aquifer poses a suitable “filter” between the river and the RDN well field. The results of this study are expected in 2016.

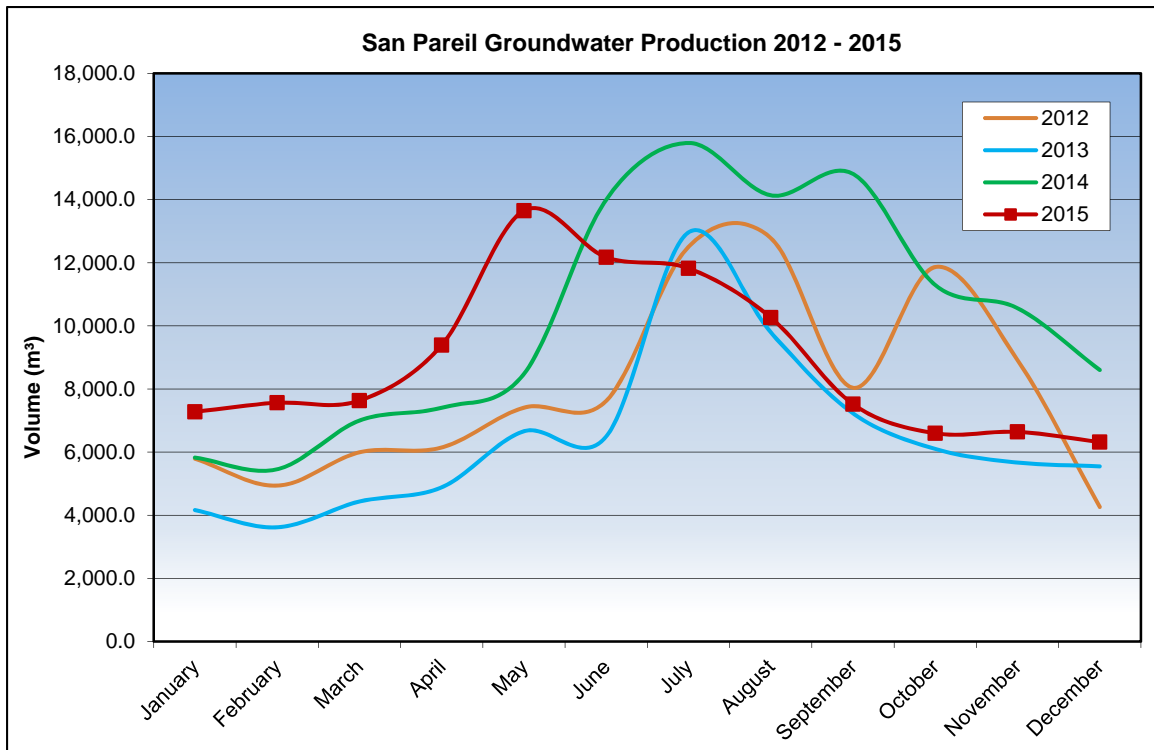
The current level of treatment will continue to be monitored, and in 2016 costs will be explored to incorporate ultra-violet (UV) treatment as secondary water supply disinfection. Public consultation will take place before any expenditures are made on additional water treatment.

5. Water Quality Inquiries and Complaints

Very few complaints and inquiries were received from the San Pareil water service area in 2015, and were typically related to high water bills.

6. Groundwater Production and Consumption

The monthly groundwater production for San Pareil for the past 4 years is shown in the chart below. In 2015, groundwater production was higher in April-May than in previous years largely due to early hot weather conditions. From July onwards, production was typically lower than in previous years due to the Stage 4 watering restrictions that were put in place.



Consumption

In the Fall/Winter of 2015, the average usage per home in San Pareil was 0.44 cubic metres per day (97 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 247 L/day (based on 2.4 people/household). This consumption is 8% less than the RDN system average of 276 L/day/capita in 2015.

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 Fall. The reservoirs are cleaned every 2-3 years (last cleaned in 2014). Twenty-four hour on-call coverage is in place to respond to water system emergencies and alarms.

8. Water System Projects

8.1 2015 Completed Studies & Projects

- Added a railing and ladder to the new reservoir;
- Monitored turbidity in river and well field;
- Offered free irrigation audits to high water users;
- Updated the Standard Operating Procedures;
- Updated the Emergency Response Plan;
- Authorized water bill rebates under the RDN Leak Policy;
- Completed annual fire hydrant maintenance;
- Upgraded some hydrants that didn't have pumper ports;
- Enforced the outdoor sprinkling regulations;
- Carried out a comprehensive water conservation campaign (Team WaterSmart);
- Updated the RDN websites at www.rdn.bc.ca and www.sanpareilwater.ca;
- Utilized the Auto E-message service to notify member residents of water service disruptions and upcoming maintenance activities;
- Applied a rainwater harvesting (rain barrel) incentive;
- Maintained a high level of water quality;
- Maintained excellent customer complaint and service request response times;
- Continued quality control through regular testing and monitoring; and
- Completed additional educational programs.



San Pareil Well Site

8.2 2016 Proposed Projects & Upgrades

- Apply to Island Health for a water filtration deferral;
- Contact property owners about the cost and reason for additional water treatment (i.e. UV) in San Pareil;
- Complete annual fire hydrant maintenance;
- Enforce the outdoor sprinkling regulations;
- Carry out a comprehensive water conservation campaign (Team WaterSmart);
- Update and improved the RDN website at www.rdn.bc.ca;
- Offer free irrigation audits to high water users;
- Utilize the Auto E-message service to notify member residents of water service disruptions and upcoming maintenance activities;
- Apply a rainwater harvesting (rain barrel) incentive;
- Maintain a high level of water quality;
- Maintain excellent customer complaint and service request response times;
- Continue quality control through regular testing and monitoring;
- Meet the new Water Sustainability Act as it applies to well licensing; and
- Complete additional educational programs.

9. Emergency Response Plan

The Regional District Emergency Response Plan (ERP) contains procedures and contact information to efficiently respond to water system emergencies such as contamination of water supply, loss of supply, and pump failure. The ERP was reviewed and updated in 2015, and copies are available on our website, at each RDN office, in each pumphouse, and in each Water Services vehicle. A copy of the ERP is also attached to this report in Appendix C.

10. Cross Connection Control

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 Prevention Tester re-certification in 2016.

11. Closing

An annual report for the year 2016 will be prepared and submitted to Island Health in the Spring of 2017. Annual reports are also available on our website at www.rdn.bc.ca in the SERVICES section, under “Water & Utility Services” then “WaterSmart Communities”.

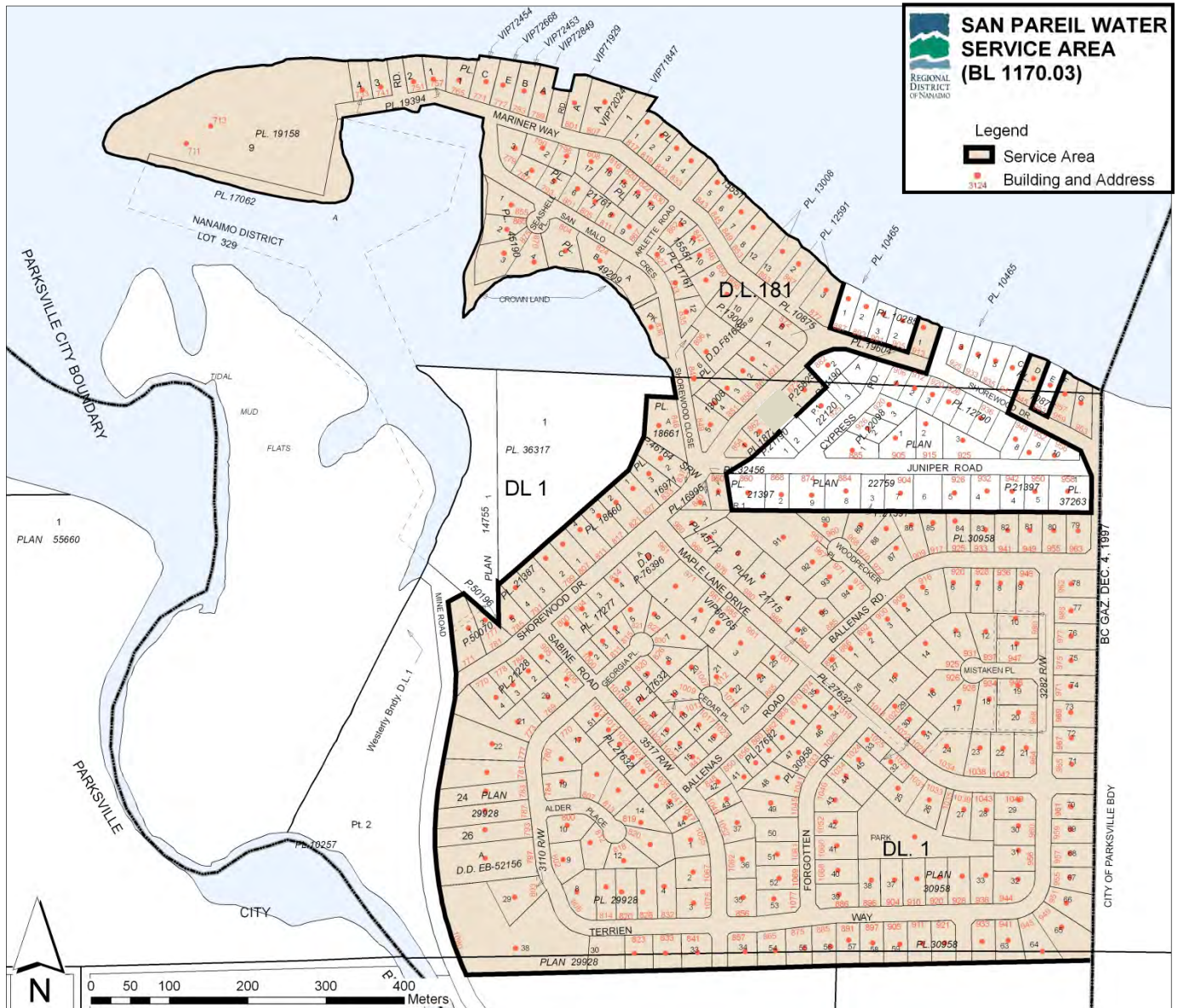


**San Pareil
Reservoir #2
June 2015**

APPENDIX A

**MAP OF SAN PAREIL
WATER SERVICE AREA**

SAN PAREIL WATER SERVICE AREA



APPENDIX B

WATER QUALITY TESTING RESULTS